

R0614

Journal of Interpersonal Violence

<http://jiv.sagepub.com/>

Victimization, Posttraumatic Stress Disorder Symptomatology, and Later Nonsuicidal Self-Harm in a Birth Cohort

Shyamala Nada-Raja and Keren Skegg

J Interpers Violence 2011 26: 3667 originally published online 20 May 2011

DOI: 10.1177/0886260511403757

The online version of this article can be found at:
<http://jiv.sagepub.com/content/26/18/3667>

Published by:



<http://www.sagepublications.com>

On behalf of:

American Professional Society on the Abuse of Children

Additional services and information for *Journal of Interpersonal Violence* can be found at:

Email Alerts: <http://jiv.sagepub.com/cgi/alerts>

Subscriptions: <http://jiv.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

Citations: <http://jiv.sagepub.com/content/26/18/3667.refs.html>

>> Version of Record - Dec 13, 2011

OnlineFirst Version of Record - May 20, 2011

What is This?

Downloaded from jiv.sagepub.com at University of Otago Library on July 4, 2012

and PTSD in early adulthood, whereas for men only internalizing disorders predicted future NSSH.

Keywords

self-injurious behavior; posttraumatic stress disorder; child sexual abuse; attempted suicide, crime victims

Victimization and suicidality are often related to each other and are strongly associated with mental disorder (Belik, Cox, Stein, Asmundson, & Sareen, 2007; Klonsky & Moyer, 2008; Seedat, Stein, & Forde, 2005; Ullman, 2004). Recent reviews on childhood sexual abuse (CSA, a major type of victimization) in relation to self-harm that includes both attempted suicide and nonsuicidal self-injury (NSSI) or nonsuicidal self-harm (NSSH) have emphasized that any observed associations are likely to be largely indirect and to include common psychosocial risk factors (Klonsky & Moyer, 2008; Ullman, 2004).

There are also associations between sexual assault and revictimization in adult women and attempted suicide or NSSH (Gladstone et al., 2004; Noll, Horowitz, Bonanno, Trickett, & Putnam, 2003; Ullman, 2004; Ullman & Najdowski, 2009) and between physical assault or intimate partner violence and suicidality (Seedat et al., 2005; Simon, Anderson, Thompson, Crosby, & Sacks, 2002). The above studies of NSSI or NSSH in relation to prior victimization have generally been based on college rather than community samples. However, community-based samples of longitudinal studies have not always found a positive and direct association between CSA and later suicidality (e.g., Fergusson, Woodward, & Horwood, 2000), thus highlighting a need for longitudinal community studies to clarify the relationships that might exist between a range of psychosocial factors that predict suicidality following CSA (Ullman et al., 2009).

Depression and revictimization are important factors in the pathways that have been suggested as connecting victimization and suicidality (Gladstone et al., 2004). Posttraumatic stress disorder (PTSD) is another important mediator that might link violence and self-harm (Kessler, 2000; Weierich & Nock, 2008). Current evidence is inconclusive as to whether PTSD predicts self-harm independently of other anxiety disorders and depression (Krysinska & Lester, 2010). Studies in this area therefore need to adjust for the role of internalizing disorders. (Breslau, Peterson, Poisson, Schultz, & Lucia, 2004).

Women are more likely than men to report CSA and to experience depression and anxiety (Nelson et al., 2002). In a study of depressed women,

participants gave written informed consent to take part in an interview on self-harm. More than 90% of the cohort self-identified as New Zealand European. The entire socioeconomic spectrum is covered adequately. The Otago Ethics Committee approved the study. Complete data were available for 449 women and 467 men for all measures described below.

