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Title: What mediates psychopathology in stalking victims? The role of individual-vulnerability and stalking-related factors
Year: 2012
Journal: Journal of Forensic Psychiatry & Psychology
Volume: 23
Issue: 3
Pages: 361-370
URL: <http://hdl.handle.net/1959.3/374204>

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The definitive version is available at: <http://doi.org/10.1080/14789949.2012.679007>

Words: 2377 (text)

Tables: 1

**WHAT MEDIATES PSYCHOPATHOLOGY IN STALKING VICTIMS?
THE ROLE OF INDIVIDUAL-VULNERABILITY AND STALKING-RELATED FACTORS**

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Keywords: stalking, post-traumatic stress, anxiety, depression, violence

ABSTRACT

Stalking victims report significant psychiatric morbidity, which often persists long after the stalking itself has ceased. Elucidating predictors of psychopathology in victims is critical to informing the clinical management of this population. This study examined demographic, individual-vulnerability and stalking-related predictors of general psychopathology and post-traumatic stress in a community sample of victims (n=236). Regression analyses showed both general psychopathology and post-traumatic stress were influenced by individual-vulnerability factors, particularly the use of avoidance coping, and stalking-related factors, most notably being subjected to threats. This study provides the most comprehensive analysis to date of factors that mediate psychiatric morbidity among stalking victims, and highlights the utility of clinicians focussing on modifying dynamic risk factors such as maladaptive avoidance behaviours to help alleviate victims' psychological distress.

Keywords: stalking, post-traumatic stress, anxiety, depression, violence

INTRODUCTION

There have been significant advances in recent decades in understanding the prevalence of stalking (Tjaden & Thoennes, 1998; Budd & Mattinson, 2000; Purcell *et al*, 2002; Walby & Allen, 2004; Dressing *et al*, 2005), the motivations for this behaviour (Meloy & Gothard, 1995; Harmon *et al*, 1995; Mullen *et al*, 1999; Mohandie *et al*, 2006) and the risks of violence associated with this form of offending (McEwan *et al*, 2007; 2009). The psychological impacts of stalking on victims have also been described, with studies reporting high rates of post-traumatic stress symptoms, anxiety, depression and suicidality, both in community samples (Dressing *et al*, 2005; Purcell *et al*, 2005) and among victims who present to specialist services for assistance (Hall, 1998; Pathé & Mullen, 1997; Kamphuis & Emmelkamp, 2001; Blaauw *et al*, 2002).

Less attention, however, has been paid to predictors of psychopathology among victims of stalking. The relationship between stalking victimisation and psychiatric morbidity is likely to be mediated by a number of factors, including not only differences in the nature of the stalking experience itself, but the resilience or vulnerabilities of the exposed victims. To date, only two studies have examined this relationship. Blaauw and colleagues (2002) surveyed a sample of 241 stalking victims (89% female) who were drawn from the 470 individuals registered with the Dutch Anti-Stalking Foundation. The authors examined the association between scores on the 28-item General Health Questionnaire (GHQ-28; Goldberg & Hillier, 1979) and the experience of the stalking and its severity. The overall rate of psychopathology in the

sample was high, with 78% of victims' meeting 'caseness' for a psychiatric disorder on the GHQ-28. However, the characteristics of the stalking experience contributed little to the levels of psychopathology. Only two characteristics were significant in the predictive model: decreased frequency of intrusions and higher number of safety measures employed, which together explained only 9% of the variance in GHQ-28 scores. Blaauw *et al* hypothesised that individual-vulnerability factors (which were not measured in the study) were more likely to account for psychopathology experienced by stalking victims, particularly resilience to distress.

In another Dutch sample of 131 female victims, all of whom were stalked by ex-intimate partners, Kamphuis & Emmelkamp (2003) reported that 83% met 'caseness' for significant post-traumatic stress as measured by the Impact of Event Scale (IES; Horowitz et al, 1979). Analysis indicated that 22% of the variance in IES scores was explained by the severity of the stalking, most notably exposure to physical violence. Only 8% was explained by individual factors, namely passive coping style and low 'open to experience' (one of the 5-factor personality traits).

To further understand predictors of psychopathology, this study considers the extent to which variance in *both* post-traumatic (IES) and general psychopathology (GHQ-28) is accounted for by factors related to the nature of the victimisation, as well as individual-vulnerability factors, such as the victim's gender, social support, exposure to prior adverse life events and coping style. This study is also the first to examine both individual-vulnerability and stalking-related predictors of psychopathology among a

large community sample of stalking victims, which may be more representative than highly selective help-seeking samples, which have been the focus of the extant research to date. The results of this study will help illuminate those variables – both static and dynamic – that are associated with an increased risk of psychiatric morbidity among stalking victims, thereby assisting mental health professionals by identifying modifiable risk factors that can be the target of clinical interventions for victims of stalking.

