



Published in final edited form as:

J Trauma Stress. 2007 October ; 20(5): 845–855. doi:10.1002/jts.20252.

Multiple Traumatic Events and Psychological Distress : The South Africa Stress and Health Study

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Abstract

Using nationally representative data from South Africa, we examine lifetime prevalence of traumas and multiple traumas (number of events). Employing multiple regression analysis, we study sociodemographic risk of trauma, and the association between trauma and distress. Results indicate most South Africans experience at least one traumatic event during their lives, with the majority reporting multiple. Consistent variation in risk is evident for gender and marital status but not other sociodemographics. Trauma is positively related to high distress, and findings also support a cumulative effect of trauma exposure. Individuals with the most traumas (6+) appear at five- times greater risk of high distress. This study highlights the importance of considering traumatic events in the context of other traumas in South Africa.

Trauma is deeply rooted in South African society. South Africa has been considered one of the most violent countries and has been termed the “rape capital of the world” (Human Rights Watch, 1995). However, national lifetime prevalence of multiple forms of trauma is not firmly established. Further, nationally-based studies of trauma in the South Africa context have not examined multiple traumas simultaneously. Studies with U.S. samples have shown the importance of considering traumatic events in the context of other traumas (e.g., Green et al., 2000). Given the assumed burden of trauma in South Africa, it is important that research uncovers precise rates of traumas and links to mental health. Investigating individual and cumulative effects of trauma in a large, national sample can contribute to understanding the South African trauma burden. The purpose of the present study is to uncover the lifetime trauma prevalence in South Africa by assessing individual and multiple traumas. A secondary purpose involves examining individual and cumulative influences of trauma on global distress.

Trauma in South African Context

The extant literature suggests that South Africa is characterized by high rates of murder, assault, and robbery. Rates of particular crimes have been rising since the 1990’s. South

Africa's recent history of Apartheid state-sponsored violence and its struggle for liberation has contributed to what some refer to as a culture of violence (Nedcor Project on Crime, 1996), in which violence is viewed as a first line of defense for dealing with problems. Many South Africans view criminal victimization as the most serious problem they face (Louw, 1997). Importantly, crime-related events are linked to psychological consequences in South Africa (e.g., Hirschowitz & Orkin, 1997), and other settings (Frieze, Hymer, & Greenberg, 1987; Resnick et al., 1993).

High rates of violence could stem, in part, from the historical context of South Africa, characterized by political violence. In a nationwide probability sample, Hirschowitz and Orkin (1997) found approximately one-quarter (23%) of respondents had been exposed to politically based violence, such as being attacked or witnessing an attack. These experiences were related to increased depression and anxiety symptoms.

However, interpersonal violence is also common. Jewkes and colleagues (2002) found the lifetime prevalence of violence against women in three South African provinces was 24.6%. Psychological problems following interpersonal violence have been found in South Africa (Marais, de Villiers, Moller, & Stein, 1999), supporting a long line of U.S. research (Basile, Arias, Desai, & Thompson, 2004; Frieze, 2005), where interpersonal traumas are common, and have the strongest association with mental health (Green et al., 2000).

Other examples of interpersonal trauma are sexual assault and child abuse. In South Africa, the Department of Health (1999) found the lifetime national figure of rape for women was 7%, with some variation by province. However, rates are likely understated due to under-reporting of sexual coercion within marital, dating, and familial relationships (Jewkes & Abrahams, 2002). The extent of sexual assault in men is also unclear. Importantly, assault is related to negative outcomes in South African women (Dinan et al., 2004), outcomes similar to those of child abuse (Anda et al., 2006; Chapman et al., 2004).

Other traumas can also include life-threatening experiences, such as traffic accidents (Peltzer & Renner, 2003) and trauma of close others. In a U.S. study 62.4% reported others' traumas and 60% reported unexpected death of close friends/relatives (Breslau et al., 1998). Finally, research on the perpetration of atrocities and violence shows direct involvement in others' traumas as potentially traumatic and a risk for mental health problems (MacNair, 2002).

Thus, South Africans appear touched in many ways by violent, criminal, or otherwise potentially traumatic experiences. Yet, precise prevalence rates remain elusive. Studies are limited by non-nationally representative samples or by the restricted range of traumas assessed (Hirschowitz & Orkin, 1997; Jewkes & Abrahams, 2002; Jewkes et al., 2002). Examining a wide-range of events may capture a clearer picture of the trauma burden. Additionally, each trauma can have implications for mental health, and should be examined simultaneously.

