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ASSOCIATIONS BETWEEN TRAUMATIC EVENTS AND SUICIDAL BEHAVIOUR IN SOUTH AFRICA

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Abstract

Research conducted predominantly in the developed world suggests that there is an association between trauma exposure and suicidal behaviour. However, there are limited data available investigating whether specific traumas are uniquely predictive of suicidal behaviour, or the extent to which traumatic events predict the progression from suicide ideation to plans and attempts. A national survey was conducted with 4351 adult South Africans between 2002 and 2004 as part of the WHO World Mental Health Surveys. Data on trauma exposure and subsequent suicidal behaviour were collected. Bivariate and multivariate survival models tested the relationship between the type and number of traumatic events and lifetime suicidal behaviour. A range of traumatic events are associated with lifetime suicide ideation and attempt; however, after controlling for all traumatic events in a multivariate model, only sexual violence (OR=4.7, CI 2.3-9.4) and having witnessed violence (OR=1.8, 1.1-2.9) remained significant predictors of life-time suicide attempts. Disaggregation of the associations between traumatic events and suicide attempts indicates that they are largely due to traumatic events predicting suicide ideation rather than to the progression from suicide ideation to attempt. This paper highlights the importance of traumatic life events in the occurrence of suicidal thoughts and behaviours and provides important information about the nature of this association. Future research is needed to better understand how and why such experiences increase the risk of suicidal outcomes.

INTRODUCTION

Suicidal behaviour is among the leading causes of death and disease burden around the world (Desjarlais et al., 1995). The World Health Organization (WHO) estimates that in 2002 alone, approximately 877,000 deaths worldwide were due to suicide (WHO, 2003). Although there is an abundance of epidemiological research on the prevalence of suicide from the developed world (Kessler et al., 2005; Kessler et al., 1999), limited data exist from less developed countries. However, recently data from a nationally representative sample in

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South Africa revealed comparable estimated lifetime prevalence of suicide ideation (9.1 %,), plans (3.8%), and attempts (2.9%) to more developed countries (Joe et al., 2008).

Given that the etiology of suicide is not well-understood, there is a pressing need for research that elucidates risk factors for suicidal behaviour. Research conducted in both developed and developing countries reveals that psychiatric disorders are one of the most significant risk factors contributing to suicidal behaviour (Nock et al., 2008; Harris & Barraclough, 1997). For example, nationally representative data from South Africa found that 61% of South Africans who seriously considered killing themselves and 70% who actually made a suicide attempt have a prior psychiatric disorder (Khasakhala et al., in press). Although some research suggests that genetic factors may play an important role in suicidal behaviours (Roy et al., 2007), environmental factors appear to have an even stronger influence (Risch et al., 2009). One such environmental risk factor for suicidal behaviour may be exposure to psychological trauma.

Trauma is deeply rooted in South African society. Data from a nationally representative sample reveal that approximately 75% of South Africans experience some traumatic event during their lifetime. This includes, having someone close (e.g, family/friend) experience a trauma (43%), 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%). Less frequently reported were child abuse (11.6%), political trauma (10.8%), disasters (9.2%) and sexual assault (3.5%). Most alarming was the finding that the majority of South Africans have experienced more than one traumatic event in their lifetime (55.6%) (Williams et al., 2007).

Several studies conducted predominantly in the developed world have reported an increased risk of suicidal behaviour among people who have experienced traumatic events including war veterans (Hendin & Haas, 1991; Kramer et al., 1994), those present during a natural disaster (Lew & Wetli, 1996), victims of sexual and physical assault (Ullman, 2004; Ullman & Brecklin, 2002) and child abuse and neglect (Brodsky & Stanley, 2008; Dube et al., 2001). However, a majority of this research focuses on a limited number of traumatic events using specific populations such as patients, young school aged children, and adults interviewed retrospectively about childhood events (Borges et al., 2008).