Measures

Nonsuicidal Self-Harm (NSSH). Participants were asked about a range of self-harm behaviors they had experienced in the past year at age 26 and about suicidal intent (Nada-Raja, Skegg, Langley, Morrison, & Sowerby, 2004). If no suicidal intent was reported for any of the behaviors the study member had engaged in (81 men and 54 women), they were classified in the NSSH category. Questions were framed in the context of dealing with mental or psychological pain, emotions, or stress rather than using the term "suicide" initially. Participants viewed a list of 16 specific self-harm behaviors and reported on any "other" similar behaviors, followed by questions on the number of episodes that involved suicidal intent for each method used in the past year (Nada-Raja et al., 2004). The behaviors comprised all methods specified in the International Classification of Diseases (ICD-9) E-codes 950-958 for suicide and purposely self-inflicted injury. In addition, other self-harmful behaviors were enquired about deliberately hitting oneself or putting one's fist through a wall (i.e., self-hitting), denying oneself a necessity such as food to punish oneself, exercising excessively to deliberately hurt oneself, self-biting, or other bodily harmful behaviors (Nada-Raja et al., 2004). Most NSSH behaviors involved self-hitting, overdosing, or self-cutting.

Potential Predictors

Assault victimization at age 21 years. A total of 944 participants answered questions about any form of assault they had experienced in the previous year (Martin et al., 1998). Assault victimization was defined as the report of physical or sexual victimization by another person, involving anyone from a partner to a complete stranger, including attempted or threatened assault experienced in the past year (238 men and 144 women). Over half (55%) of physical assault incidents reported by women were perpetrated by a partner, in contrast to 12% of physical assault incidents against men being perpetrated by a partner (Langley, Martin, & Nada-Raja, 1997). Of those who had experienced physical assault, 12% of the men and 7% of the women had received some medical treatment, including being hospitalized.

examine potential predictors as described above for self-harm as per odds ratios (OR) and 95% confidence intervals (CI). Population attributable risk percentages (PAR) were calculated for each of the significant predictors identified in the final multivariate models to determine the proportion of self-harm that could be prevented if any one of the identified predictors were totally eliminated (Miettinen, 1974).

Results

Assault victimization at age 21 and later NSSH. For men, there was no significant association between assault victimization at age 21 and NSSH at age 26. Women who reported that they had been assaulted at age 21 were, however, significantly more likely than other women to report NSSH at age 26 ($\chi^2 = 10.3$, $p = .0013$). Of the 144 women who reported assault victimization at age 21, 19% reported past-year NSSH at age 26 compared with 8% of the 295 women who did not report assault victimization. We examined three specific characteristics of assault in relation to later NSSH for women and men separately. Women who reported a sexual assault (23% vs. 10%, $\chi^2 = 10.3$, $p = .0024$), whose assailant was a partner (22% vs. 10%, $\chi^2 = 6.3$, $p = .0122$), or had received medical treatment for their assault (23% vs. 11%, $\chi^2 = 4.3$, $p = .0390$) were significantly more likely than women who did not report these characteristics to also report later NSSH. The results were not significant for men.

PTSD symptomatology following assault victimization. Two dummy variables, one for victimization and PTSD symptomatology (hereafter referred to as PTSD) and the other for victimization without PTSD were created and included in logistic regression analyses to determine whether PTSD uniquely contributed to the associations described above. The reference group was no victimization. Odds ratios (OR) and 95% confidence intervals (CI) are summarized for each of the explanatory variables in Table 1, for 916 participants with complete data on all measures of interest. As shown in Table 1, there were no significant associations for men between victimization and PTSD at age 21 and NSSH at age 26. Women who were victimized at age 21, however, irrespective of experiencing PTSD, were at significantly higher risk of NSSH at age 26 than nonvictimized women.

Role of mental disorders. Table 2 summarizes relations between victimization with or without PTSD and mental disorders at age 21. Victimization and PTSD were significantly associated with other anxiety disorders and with depressive disorders. A significantly higher number of victims with PTSD

Table 2. Associations Between Broad Categories of DSM-IV Mental Disorder and Assault Victimization With and Without Associated PTSD Symptomatology at Age 21 Years for 467 Men and 449 Women

		No Assault Victimization		Assault Victimization but No PTSD		Assault Victimization and PTSD		Chi-Square With 2 Degrees of Freedom	p value
		n	%	n	%	n	%		
Any anxiety disorder	Men	26	11	24	12	10	43	20.3	<.0001
	Women	74	24	25	27	25	56	19.9	<.0001
Any depressive disorder	Men	23	10	20	10	10	43	24.8	<.0001
	Women	61	20	24	26	25	56	27.6	<.0001
Any substance dependence disorder	Men	33	14	60	29	14	61	34.3	<.0001
	Women	13	4	13	14	12	27	30.3	<.0001