Multiple Traumas

Given the range of potential traumas, individuals likely experience more than one type. U.S. studies have shown many experience multiple traumas (Resnick et al., 1993). For example, Kessler et al. (1995) differentiated between one, two, three, and four or more traumas, and found 34% of men and 25% of women to have two or more. Importantly, the experience of multiple traumas may have psychological implications. Green and colleagues (2000) compared trauma-related symptoms associated with multiple traumas, one trauma, and no trauma in U.S. college women. Results showed multiple events linked with more symptoms, especially for interpersonal events (e.g., physical/sexual assault), compared to non-

interpersonal (e.g., life-threatening accident). Other research has demonstrated cumulative trauma effects (e.g., Brewin, Andrews, & Valentine, 2000; Follette, Polusny, Bechtle, & Naugle, 1996; Miranda, Green, & Krupnick, 1997; Ozer, Best, Lipsey, & Weiss, 2003).

Although South Africa appears to be characterized by high rates of trauma, studies have only begun to examine multiple traumas. For instance, Dinan, McCall, and Gibson (2004) examined 10 traumas among women (e.g., assault/rape, serious accident/injury) and found two-thirds had experienced multiple traumas in the prior year. Moreover, rape and assault predicted psychological symptoms when all traumas were examined simultaneously. However, research on multiple traumas in South Africa is limited by non-representative samples and a restricted range of traumas.

The Present Study

Thus, we examine multiple traumas in South Africa. In this study, trauma is defined as lifetime exposure to a variety of events, including criminal victimization, political trauma, intimate partner abuse, among others, and is assessed with a screening portion of a structured clinical interview. We explore sociodemographic differences in risk of exposure, as exposure may differ by gender and other social-contextual factors (e.g., urban/rural; see Louw, 1997). Such differences are not unlike those found in U.S. literature reflecting the social patterning of stressful events (e.g., Turner & Avison, 2003). In South Africa, whereas men may experience more crime, women may be exposed to more intimate abuse, differences due at least in part, to gender inequities (Gilbert, 1996). Similarly, racial and income groups may be differentially exposed to trauma (e.g., Gilbert, 1996). Trauma exposure may be especially problematic in urban areas because of higher rates of crime and rapid urbanization in some parts of South Africa.

Secondarily, we explore individual and cumulative effects of potential traumas on distress. We chose global psychological distress as our outcome in order to capture mental health-related symptoms that can reflect personal and collective suffering in a society (Kleinman and Benson 2006). Global distress is seen as a valuable measure in the developing world (e.g., Kirmayer, 1991), and includes a heterogeneous set of cognitive, behavioral, and emotional symptoms. As opposed to assessment of clinically relevant disorders, which represent only the most severe cases, generalized distress encompasses a range (see Kessler et al., 2002, for review on distress measurement). However, higher scores on such dimensional scales of distress typically are linked to greater propensity toward disorders (Kessler et al., 2002; Link & Dohrenwend, 1980). As this paper represents an initial investigation into the burden of trauma in South Africa, we utilize the global indicator of distress but examine high scores using a cut-off score for clinical significance which has been used in previous studies in various countries (e.g., Wales, Australia).

We use data from the South Africa Stress and Health Study (SASH; Williams et al., 2004). Part of the World Health Organization's (WHO) World Mental Health initiative, the SASH study is the most comprehensive national study of mental health in South Africa and will allow us to define trauma exposure and the link between multiple traumas and distress.

Method

The South Africa Stress and Health (SASH) Study is a national probability survey of adult South Africans living in both households and hostel quarters (Williams et al. 2004). The sample does not include individuals living in institutions such as prisons, hospitals, and mental institutions as well as members of the military who were residents on military bases at the time of the survey. Individuals of all race and ethnic backgrounds were included in the study. The 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 (EAs). The second stage involved the sampling of housing units within clusters selected within each EA. The third stage involved the random selection of one adult respondent in each sampled housing unit.

The interviews, which lasted an average of three and a half hours, were conducted face-to-face in six different languages: English, Afrikaans, Zulu, Xhosa, Northern Sotho, and Tswana. Data were collected between January 2002 and June 2004. Field interviewers made up to three attempts to contact respondents. The overall response rate was 85.5%. The total sample of 4,351 adults was largely female (58.6%) and Black (79.7%), although other racial groups are represented (10.4% Coloured; 7.2% White; 2.7% Indian/Asian). Further, one-half was married, while most were unemployed (69.2%), had less than 12 years of education (62.7%), and lived in urban areas (59.7%).

Measures

Sociodemographics—We assessed eight socio-demographic variables: gender, race, age, marital status (unmarried versus married), income, work status (unemployed versus employed), education, and urbanicity (rural versus urban). Race consisted of the four standard categories in South Africa: Black; White; Indian/Asian; Coloured. The classification of Coloured in South Africa represents a heterogeneous racial group of mixed ancestry (see Khalfani & Zuberi, 2001 for review). Age consisted of four categories: 15–34; 35–49; 50–64; 65 or older. Categories of income (in Rands) include: 0–2,999; 3,000–5,999; 6,000–11,999; 12,000 or more. Education in years was combined into categories: none; 1–11; 12; 13+. In the case of socio-demographic variables with multiple categories, categories were dummy coded for analytic purposes (reference groups include White race, age 15–34, 12,000+ Rands, grade 13+).