Very few studies have investigated whether specific types of trauma are uniquely predictive of suicidal behaviour or the extent to which different traumatic events predict the progression from suicide ideation to plans and attempts (Borges et al., 2008). One recent exception is a study investigating the unique associations between a wide range of traumatic events and the subsequent occurrence of suicide ideation, plans, and attempts by pooling data from several countries (Stein et al., 2010). Stein and colleagues (2010) concluded that many different types of traumatic events were associated with the onset of suicide ideation; however, only sexual and interpersonal violence predicted whether suicide ideation progressed to suicide plan and attempt.

The purpose of the present study was to utilize the same data reported as part of a cross-national survey described previously (Stein et al. 2010), but with a much greater focus on

the association between traumatic life events and suicidal behavior in South Africa. The study investigated the unique associations between a wide range of traumatic events and the subsequent occurrence of suicide ideation, plans, and attempts. In addition, it aims to provide further insight into whether the relationship between traumatic events and suicide outcomes differed based on the numbers of traumatic events and types of suicidal behaviour in the South African context.

METHODS

The South African Stress and Health (SASH) study (Williams et al., 2004) was undertaken as part of the World Mental Health Survey (Demyttenaere et al., 2004) to investigate the prevalence of mental disorders in the South African context. The survey was conducted between January 2002 and June 2004. The rationale and survey methods have been detailed previously (Williams et al., 2004; Williams et al., 2008) and are briefly summarized here.

Ethical approval was provided by the University of Michigan, Harvard Medical School, and by a single project assurance of compliance from the Medical University of South Africa that was approved by the National Institute of Mental Health.

Sample Selection

The study population consisted of South Africans who resided in both households and hostels and were a minimum of 18 years old. The sample excluded those individuals living in institutions (including hospitals, prisons, mental health institutions and military bases). The sample was selected using a multi-stage area probability sample design. First, Enumerator Areas (EA; a unit of census administration) used in the 2001 national census were stratified according to province, location (rural/urban) and majority population group (African, coloured, white or Indian); 960 EAs were selected from the resulting strata, with the number of EAs selected per stratum proportional to the estimated stratum population (minimum, 1; maximum, 85). Second, within each EA a random sample of 5 households was selected and finally the third stage consisted of a random sub-selection of a single adult in each selected sample housing unit.

Up to three attempts were made to contact each respondent selected to participate. The overall response rate was 85% and the final sample consisted of 4351 individuals. The SASH interviewers received intensive training for one week in centralized group sessions. The face-to-face interviews lasted approximately three and a half hours, although a number of interviews required more than one visit to complete. The interviews were conducted in one of seven languages: English, Afrikaans, Zulu, Xhosa, Northern Sotho, Southern Sotho and Tswana.

Measures

Traumatic events—Traumatic events were assessed using the WMH version of the WHO Composite International Diagnostic Interview (CIDI) Version 3.0, a fully structured diagnostic interview administered by trained lay interviewers (Kessler & Ustun, 2004), which includes a screen for traumatic events as part of the module for the diagnosis of PTSD. The traumatic events assessed in this module include those from various categories,

including 1) natural and man-made disasters and accidents; 2) combat, war, and refugee experiences; 3) sexual and interpersonal violence; 4) witnessing or perpetrating violence; and 5) death or trauma to a loved one.

Suicidal behaviour—Suicidal behaviours were assessed using the Suicidal Behaviours Module of the WMH-CIDI (Kessler & Ustun, 2004). This module includes an assessment of the lifetime occurrence, age-of-onset, and age of most recent episode of suicide ideation ("Have you ever seriously thought about committing suicide?"), plans ("Have you ever made a plan for committing suicide"), and attempts ("Have you ever attempted suicide?"). We considered four dated lifetime history outcomes in a series of nested survival analyses (see below for analysis methods): (1) suicide attempt in the total sample, (1) suicide ideation in the total sample (3) suicide plan among ideators; (4) suicide attempt among ideators.