Population attributable risk (PAR). PARs were calculated to gauge the contributions of each of the independent and significant risk factors for later NSSH. They indicated that the risk of NSSH would be reduced by 13% amongst men and 27% amongst women, if anxiety disorders (excluding PTSD symptomatology) were eliminated. If depressive disorders were to be eliminated, it would be expected that NSSH would be reduced by 12% amongst men. For women, reducing their exposure to victimization would be expected to reduce their risk of NSSH by 10% to 14% depending on whether PTSD was related to the victimization experience.

Discussion

The observed associations between assault victimization, PTSD symptomatology, internalizing disorders, and NSSH 5 years later were different for men and women. For men, assault victimization and PTSD symptomatology did not predict later NSSH: instead it was predicted by anxiety and depression at age 21. Among women, however, all of the listed factors at age 21 were independent or confounding predictors of NSSH at age 26. Experiencing PTSD symptomatology as a result of being victimized elevated the risk of NSSH at age 26, which was even higher in the presence of comorbid mental disorder at age 21. Retrospective recall of CSA at age 26 was not an independent predictor of later NSSH for either sex. It did, however, increase the risk of victimization for both sexes, and of anxiety disorders for men only.

Clearly, women who are assaulted, irrespective of any related PTSD symptomatology or other internalizing disorders, are at significant risk for NSSH. The nature of women's victimization experiences per se may partly account for this finding. In this sample, female victims of assault were much more likely than males to report that the perpetrator was their partner or a person with whom they had a similar relationship (Langley et al., 1997). Such assault was also more injurious to women than to men. Women were also more likely than men to report a sexual assault. In the present study, these three characteristics of the assault were significantly associated with the report of later NSSH by women but not by men. Martinez and Richters (1993) found that children victimized by family, friends, or acquaintances scored high on a scale of depression symptoms relative to children who were victimized by or had witnessed violence by strangers. Thus the mental health consequences of victimization might be greater for women than for men. Although the duration of PTSD symptoms was not ascertained in this study, we found that PTSD symptomatology elevated women's risk for later NSSH. These findings support Kessler's (2000) view that PTSD might not be a short-lived

and NSSH (methods unspecified) were more common among women who had reported CSA (Gladstone et al., 2004). There is a need for more studies with men that address these types of associations.

The present findings highlight that CSA has long-term psychological health consequences for young adults by increasing their vulnerability to repeat assault victimization and anxiety and depressive disorders, which were often comorbid. Anxiety disorders in turn were a major risk factor for NSSH, indicated by significant PAR values, especially for women. Overall it may well be that CSA contributes to self-harm, irrespective of suicidal intent, by increasing a person's vulnerability to mental health problems including PTSD and interpersonal difficulties (Ullman, 2004).

There were some limitations to this study. The principal assault event that participants selected to describe before they reported on any PTSD symptoms was an event experienced in the previous year and subject to recall and reporting bias. PTSD symptoms recounted may not have necessarily referred solely to the principal event that was described and their duration was not determined due to time constraints. The information that we enquired about focused on the previous year, however, when recall was less likely to be compromised. The presence or absence of suicidal intent was based on the participants' own perception, recounted after the self-harm episode, and therefore also subject to recall and reporting biases. It could not be determined whether anxiety and depressive episodes preceded or followed the victimization experience. By selecting the worst trauma to ascertain PTSD, one may overestimate the probability of it being associated with the complete set of PTSD-level traumas, according to standard psychiatric classification systems. This excess, however, has been found to be a modest 32% (Breslau et al., 2004). In the present study, about 40% of the victims had experienced a sole event in the previous year, similar to the percentages reported in the National Comorbidity Survey and the Australian National Survey (Breslau et al., 2004; Creamer, Burgess, & McFarlane, 2001). Therefore, nearly half of the present sample of victims could have referred only to one event when recounting any PTSD symptoms.