Traumas—We assessed whether or not respondents were exposed to 28 potentially traumatic experiences during their lifetimes. Twenty-six of these events represent the screening scale for PTSD of the World Mental Health (WHO) Composite International Diagnostic Interview (WMH-CIDI; WHO, 1997), a structured interview designed for use by trained interviewers. Two additional questions about violence in intimate relationships were included; respondents indicated whether they or their current/former partner had perpetrated any of the violent acts on a list (i.e., pushed, grabbed, or shoved; threw something; slapped or hit) against each other. We refer to these items as intimate partner violence. The prevalence of these 28 events is shown in Table 1. We further classified individual events into ten categories to ease interpretation and allow for easier comparison of trauma prevalence with prior research. We based trauma classifications on how prior research discussed above has labeled traumas. The 10 categories are: criminal victimization; partner abuse; sexual victimization; childhood abuse; political trauma; disasters; threat to one's life (e.g., illness); trauma to close other; witnessing atrocities, and perpetration of traumas. Our measurement of politically-based trauma does not include torture in particular, but rather more general forms of political violence (e.g., combat, civilian in war). To verify that we would not lose information by collapsing into categories, we conducted a regression analysis using individual traumas to confirm that the individual events to be collapsed were related to the outcome of distress in a similar manner.

Multiple Traumas—Using the 28 traumatic events we calculated the total number of traumas individuals experienced. However, in order to report the prevalence of different numbers of multiple traumas, and the relative cumulative effect of numerous traumas, we classified individuals into multiple trauma categories, a method used in prior research. For example, using National Comorbidity Survey data, Kessler et al. (1995) differentiated one,

two, three, and four or more traumas. Similarly, we classified individuals into one of five possible categories (1, 2, 3, 4–5, and 6+). The total number of traumas experienced ranged from 0–17, but was positively skewed with low frequencies at the upper end of the distribution. Therefore, we truncated the final category to include the upper distribution. See Table 1 for the multiple trauma categories and their distributions. For the purpose of assessing sociodemographic correlates of exposure, the continuous variable of number of traumas was retained, but because of skew it also was truncated slightly (at 10+ traumas).

Psychological Distress—We assessed psychological symptomatology using the 10-item, 30-day non-specific distress (NSD) scale (K10; Kessler et al., 2002). This global distress scale, although brief, has demonstrated strong psychometric properties (see Kessler et al., 2002). Respondents were asked about how they felt in the past 30 days. Sample items include “nervous”, “hopeless”, and “depressed”. Respondents indicated how often they felt each of these ways using the following scale: (1) all, (2) most, (3) some, (4) a little, or (5) none. All items were reverse coded and summed; high scores represent high levels of distress ($\alpha = .88$; $M=15.89$, $SD=8.45$). For the present purposes, we created a separate variable representing “high distress” based on whether individuals reached a cut-off score of 16. Although not a direct assessment of disorder, this prior work has evidenced that a score of 16 or higher is indicative of at least a mild to moderate risk for mental disorder (Clinical Research Unit for Anxiety and Depression, n.d.). In the developing world, distress is recognized as an important indicator of psychological status in and of itself (Kirmayer, 1991). High distress may reflect a higher likelihood that distress impacts the functioning of South Africans. Thus, we examine traumas in relation to high distress, compared to low distress.

Analysis Plan

First, we explore the prevalence of individual traumatic events and multiple traumas. We use logistic regression to test sociodemographic predictors of each trauma category, and multiple regression to examine the sociodemographic correlates of total number of traumas. Second, we examine the relation between traumas, including multiple traumas, and high distress. We test the individual contribution of traumas by entering simultaneously into a logistic regression model all ten types of traumas. In addition, we test cumulative effects of trauma by examining the relation between multiple trauma categories and distress. In these latter regression analyses we control for race, gender, and employment, as they were significantly related to high distress in preliminary analysis. All analyses are weighted to adjust for complex sample design, and the population distribution for age, sex, and province in the 2001 South African Census.

Results

Prevalence and Sociodemographic Risk of Traumas and Multiple Traumas

Nearly 75% of the sample had experienced some traumatic event during their lifetimes. As shown in Table 1, the most prevalent type of event is the trauma of a close other, with approximately 43% of the sample reporting such an event. This high rate is mostly explained by the high occurrence of unexpected death of loved ones. Other types of traumatic events reported with relatively high frequencies include: witnessing trauma (27.9%), criminal victimization (25.1%), partner violence victimization (24.3%), having one’s life threatened (24.9%); and perpetration of trauma (18.0%). Other events were reported less frequently: child abuse (11.6%); political trauma (10.8%); disasters (9.2%). By far, the least reported event was sexual assault (3.5%).