Analysis

We examined the associations among temporally prior traumatic events (i.e., time-varying covariates) and subsequent suicidal behaviours using discrete-time survival models with person-year as the unit of analysis. We estimated survival models that were bivariate (i.e., including only one traumatic event at a time) as well as multivariate (i.e., including all traumatic events simultaneously) in predicting each of the four suicide outcomes. Two types of multivariate models were tested: one including all types of traumatic events simultaneously (multivariate additive), and one including both the type and number of traumatic events experienced by each respondent as dummy variables (multivariate interactive). In order to examine the effects of traumatic events themselves, in each model we included as covariates factors shown in previous studies to predict suicide ideation, such as sociodemographic factors (e.g., age, sex, education; Nock et al., 2009), parental history of psychopathology (e.g., parental depression, panic, generalized anxiety and antisocial behaviour; Gureje et al., 2010); and childhood adversities (e.g., childhood physical and sexual abuse; Bruffaerts et al. BJP WMH paper). In all analyses, coefficients and standard errors were exponentiated for ease of interpretation and are reported as odds-ratios (ORs) with 95% confidence intervals (CIs). Standard errors were estimated with the Taylor series method (Wolter, 1985), using SUDAAN software (SUDAAN Professional, 2002) to adjust for weighting and clustering. Multivariate significance was evaluated with Wald χ^2 tests based on design-corrected coefficient variance–covariance matrices. In each analysis, associations between traumatic events and suicide outcomes were adjusted for the possible influence of sex, age, educational attainment, marriage, parental psychopathology, and childhood adversities. All significance tests were evaluated using .05-level two-sided tests.

RESULTS

Prevalence of Traumatic Events among those with Suicidal Behaviour

Traumatic events are common among South Africans with lifetime suicide ideation (23.3%) and attempts (30.2%). Among those respondents with a history of suicide attempts the most commonly reported trauma is the death of a loved one (20.5%), followed by witnessing violence (19.7%), and interpersonal violence (18.4%). Accidents (13.1%) and sexual violence (12.1%) also are frequently reported. Other traumas are less common, with

prevalence estimates under the 10% level. We found roughly comparable patterns for estimates of traumas in the other suicide-related behaviours (See Table 1).

Bivariate Associations of Traumatic Events with Lifetime Suicidal Behaviour

Tabulation of bivariate associations (Table 2) between traumatic events and suicide-related behaviours varied depending on the specific behaviour investigated. Suicide ideation was positively associated with interpersonal violence, sexual violence (OR=2.5, CI 1.6-4.0) and having witnessed violence, in addition to exposure to war (OR=3.7, CI 1.8-7.6), a natural disaster and being involved in an accident (OR=2.1, CI 1.4-3.2). On the other hand, only interpersonal violence (OR=2.0, CI 1.2-3.3), sexual violence (OR=5.2, CI 2.5-10.5) and having witnessed violence (OR=2.1, CI 1.3-3.3) significantly predicted a life-time suicide attempt. Among those with suicide ideation, traumas generally are not predictive of suicide plans or attempts.

Multivariate Associations of Traumatic Events with Lifetime Suicidal Behaviour

After controlling for the effects of the other traumatic events and various covariates, there are fewer significant associations between traumatic events and suicide attempt (Table 3). Nevertheless, sexual violence (OR=4.7, CI 2.3-9.4) and having witnessed violence (OR=1.8, 1.1-2.9) remained significant predictors of life-time suicide attempts. Disaggregation of the associations between traumatic events and suicide attempts indicates that they are largely due to traumatic events predicting suicide ideation rather than to the progression from suicide ideation to attempt. Five traumatic events remained significantly associated with suicide ideation. Additionally, among those with suicide ideation, being a refugee and experiencing sexual violence (OR=4.6, CI 1.7-12.6) is positively associated with life-time suicide attempts. There are no associations with traumatic events and unplanned attempts among ideators.