Strengths of the present study include its longitudinal design and a very high follow-up of the cohort in excess of 90% at the assessment periods of interest, which reduces selection bias. Also the self-harm data were based on detailed probe questions to ascertain intent. Previous research with this cohort showed that fewer than 10% of the past-year self-harm episodes involved suicidal intent (Nada-Raja et al., 2004).

Our findings underscore the importance of internalizing disorders as risk factors for later NSSH for both sexes and of addressing PTSD and assault victimization as additional risk factors for women. We would recommend that health

- Gladstone, G. L., Parker, G. B., Mitchell, P. B., Malhi, G. S., Wilhelm, K., & Austin, M.-P. (2004). Implications of childhood trauma for depressed women: An analysis of pathways from childhood sexual abuse to deliberate self-harm and revictimization. *American Journal of Psychiatry*, 161, 1417-1425.
- Gratz, K. L. (2003). Risk factors for and functions of deliberate self-harm: An empirical and conceptual review. *Clinical Psychology: Science & Practice*, 10, 192-205.
- Kessler, R. C. (2000). Posttraumatic stress disorder: The burden to the individual and to society. *Journal of Clinical Psychiatry*, 61(Suppl. 5), 4-12.
- Kimerling, R., Alvarez, J., Pavao, J., Kaminski, A., & Baumrind, N. (2007). Epidemiology and consequences of women's revictimization. *Women's Health Issues*, 17, 101-106.
- Klonsky, E. D., & Moyer, A. (2008). Childhood sexual abuse and non-suicidal self-injury: Meta-analysis. *British Journal of Psychiatry*, 192, 166-170.
- Krysinska, K., & Lester, D. (2010). Post-traumatic stress disorder and suicide risk: A systematic review. *Archives of Suicide Research*, 14, 1-23.
- Langley, J. D., Martin, J., & Nada-Raja, S. (1997). Physical assault among young adults by partners. *Journal of Interpersonal Violence*, 12, 675-684.
- Martin, J., Nada-Raja, S., Langley, J., Feehan, M., McGee, R., Clarke, J., . . . Rivara, F. (1998). Physical assault in New Zealand: The experience of 21-year-old men and women in a community sample. *New Zealand Medical Journal*, 111, 158-160.
- Martinez, P., & Richters, J. E. (1993). The NIMH community violence project: II. Children's distress symptoms associated with violence exposure. *Psychiatry*, 56, 22-35.
- Miettinen, O. S. (1974). Proportion of disease caused or prevented by a given exposure, trait or intervention. *American Journal of Epidemiology*, 99, 325-332.
- Nada-Raja, S., Skegg, K. M., Langley, J. D., Morrison, D. N., & Sowerby, P. J. (2004). Self-harmful behaviours in a population-based sample of young adults. *Suicide and Life Threatening Behavior*, 34, 177-186.
- Nelson, E. C., Heath, A. C., Madden, P. A. F., Cooper, M. L., Dinwiddie, S. H., Bucholz, K. K., . . . Martin, N. G. (2002). Association between self-reported childhood sexual abuse and adverse psychosocial outcomes: Results from a twin study. *Archives of General Psychiatry*, 59, 139-145.
- Newman, D. L., Moffitt, T. E., Caspi, A., Magdol, L., Silva, P. A., & Stanton, W. R. (1996). Psychiatric disorder in a birth cohort of young adults: Prevalence, comorbidity, clinical significance, and new case incidence from ages 11 to 21. *Journal of Consulting & Clinical Psychology*, 64, 552-562.
- Noll, J. G., Horowitz, L. A., Bonanno, G. A., Trickett, P. K., & Putnam, F. W. (2003). Revictimization and self-harm in females who experienced childhood sexual abuse: Results from a prospective study. *Journal of Interpersonal Violence*, 18, 1452-1471.
- Oquendo, M. A., Friend, J. M., Halberstam, B., Brodsky, B. S., Burke, A. K., Grunebaum, M. F., . . . Mann, J. J. (2003). Association of comorbid posttraumatic