We also examined sociodemographic risk of having experienced events. As depicted in Table 2, men were more likely to experience criminal victimization, political traumas, threats to their lives, and witnessing trauma. Women were more likely to report partner violence victimization, sexual assault, and trauma of close others. Additional differences were found for marital status; married individuals had higher rates of criminal victimization, partner violence, witnessing trauma, and perpetrating trauma. No clear patterns of risk emerged for other sociodemographic factors (e.g., race, age), with minimal differences for some (e.g., education). However, those in urban areas appear at greater risk of criminal victimization and witnessing others' traumas.

Analysis of the number of traumatic events showed that 19.2% had reported only one trauma, while 17.6% reported two, 12.9% reported 3, 15.9% reported four or five, and 9.2% reported 6 or more traumatic events. Thus, the majority (55.6%) of South Africans experienced more than one traumatic event. We further examined number of traumas by assessing sociodemographic correlates. As shown in Table 3, men, married individuals, Blacks, and persons with higher incomes had an elevated risk of multiple traumas.

Burden of Trauma and Multiple Traumas on Psychological Distress

Table 4 displays results of logistic regression analyses examining the risk of high distress for all trauma categories and multiple traumas. As depicted in Model 2, net of the contribution of other events, experiencing criminal victimization, partner violence, child abuse, disasters, threats to life, and trauma of close others were significantly related to high distress. Sexual assault was marginally related to distress ($p=.086$). Political traumas, witnessing, and perpetrating traumas did not contribute uniquely to the risk of high distress. As depicted in Model 3, each multiple trauma category was linked to increased risk of high distress compared with individuals reporting no traumas. However, risk increases relatively dramatically moving from two to three traumas, from three to four or five traumas, and from four or five to six or more traumas. Those in the highest category of multiple traumas are five times more likely to have high distress than individuals with no traumas. Thus, there appears to be a cumulative negative emotional effect of trauma among South Africans.

Discussion

Lifetime prevalence rates of traumatic events in South Africa have not been firmly established and prior studies of trauma within the South African context did not examine multiple traumas simultaneously. Using a nationally representative sample of South Africans, this study provides lifetime prevalence rates of traumas and multiple traumas, and establishes their association with global psychological distress, in an effort to begin to uncover the mental health burden of trauma.

Prevalence and Sociodemographic Risk of Traumas and Multiple Traumas

Nearly 75% of South Africans experienced at least one traumatic event during their lifetimes. The most frequent type of trauma reported involved a close other (unexpected death of a loved one), a finding not unlike past work in the U.S. (Breslau et al., 1998). Yet other traumas with relatively high frequencies include witnessing trauma, threat to one's own life, criminal victimization, and intimate partner abuse. For instance, the rate of partner abuse we report (24.3%) is as high as the rate of general criminal victimization reported, and supports the lifetime rate (24.6%) found in prior research (Jewkes et al., 2002). Violence and crime have been previously noted as the leading cause of concern among South Africans. With its high proportions of violence-related victimization the present study validates this concern. Further, findings highlight that once-held beliefs in a cessation of violence upon the

move to democracy from apartheid in South Africa has proven unfounded (Butchart & Peden, 1997).

Our findings reveal the majority of South Africans do not experience just one traumatic event. Rather, individuals in South Africa experience multiple traumas. This finding highlights that traumas usually do not occur in isolation and that future research examining the burden of trauma in South Africa should assess *multiple* forms of traumatic events.

Moreover, our results show that risk of traumas and multiple traumas varies by sociodemographic factors. For instance, women more frequently reported partner abuse and sexual assault, and traumatic events of close others, while men more frequently reported criminal and political victimization, threats to life, and witnessing traumas. Men are also more likely to experience more multiple traumas, as evidenced by their greater odds of reporting 6 or more traumas. Instructively, although the rate of sexual assault (3.5%) was unexpectedly low, the rate among women is higher (5.6%) than that of men and consistent with the previous estimate of 7% (Department of Health (1999)). One possible explanation for gendered patterns is that they reflect the societal status of females (Gilbert, 1996; Jewkes & Abrahams, 2002). Men are more entrenched in society and likely exposed to more contexts in which trauma can occur. Women have decidedly less power and are, therefore, at risk of being victimized in the home at greater frequency than outside the home.

Burden of Trauma and Multiple Traumas on Psychological Distress

Overall, the present study provides evidence of a link between South Africans' experience of trauma and global distress. Net of other experiences, criminal victimization, partner abuse, child abuse, threat to life, traumas of loved ones and disasters contribute independently to high distress. These findings are consistent with prior U.S. research showing a strong association of interpersonal trauma (e.g., partner abuse, sexual assault; Green et al., 2000) and other traumas such as child abuse (Anda et al., 2006; Chapman et al., 2004) with mental health. Our results further demonstrate a cumulative effect of trauma by the graded relation between multiple traumas and distress. Those with the most traumas (6 or more) are five times more likely to be highly distressed than those with no trauma. Together, high rates of trauma and multiple traumas appear to be taking a toll on South Africans' psychological health. Those classified as having high global distress may be at risk of clinically relevant disorders.