Effects of the number of traumatic events

There is a positive relationship between the number of traumatic events experienced and the odds of subsequent suicide ideation and suicide attempt (Table 4). Once again, these associations are largely due to traumatic events predicting suicide ideation, rather than with the progression from suicide ideation to suicide plan and attempt. For instance, the ORs for suicide ideation increase from 1.5 among those with one traumatic event (relative to those with zero events) to 6.0 among those with 5+ traumatic events. A similar pattern is seen for suicide attempts, where ORs increase from 2.2 among those with one event to 3.5 among those with 3+ events. However, there is no observable increase in the odds of suicide plans or attempts among those with suicide ideation.

DISCUSSION

This study had a number of important findings. First, we found particularly strong associations between sexual violence and having witnessed violence and subsequent suicidal behaviour. Secondly, although specific traumatic events were useful in predicting suicidal behaviours, they are more influential in predicting suicide ideation, rather than with the progression from suicide ideation to suicide plan and attempt.

To begin with, the association between suicide attempt and sexual violence and having witnessed violence are somewhat consistent with previous studies conducted in the developed world (Dube et al., 2001; Brodsky et al., 2001; Fergusson et al., 1996). However, unlike the larger World Mental Health Survey, there was no association between interpersonal violence and suicide attempt in the multivariate models. Research suggests that there may be several different pathways from the experience of traumatic events to the engagement in suicidal behaviours. For example, similar to other traumas, exposure to sexual violence and having witnessed violence is associated with psychiatric disorders such as depression and PTSD (Nock et al., 2009). However, perhaps a more probable explanation comes from considering the components of the stress-diathesis model for suicidal behaviour (Minzenberg et al., 2008), where stressors could include an acute psychiatric disorder and/or life events, and the diathesis includes components such as impulsivity (Nock et al., 2009; Brodsky & Stanley, 2008; Dube et al., 2001).

Particularly striking is how in the present study, only interpersonal violence, sexual violence and having witnessed violence significantly predicted a life-time suicide attempt in bivariate analysis (with sexual violence and having witnessed violence remaining significant in multivariate models) and not any of the other trauma's investigated. This finding contradicts the results of previous work where for the most part all types of traumatic events assessed were associated with increased odds of suicide attempt in bivariate but not multivariate models (Borges et al., 2008; Stein et al., 2010). For example, results from data collected from 21 countries included in the WHO World Mental Health Surveys found that the majority of traumatic events are significantly associated with lifetime suicide attempt, although the OR's were are highest for sexual and interpersonal violence (Stein et al., 2010).

Secondly, the association between traumatic events and suicide attempt appears to be largely due to traumatic events predicting suicide ideation rather than to the progression from suicide ideation to attempt. However experiencing sexual violence and being a refugee was positively associated with life-time suicide attempts. Many refugees, most of whom fled war-torn or unstable countries (like Somalia, the Democratic Republic of Congo, Rwanda, and Zimbabwe) to find refuge in South Africa, may face further trauma through xenophobic attacks in South African communities. Therefore, refugee status and experiencing sexual violence may be associated more impulsive psychopathology (Minzenberg et al., 2008).

Several limitations of this study must be considered when interpreting these findings. Firstly, the prevalence of traumatic events is probably underestimated since those who have no permanent residence or live in government institutions may have higher rates of exposure to traumatic events. Secondly, these data are based on self-report and are therefore subject to the limitations of self-report bias. Finally, not all potential traumas are listed in detail in the PTSD module; the “other trauma” category may include important traumas. Similarly, the severity and duration of individual traumas are not assessed. Despite these limitations, the results of the present study expand on the data from community and clinical studies by providing further insight into the relationship between traumatic events and suicidal behaviour than has previously been possible.

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Table 1

Prevalence of traumatic events among those with suicidal behaviour

	Among total sample		Among total sample		Among Ideators		Among Ideators	
	%[1] (SE) with trauma among		%[1] (SE) with trauma among		%[1] (SE) with trauma among		%[1] (SE) with trauma among	
	Attempt	No attempt	Ideation	No ideation	Plan	No plan	Attempt	No attempt
Combat	0.3 (0.3)	1.5 (0.3)	4.4 (1.5)	1.4 (0.2)	3.9 (1.9)	8.6 (3.7)	0.3 (0.3)	8.0 (3.4)
Exposure to War	5.2 (2.4)	4.8 (0.3)	6.8 (1.2)	4.8 (0.4)	8.8 (1.7)	11.1 (3.2)	5.2 (2.4)	12.6 (4.0)
Refugee	1.8 (1.2)	0.7 (0.1)	1.7 (1.0)	0.6 (0.1)	1.3 (0.9)	1.9 (1.4)	1.8 (1.2)	1.6 (1.2)
All Man Made Disasters	7.3 (3.2)	2.6 (0.3)	6.0 (2.0)	2.6 (0.3)	7.2 (3.0)	12.8 (4.4)	7.3 (3.2)	11.0 (4.3)
Accident	13.1 (3.5)	6.4 (0.4)	14.3 (2.2)	6.4 (0.4)	15.7 (3.9)	22.7 (3.8)	13.1 (3.5)	25.0 (4.5)
Natural Disaster	2.1 (0.9)	1.7 (0.3)	2.5 (1.0)	1.8 (0.3)	1.8 (0.7)	4.6 (1.6)	2.1 (0.9)	4.6 (1.7)
Interpersonal Violence	18.4 (3.8)	9.7 (0.5)	19.1 (2.9)	10.1 (0.5)	22.2 (4.8)	16.0 (2.6)	18.4 (3.8)	17.9 (2.8)
Sexual Violence	12.1 (3.1)	1.5 (0.3)	5.2 (1.1)	1.5 (0.3)	7.5 (2.0)	6.8 (2.0)	12.1 (3.1)	3.4 (1.1)
Death of Loved One	20.5 (3.9)	12.1 (0.7)	21.8 (3.1)	12.6 (0.7)	25.8 (4.0)	31.4 (4.7)	20.5 (3.9)	28.7 (4.9)
Trauma to Loved one	6.8 (2.8)	3.5 (0.3)	5.2 (1.1)	3.9 (0.3)	9.6 (3.3)	9.5 (1.8)	6.8 (2.8)	9.2 (1.9)
Witness Violence	19.7 (3.2)	9.3 (0.5)	20.4 (2.5)	9.5 (0.5)	19.1 (3.5)	26.4 (3.6)	19.7 (3.2)	29.7 (2.8)
Perpetrator Violence	0.6 (0.6)	0.9 (0.1)	2.5 (1.1)	0.8 (0.1)	1.0 (1.0)	3.7 (2.4)	0.6 (0.6)	4.6 (2.7)
All Other	4.4 (1.8)	2.1 (0.3)	5.2 (1.2)	2.0 (0.3)	6.8 (2.9)	7.4 (2.0)	4.4 (1.8)	8.3 (2.2)
1 event	30.2 (4.8)	18.3 (0.5)	23.3 (2.4)	18.6 (0.5)	25.6 (4.2)	24.3 (2.5)	30.2 (4.8)	25.9 (3.6)
2 events	14.3 (3.4)	8.1 (0.5)	14.4 (1.7)	8.5 (0.5)	15.9 (3.9)	18.5 (2.5)	14.3 (3.4)	16.4 (2.3)
3 events	14.4 (3.8)	6.0 (0.4)	8.5 (1.5)	3.6 (0.3)	17.5 (4.1)	26.3 (3.9)	14.4 (3.8)	25.6 (4.7)
4 events			3.2 (1.0)	1.5 (0.2)				
5+ events			4.6 (1.0)	1.0 (0.1)				
	(140)	(107309)	(394)	(112243)	(171)	(1976)	(140)	(2212)

[1]% represents the percentage of people with the chronic condition among the cases with the outcome variable indicated in the column header. For example: the first cell is the % of those with combat experience among those with attempts.