Importantly, we examined a range of events which are potentially traumatic but not necessarily traumatic. Further, we distinguished between relatively high and low levels of global distress using a threshold on a scale of nonspecific distress which has been used previously to reflect a moderate risk for disorder. A direct assessment of multiple traumas and psychiatric disorders (e.g., PTSD) is necessary to fully elucidate the total burden of trauma in South Africa. Such assessments and the potential policy implications will be the focus of our future work. As such, current results might be subsumed by future work on clinically relevant disorders. Still, rates of individual events and the extent of multiple events experienced highlight the need for future mental health research and policy work in South Africa.

Caveats and Conclusions

We found it surprising given the history of state-sponsored violence in South Africa, that political trauma is not uniquely predictive of distress. Noteworthy, most emotional injuries appear not to result from direct political motives, but rather from violence in interpersonal life (Butchart & Peden, 1997). Yet we did not include a detailed assessment of specific human rights violations, such as exposure to physical and psychological torture during

Apartheid, which could explain our findings. This limitation of the present study should be directly addressed in future research. Similarly, we also found that perpetration of traumas was not uniquely predictive of increased distress in contrast to work showing that perpetrating violence or atrocities toward others can be harmful psychologically (MacNair, 2002). Future research should include a wider range of perpetration events, while considering the sensitivity of assessing perpetration in South Africa, given the country's historical-political context.

Some other limitations are noted. First, rates of sexual abuse may be underestimated. Although the rate for women was comparable to previous reports, the rate for men was extremely low. It could be that men who experience assault may not label it as such or may be reluctant to report due to stigma attached. Second, because of the retrospective reporting of traumas over the course of a lifetime, biases linked to impaired memory recall likely affected our prevalence estimates. Our results should be interpreted with these potential limitations in mind. Nevertheless, this study provided a previously unavailable glimpse of exposure to a broad range of multiple traumas in a nationally representative adult sample of South Africa. We document high rates of trauma and that most of the population experiences multiple traumas. Moreover, exposure to these events appears to be important for mental health. This study thus contributes to literature on trauma in South Africa, and lays the foundation for future research, by ourselves and others, assessing the mental health burden of trauma in South Africa.

References

- Anda RF, Felitti VJ, Bremner JD, Walker JD, Whitfield C, Perry BD, Dube SR, Giles WH. The enduring effects of abuse and related adverse experiences in children. *European Archives of Clinical Neuroscience*. 2006; 256:174–186.
- Basile KC, Arias I, Desai S, Thompson MP. The differential association of intimate partner physical, sexual, psychological, and stalking violence and posttraumatic stress symptoms in a nationally representative sample of women. *Journal of Traumatic Stress*. 2004; 17:413–421. [PubMed: 15633920]
- Bradshaw D, Groenewald P, Laubscher R, Nannan N, Nojilana B, Norman R, Pieterse D, Schneider M, Bourne DE, Timaeus IM, Dorrington R, Johnson L. Initial burden of disease estimates for South Africa. *South African Medical Journal*. 2000; 93:682–688. [PubMed: 14635557]
- Breslau N, Kessler RC, Chilcoat HD, Schultz LR, Davis GC, Andreski P. Trauma and posttraumatic stress disorder in the community: The 1996 Detroit Area Survey of trauma. *Archives of General Psychiatry*. 1998; 55:626–632. [PubMed: 9672053]
- Brewin CR, Andrews B, Valentine JD. Meta-analysis of risk factors for Posttraumatic Stress Disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*. 2000; 68:748–766. [PubMed: 11068961]
- Butchart, A.; Peden, M. *South African Health Review*. Durban, South Africa: Health Systems Trust; 1997. Injury and trauma; p. 213-221.
- Butchart A, Peden M, Matzopoulos R, Phillips R, Burrows S, Bhagwandin N, Saayman G, Cooper A. The South African national non-natural mortality surveillance system—rationale, pilot results and evaluation. *South African Medical Journal*. 2001; 91:408–417. [PubMed: 11455806]
- Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF. Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*. 2004; 82:217–225. [PubMed: 15488250]
- Clinical Research Unit for Anxiety and Depression. [Accessed 9/18/2006] A WHO Collaborating Center. K10 Symptom Scale. n.d. [Online] Available at: <http://www.crufad.com/K10/k10info.htm>
- Dinan BA, McCall GJ, Gibson D. Community violence and PTSD in selected South African townships. *Journal of Interpersonal Violence*. 2004; 19:727–742. [PubMed: 15140321]

- Follette VM, Polusny M, Bechtle AE, Naugle AE. Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *Journal of Traumatic Stress*. 1996; 9:25–35. [PubMed: 8750449]
- Frieze, IH. *Hurting the one you love: Violence in relationships*. Pacific Grove, CA: Wadsworth; 2005.
- Frieze IH, Hymer S, Greenberg M. Describing the crime victim: Psychological reactions to victimization. *Professional Psychology: Research and Practice*. 1987; 18:299–315.
- Green BL, Goodman LA, Krupnick JL, Corcoran CB, Petty RM, Stockton P, Stern NM. Outcomes of single versus multiple trauma exposure in a screening sample. *Journal of Traumatic Stress*. 2000; 13:271–286. [PubMed: 10838675]
- Gilbert L. Urban violence and health – South Africa 1995. *Social Science and Medicine*. 1996; 43:873–886. [PubMed: 8870151]
- Hirschowitz R, Orkin M. Trauma and mental health in South Africa. *Social Indicators Research*. 1997; 41:169–182.
- Jewkes R, Abrahams N. The epidemiology of rape and sexual coercion in South Africa: An overview. *Social Science and Medicine*. 2002; 55:1231–1244. [PubMed: 12365533]
- Jewkes R, Levin J, Penn-Kekana L. Risk factors for domestic violence: Findings from a South African cross-sectional study. *Social Science and Medicine*. 2002; 55:1603–1617. [PubMed: 12297246]
- Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, Normand ST, Walters EE. Short screening scales to monitor population prevalences and trends in nonspecific psychological distress. *Psychological Medicine*. 2002; 32:959–976. [PubMed: 12214795]
- Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*. 1995; 52:1048–1060. [PubMed: 7492257]
- Kirmayer LJ. The place of culture in psychiatric nosology: Taijin kyofusho and DSM-III-R. *Journal of Nervous and Mental Disease*. 1991; 179:19–28. [PubMed: 1985144]
- Kleinman A, Benson P. Culture, moral experience and medicine. *Mount Sinai Journal of Medicine*. 73:834–839.
- Link, BG.; Dohrenwend, BP. Formulation of hypotheses about the true relevance of demoralization in the United States. In: Dohrenwend, BP.; Dohrenwend, BS.; Gould, MS.; Link, B.; Neugebauer, R.; Wunsch-Hitzig, R., editors. *Mental Illness in the United States: Epidemiological Estimates*. New York: Praeger; 1980. p. 114-132.
- Louw A. Surviving the transition: Trends and perceptions of crime in South Africa. *Social Indicators Research*. 1997; 41:137–168.
- MacNair RM. Perpetration-induced traumatic stress in combat veterans. *Peace and Conflict: Journal of Peace Psychology*. 2002; 8:63–72.
- Marais A, de Villiers PJ, Moller AT, Stein DJ. Domestic violence in patients visiting general practitioners – prevalence, phenomenology, and association with psychopathology. *South African Medical Journal*. 1999; 89:635–640. [PubMed: 10443213]
- Miranda, JM.; Green, BL.; Krupnick, J. Mental disorders in disadvantaged gynecology patients. Paper presented at the North American Meeting of the Society for Psychotherapy Research; Tucson, AZ. 1997 December.
- Nedcor Project on Crime. Final Report. The Nedcor Project; Johannesburg: 1996. Violence and Investment.
- Ozer EJ, Best SR, Lipsey TL, Weiss DS. Predictors of Posttraumatic Stress Disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*. 2003; 129:52–73. [PubMed: 12555794]
- Peltzer K, Renner W. Superstition, risk-taking and risk perception of accidents among South African taxi drivers. *Accident Analysis and Prevention*. 2003; 35:619–623. [PubMed: 12729825]
- Resnick HS, Kilpatrick DG, Dansky BS, Saunders BE, Best CL. Prevalence of civilian trauma and posttraumatic stress disorder in a representative national sample of women. *Journal of Consulting and Clinical Psychology*. 1993; 61:984–991. [PubMed: 8113499]
- Turner RJ, Avison WR. Status variations in stress exposure: Implications for the interpretation of research on race, socioeconomic status, and gender. *Journal of Health and Social Behavior*. 2003; 44:488–505. [PubMed: 15038145]

- Williams DR, Herman A, Kessler RC, Sonnega J, Seedat S, Stein DJ, Moomai H, Wilson CM. The South Africa stress and health study: Rationale and design. *Metabolic Brain Disease*. 2004; 19:135–47. [PubMed: 15214513]
- World Health Organization. Composite International Diagnostic Interview (CIDI, Core Version 2.1). Geneva, Switzerland: World Health Organization; 1997.

Table 1

Prevalence of traumatic events for total sample (N=4351).