J Nerv Ment Dis. Author manuscript; available in PMC 2014 August 29.

Table 2

Bivariate model for associations between traumatic events and lifetime (LT) suicidal behaviour[1]

	LT Attempts in total sample[2]		Ideators among total sample[3]		Among Ideators, LT Plans[4]		Among Ideators, LT Attempts[5]	
	OR(95% CI)	**Chisquare**	**OR(95% CI)**	**Chisquare**	**OR(95% CI)**	**Chisquare**	**OR(95% CI)**	**Chisquare**
Combat	0.3 (0.0-2.7)	1.1(0.30)	3.7* (1.8-7.6)*	13.7(<.001)*	1.4 (0.3-6.1)	0.3(0.61)	0.8 (0.2-3.5)	0.1(0.78)
Exposure to War	1.1 (0.4-3.0)	0.0(0.93)	1.3 (0.8-1.9)	1.2(0.28)	1.2 (0.6-2.6)	0.2(0.62)	0.6 (0.2-1.7)	1.0(0.31)
Refugee	2.2 (0.5-10.0)	1.1(0.29)	2.2 (0.6-7.4)	1.6(0.21)	1.0 (0.1-10.7)	0.0(0.99)	3.7 (0.5-29.5)	1.6(0.20)
All Man Made Disasters	2.3 (0.8-6.3)	2.6(0.11)	1.9* (1.0-3.6)*	4.4(0.036)*	0.8 (0.3-2.3)	0.2(0.68)	1.5 (0.5-4.5)	0.5(0.48)
Accident	1.9 (0.9-3.7)	3.3(0.07)	2.1* (1.4-3.2)*	13.0(<.001)*	0.7 (0.3-1.7)	0.6(0.42)	1.0 (0.4-2.7)	0.0(0.96)
Natural Disaster	0.9 (0.4-2.2)	0.0(0.84)	1.1 (0.5-2.4)	0.0(0.88)	0.4 (0.1-1.5)	2.1(0.14)	0.6 (0.2-2.2)	0.5(0.47)
Interpersonal Violence	2.0* (1.2-3.3)*	7.6(0.006)*	2.0* (1.3-2.9)*	12.4(<.001)*	1.7 (0.8-4.0)	1.7(0.19)	1.2 (0.6-2.3)	0.2(0.63)
Sexual Violence	5.2* (2.5-10.5)*	21.2(<.001)*	2.5* (1.6-4.0)*	16.3(<.001)*	1.1 (0.4-3.1)	0.0(0.88)	2.9* (1.2-6.9)*	6.3(0.012)*
Death of Loved One	1.3 (0.8-2.1)	0.9(0.35)	1.4 (1.0-2.1)	3.6(0.06)	1.3 (0.6-2.6)	0.5(0.47)	0.9 (0.6-1.5)	0.1(0.79)
Trauma to Loved one	1.3 (0.5-3.5)	0.3(0.55)	1.1 (0.7-1.8)	0.1(0.71)	1.1 (0.4-3.0)	0.1(0.80)	1.1 (0.3-4.1)	0.0(0.86)
Witness Violence	2.1* (1.3-3.3)*	9.9(0.002)*	2.1* (1.5-2.8)*	22.9(<.001)*	1.2 (0.6-2.5)	0.2(0.64)	1.0 (0.5-2.0)	0.0(0.90)
Perpetrater Violence	0.5 (0.1-4.0)	0.4(0.52)	2.2 (0.9-5.3)	3.5(0.06)	0.4 (0.0-8.1)	0.3(0.57)	0.3 (0.0-3.6)	0.9(0.34)
All Other	1.4 (0.6-3.5)	0.7(0.40)	1.8* (1.1-3.2)*	4.8(0.029)*	1.1 (0.3-3.9)	0.0(0.84)	0.5 (0.2-1.6)	1.5(0.22)

*Significant at the .05 level, two-sided test

[1]Assessed in Part 2 sample due to having part 2 controls. Each row represents a separate bivariate model; controls for the model include person-years as well as sociodemographic (age, sex, education), parent psychopathology (parental depression, panic, etc.), and child adversity (child abuse, neglect, etc) factors.

[2]Assessed in Part 2 sample due to having part 2 controls. Each row represents a separate bivariate model; controls for the model include person-years, and also include significant variables from demographic, parent psychopathology models, and child adversity models details in following footnotes.

[3]Models controls for person-years, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, and education. For parent psychopathology, controlling for number of parental disorders (dummies for 1, 2+ disorders). For child adversity, controlling for number of adversities (dummies for 1,2+ adversities

[4]Models controls for person-years, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age and education. For parent psychopathology, controlling for types of parental disorders (6 dummies). For child adversity, controlling for types of adversity (8 dummies, 1 for each adversity).

[5]Models controls for person-years), demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. Parent psychopathology not controlled for due to insignificance in previous models. For child adversity, controlling for number of adversities (dummies for 1,2+ adversities).

Table 3

Multivariate model for associations between traumatic events and lifetime (LT) suicidal behaviour *

	LT Attempts in total sample[2]		Ideators among total sample[3]		Among Ideators, LT Plans[4]		Among Ideators, LT Attempts[5]	
	OR(95% CI)	Chisquare	OR(95% CI)	Chisquare	OR(95% CI)	Chisquare	OR(95% CI)	Chisquare
Combat	0.3 (0.0-2.0)	1.7(0.19)	2.8* (1.3-5.9)*	7.5(0.006)*	1.8 (0.6-5.8)	1.0(0.31)	0.7 (0.1-4.7)	0.1(0.70)
Exposure to War	0.8 (0.3-2.4)	0.1(0.74)	0.8 (0.5-1.4)	0.5(0.48)	1.2 (0.5-2.6)	0.2(0.69)	0.6 (0.2-1.5)	1.3(0.25)
Refugee	2.1 (0.4-11.2)	0.7(0.40)	1.5 (0.4-5.3)	0.4(0.54)	0.7 (0.1-8.6)	0.1(0.78)	7.5 (1.0-57.9)*	3.9(0.049)*
All Man Made Disasters	1.8 (0.6-5.0)	1.3(0.26)	1.5 (0.8-3.0)	1.5(0.22)	0.7 (0.2-2.0)	0.5(0.48)	1.4 (0.4-4.6)	0.3(0.56)
Accident	1.6 (0.8-3.2)	1.6(0.20)	1.7* (1.1-2.7)*	5.6(0.018)*	0.7 (0.3-1.8)	0.5(0.46)	1.1 (0.4-2.8)	0.0(0.89)
Natural Disaster	0.7 (0.3-1.7)	0.7(0.40)	0.7 (0.3-1.7)	0.5(0.46)	0.4 (0.1-1.3)	2.4(0.12)	0.6 (0.1-2.8)	0.4(0.54)
Interpersonal Violence	1.6 (0.9-2.7)	3.1(0.08)	1.6* (1.1-2.4)*	5.3(0.021)*	1.7 (0.7-3.9)	1.6(0.21)	1.4 (0.7-2.8)	0.7(0.40)
Sexual Violence	4.7* (2.3-9.4)*	19.3(<.001)*	2.2* (1.4-3.5)*	13.1(<.001)*	1.1 (0.4-3.3)	0.0(0.85)	4.6* (1.7-12.6)*	9.4(0.002)*
Death of Loved One	1.0 (0.6-1.7)	0.0(0.86)	1.1 (0.8-1.7)	0.6(0.45)	1.2 (0.6-2.5)	0.3(0.59)	0.9 (0.5-1.5)	0.2(0.67)
Trauma to Loved one	1.0 (0.4-2.7)	0.0(1.00)	0.8 (0.4-1.4)	0.8(0.37)	1.1 (0.4-3.1)	0.0(0.90)	1.2 (0.3-4.2)	0.0(0.83)
Witness Violence	1.8* (1.1-2.9)*	6.5(0.011)*	1.6* (1.2-2.3)*	8.1(0.004)*	1.2 (0.6-2.4)	0.2(0.66)	1.1 (0.5-2.3)	0.0(0.84)
Perpetrater Violence	0.4 (0.0-3.0)	0.9(0.34)	1.5 (0.6-3.6)	0.9(0.35)	0.3 (0.0-7.5)	0.5(0.48)	0.5 (0.1-4.5)	0.4(0.54)
All Other	0.9 (0.4-2.2)	0.0(0.87)	1.4 (0.8-2.4)	1.6(0.20)	1.0 (0.3-3.1)	0.0(0.97)	0.2* (0.1-0.9)*	4.4(0.035)*