Traumas	Total Sample	
	Percent	(se)
Crime Victim	25.1	(0.7)
Kidnapped	1.2	(0.2)
Beaten	11.4	(0.5)
Mugged	17.7	(0.6)
Crime Victim-Partner Violence	24.3	(0.7)
Partner abuse	9.1	(0.4)
Intimate partner violence	30.5	(1.0)
Stalking	4.9	(0.3)
Crime Victim – Sexual Assault	3.5	(0.3)
Rape	2.3	(0.2)
Other sexual assault	1.5	(0.2)
Crime Victim – Child Abuse	11.6	(0.5)
Political Trauma	10.8	(0.5)
Combat	2.5	(0.2)
Peacekeeper	1.8	(0.2)
Civilian in war	3.0	(0.3)
Civilian in terror	6.6	(0.4)
Refugee	1.8	(0.2)
Disaster	9.2	(0.4)
Natural disaster	4.1	(0.3)
Man-made disaster	3.0	(0.3)
Toxic chemical exposure	3.1	(0.3)
Threat to Life	24.9	(0.6)
Life-threatening car accident	12.2	(0.5)
Life-threatening accident	5.2	(0.4)
Life-threatening illness	12.7	(0.5)
Trauma of Close Other(s)	42.9	(0.8)
Unexpected death of loved one	38.2	(0.7)
Child w/life threatening injury or illness	8.4	(0.4)
Traumatic event of close other	5.8	(0.4)
Witness	27.9	(0.7)
Witness someone being injured or killed	26.9	(0.7)
Witness atrocities/carnage	3.8	(0.3)
Perpetrate	18.0	(0.6)
Perpetration of injury or killing – accidental	1.9	(0.2)
Perpetration of injury or killing - purposeful	.9	(0.1)
Intimate partner violence (perpetrate)	29.8	(1.0)
Multiple Traumas (# of traumas)		

<u>Traumas</u>	<u>Total Sample</u>	
	<u>Percent</u>	<u>(se)</u>
1 Trauma	19.2	(0.6)
2 Traumas	17.6	(0.6)
3 Traumas	12.9	(0.5)
4-5 Traumas	15.9	(0.6)
6+ Traumas	9.2	(0.4)

Table 2

Sociodemographic risk of exposure to trauma categories.

	Crime Victim		Partner Violence		Sexual Assault		Child Abuse		Political Trauma		Disaster		Threat to Life		Loved One		Witness		Perpetration	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Gender (Female)	.32***	.27-.37	2.14***	1.83-2.51	6.04***	3.65-9.99	.89	.73-1.08	.42***	.34-.52	.82	.66-1.02	.75	.65-.86	1.53***	1.34-1.74	.64***	.55-.73	1.04	.87-1.23
Race (ref=White)																				
Black	1.00	.75-1.34	1.76***	1.27-2.44	.42**	.24-.73	1.73*	1.09-2.73	.97	.67-1.40	1.12	.73-1.73	1.11	.83-1.47	1.30*	1.01-1.68	1.13	.86-1.49	1.36	.97-1.92
Coloured	.86	.60-1.22	1.71**	1.18-2.49	.52	.27-1.02	.86	.48-1.52	.54*	.33-.87	.94	.56-1.59	.53***	.37-.77	.86	.63-1.17	.65*	.46-.91	1.52*	1.02-2.26
Indian/Asian	1.29	.79-2.10	1.40	.82-2.39	.65	.26-1.64	.40	.13-1.18	.42*	.18-.96	1.22	.59-2.51	.83	.50-1.40	1.93**	1.24-2.99	.50*	.29-.86	1.66	.96-2.89
Married	1.22*	1.05-1.43	2.34***	2.00-2.74	1.16	.82-1.64	1.03	.84-1.26	1.19	.96-1.47	1.24	.99-1.55	1.11	.95-1.29	.97	.86-1.11	1.22**	1.05-1.41	3.58***	2.97-4.32
Age (ref=15-34)																				
35-49	1.02	.85-1.21	1.12	.94-1.33	.50***	.33-.76	.70**	.55-.89	1.26	.99-1.61	1.36*	1.05-1.75	1.37***	1.15-1.63	1.05	.90-1.22	.94	.79-1.10	1.25*	1.03-1.52
50-64	.76	.60-.95	1.03	.83-1.27	.65	.39-1.06	.66**	.48-.89	1.32	.99-1.77	1.25	.91-1.72	1.79***	1.46-2.20	1.55***	1.29-1.87	.84	.68-1.04	1.34*	1.07-1.70
65+	.46***	.30-.70	1.01	.71-1.43	.21*	.05-.83	.34***	.18-.65	.78	.45-1.35	1.80**	1.16-2.80	1.20	.86-1.68	1.50**	1.12-2.01	.64*	.45-.92	1.50*	1.04-2.18
Income (ref=12,000+)																				
R0-2999	1.15	.98-1.36	1.29**	1.10-1.52	1.15	.77-1.71	.98	.80-1.22	.73**	.58-.92	1.16	.91-1.47	.92	.78-1.08	1.08	.94-1.24	1.01	.87-1.18	1.20	.99-1.44
R3000-5999	1.72***	1.31-2.24	1.08	.82-1.44	1.61	.92-2.81	1.41*	1.00-1.99	1.54*	1.10-2.16	1.13	.75-1.70	.99	.75-1.31	1.07	.84-1.36	1.06	.81-1.38	1.32	.97-1.79
R6000-11999	1.14	.87-1.51	1.23	.93-1.62	1.21	.64-2.31	1.22	.86-1.74	1.35	.96-1.91	1.36	.93-1.98	1.01	.77-1.33	1.05	.82-1.33	.83	.63-1.09	1.22	.90-1.65
Education (ref=13+)																				
None	.83	.60-1.16	.68*	.48-.96	.37	.13-1.07	.93	.62-1.39	.74	.47-1.16	1.46	.95-2.25	.75	.54-1.03	.74*	.56-.98	.90	.66-1.23	.93	.64-1.35
Grade 1-11	.94	.76-1.16	.99	.80-1.22	1.05	.65-1.68	.80	.61-1.04	.84	.63-1.11	1.01	.74-1.38	.88	.71-1.07	.91	.76-1.08	1.03	.84-1.26	1.02	.80-1.30
Grade 12	.89	.70-1.13	.98	.77-1.25	1.08	.62-1.85	.97	.71-1.31	.97	.71-1.34	1.00	.70-1.42	.99	.78-1.24	.89	.72-1.09	1.02	.81-1.28	1.06	.81-1.40
Employed	1.02	.87-1.20	1.22*	1.03-1.45	1.33	.91-1.94	.94	.75-1.17	.82	.66-1.03	.95	.75-1.21	.79**	.66-.93	1.21**	1.05-1.39	1.11	.95-1.30	1.26*	1.05-1.52
Urbanicity (Urban)	1.37***	1.17-1.61	1.00	.85-1.16	1.24	.85-1.81	1.04	.85-1.27	1.24	1.00-1.53	1.12	.89-1.40	.87	.75-1.01	1.07	.94-1.22	1.28***	1.10-1.48	.88	.74-1.05