*Significant at the .05 level, two-sided test

[1]Assessed in Part 2 sample due to having part 2 controls. Controls for the model include int (1-5 intervals), and also include significant variables from demographic, parent psychopathology models, and child adversity models details in following footnotes

[2]Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education.. For parent psychopathology, controlling for number of parental disorders (dummies for 1, 2+ disorders). For child adversity, controlling for number of adversities (dummies for 1,2+ adversities)

[3]Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. For parent psychopathology, controlling for number of parental disorders (dummies for 1, 2+ disorders). For child adversity, controlling for number of adversities (dummies for 1,2+ adversities).

[4]Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. For parent psychopathology, controlling for types of parental disorders (6 dummies). For child adversity, controlling for types of adversity (8 dummies, 1 for each adversity).

[5]Models controls for person-years countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. Parent psychopathology not controlled for due to insignificance in previous models. For child adversity, controlling for number of adversities (dummies for 1,2+ adversities).

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Table 4

Associations between number of traumatic events and Lifetime (LT) suicidal behaviour[1]

	LT Attempts in total sample[2]		Ideators among total sample[3]		Among Ideators, LT Plans[4]		Among Ideators, LT Attempts[5]	
Number of traumatic events	**OR(95% CI)**	**Chisquare**	**OR(95% CI)**	**Chisquare**	**OR(95% CI)**	**Chisquare**	**OR(95% CI)**	**Chisquare**
1	2.2* (1.2-3.8)*		1.5* (1.1-2.0)*		1.0 (0.5-2.0)		1.0 (0.6-1.8)	
2	2.2* (1.1-4.6)*		2.1* (1.5-3.0)*		0.8 (0.3-2.1)		1.3 (0.6-2.7)	
3	3.5* (1.5-7.7)*	11.6(0.009)*	2.9* (1.8-4.8)*		1.0 (0.4-2.5)	0.5(0.92)	1.1 (0.4-2.6)	0.4(0.94)
4			2.8* (1.5-5.3)*					
5+			6.0* (3.5-10.1)*	50.1(<.001)*				

[1] Assessed in Part 2 sample due to having part 2 controls. Controls for the model include int (1-5 intervals), and also include significant variables from demographic, parent psychopathology models, and child adversity models details in following footnotes.

[2] Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. For parent psychopathology, controlling for number of parental disorders (dummies for 1, 2+ disorders). For child adversity, controlling for number of adversities (dummies for 1,2+ adversities).

[3] Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. For parent psychopathology, controlling for number of parental disorders (dummies for 1, 2+ disorders). For child adversity, controlling for number of adversities (dummies for 1,2+ adversities).

[4] Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. For parent psychopathology, controlling for types of parental disorders (6 dummies). For child adversity, controlling for types of adversity (8 dummies, 1 for each adversity).

[5] Models controls for person-years, countries, demographics (sex, age, time-varying education), interaction between life course intervals (ages 4-12, 13-19, 20-29, 30+ years), age, education. Parent psychopathology not controlled for due to insignificance in previous models. For child adversity, controlling for number of adversities (dummies for 1,2+ adversities).