Note. Reference groups include male, White, not married, age 15-34, 12000+, Rands, 13+ education, unemployed, rural.

* p<.05

** p<.01

*** p<.001.

Table 3

Sociodemographic correlates of exposure to multiple traumas (number of traumas).

	B	(se)	β
Gender (Female)	-.26	.07	-.06***
Race (ref=White)			
Black	.32	.14	.06*
Coloured	-.19	.16	-.03
Indian/Asian	.02	.24	.00
Married	.55	.07	.12***
Age (ref=15-34)			
35-49	.16	.08	.03*
50-64	.28	.10	.04**
65+	.04	.16	.00
Income (ref=r12,000+)			
R0-2999	.12	.08	.03
R3000-5999	.36	.13	.04**
R6000-11999	.26	.13	.03*
Education (ref=13+)			
None	-.35	.15	-.04*
Grade 1-11	-.15	.10	-.03
Grade 12	-.10	.11	-.02
Employed	.09	.08	.02
Urbanicity (Urban)	.12	.07	.03

Note. Reference groups include male, White, not married, age 15-34, 12000+ Rands, 13+ education, unemployed, rural.

*
p<.05

**
p<.01

p<.001.

Table 4

Traumas and multiple traumas predicting high distress.

	OR	95% CI
Gender (Female)	1.37 ^{***}	1.20–1.56
Employed	.84 [*]	.73–.96
Race (ref=White)		
Black	3.03 ^{***}	2.27–4.05
Coloured	1.78 ^{***}	1.26–2.51
Indian/Asian	1.22	.73–2.04
	<i>Nagelkerke R² = .043</i>	
<u>Model 2</u>		
Crime Victim	1.36 ^{***}	1.16–1.60
Crime Victim-Partner Violence	1.39 ^{***}	1.17–1.66
Crime Victim – Sexual Assault	1.37 ⁺	.96–1.96
Crime Victim – Child Abuse	1.34 ^{**}	1.09–1.65
Political Trauma	1.08	.87–1.34
Disasters	1.81 ^{***}	1.44–2.28
Threat to Life	1.84 ^{***}	1.58–2.14
Trauma of Close Other(s)	1.34 ^{***}	1.17–1.54
Witness	1.02	.87–1.18
Perpetrate	1.11	.92–1.34
	<i>Nagelkerke R² = .127</i>	
<u>Model 3</u>		
1 Trauma	1.76 ^{***}	1.44–2.15
2 Traumas	1.70 ^{***}	1.39–2.09
3 Traumas	2.60 ^{***}	2.09–3.24
4–5 Traumas	3.29 ^{***}	2.67–4.04
6+ Traumas	5.15 ^{***}	4.01–6.62
	<i>Nagelkerke R² = .116</i>	

Note. In model 3, the no trauma group is the reference.

⁺ $p < .10$

^{*} $p < .05$

^{**} $p < .01$

^{***} $p < .001$