METHOD

Sample

The data derives from an epidemiological survey that examined the prevalence, nature and impacts of stalking in a representative Australian community sample (see Purcell *et al*, 2002). A survey was mailed to a randomly selected sample of 3700 men and women whose names and addresses were taken from the electoral roll in the Australian State of Victoria. Entry age to the electoral rolls is 18 years and the rolls cover over 96% of the population as both registration and voting are compulsory. Of the 3700 surveys distributed, 74% could be accounted for, including completed surveys (n=1844), known refusals and surveys not received (eg. subject no longer at that address, deceased, or overseas). Adjusting for the 697 surveys not received, the valid response rate was 61%. The response rate did not differ according to gender. Survey responders were representative of the base electoral population from which they were drawn in relation to gender, marital status, highest level of education, employment and occupational status. However the sample contained fewer people

aged 18-25 years (10% vs. 19%) and more individuals aged 56 years and over (39% vs. 31%).

Each respondent completed questions regarding their demographic characteristics, the experience of harassing intrusions and aspects of their current general health. The study was conducted with the approval of the Human Ethics Committee at Monash University.

The sample here consists of the 236 respondents who reported being subjected to prolonged stalking (median duration 6 months) that caused fear (see Purcell *et al*, 2005).

Independent Variables

Social Support: Respondents were asked “Do you have someone with whom you can discuss your troubles?” followed by a series of brief questions for those who responded in the affirmative regarding their main *source* of support (spouse/ partner, parent, sibling, friend, child or other). This measure was analysed according to the reported presence or absence of social support.

Adverse Life Events: A six-item inventory examined the experience of: serious personal illness or injury; serious illness or injury in a close relative; death of a close relative; death of a close friend; severe financial or legal setback and unemployment exceeding one month. The measure was scored by summing the number of items endorsed.

Coping Style

The Billings & Moos (1981) scale was used to assess coping strategies. This measure considers how the respondent *actually* coped with an index event. Participants were asked to nominate a recent life crisis or stressful event and indicate how they coped by rating 19 separate statements (yes/no). The scale yields scores on three coping styles: *active-cognitive* (6 items: e.g. "I considered several alternatives for handling the problem"), *active-behavioural* (6 items: e.g. "I talked with a partner or relative about the problem") and *avoidance* (5 items: e.g. "I tried to reduce the tension by eating more"). This measure was analysed by calculating the percentage of items positively endorsed for each of the three subscales (0-100%).

Dependent Variables

General Psychopathology

Respondents completed the GHQ-28 (Goldberg & Hillier, 1979), which provides an indication of current psychological health. Respondents are asked to rate the recent (past month) intensity of certain symptoms in comparison with their usual experience. Questions are rated on a four point scale (e.g. from "better than usual" to "much worse than usual"). The 28-item version of the GHQ provides scaled scores in four domains: somatic complaints; anxiety and insomnia; social dysfunction; and severe depression. As these subscales are not independent, only the GHQ-28 total score was analysed (range 0-28).

Post-Traumatic Symptomatology

The IES (Horowitz et al, 1979) was used to assess the severity of post-traumatic symptoms. In relation to a specific index event (in this study, the experience of stalking victimisation), respondents are asked to rate the applicability of each of 15 items over the preceding seven days (never; rarely; sometimes; often). The IES comprises two subscales measuring the common post-trauma reactions of avoidance and re-experiencing phenomena. Seven items inquire about intrusive thoughts and images related to the event and eight items assess attempts to avoid thoughts or reminders of the incident. As the avoidance and intrusion subscales were highly correlated ($r=.80$, $p=.001$), only the IES total score was analysed (range 0-75).

Data Analysis

A hierarchical multiple regression analysis was performed to assess the variance in general psychopathology (GHQ-28) according to individual-vulnerability and stalking-related predictor variables. Variables that were hypothesised to mediate scores on the GHQ-28 were entered in blocks, allowing for calculation of the variance in general psychopathology according to each factor set. Predictor variables were separated into three blocks: *demographic* factors (gender, age and marital status); *victimisation* factors (whether or not the stalking was current/ongoing, whether or not the perpetrator was an ex-intimate partner, the number of stalking methods used, the duration of the pursuit, the experience of threats and/or assault); and *individual-vulnerability* factors (perceived availability of social support, exposure to adverse life events and coping style).

In order to meet the assumptions for linear regression analysis, all categorical variables were re-coded as binary variables (-1 and 1). As GHQ-28 total scores were skewed (with most subjects scoring in the lower ranges of the scales), optimal normalising power transformations were estimated using the Box Cox procedure in Stata (StataCorp, 2007). Use of the transformed variable as the dependent variable in regression models yielded residuals with a normal distribution (Kolmogorov-Smirnov: $p=0.20$).

Visual inspection of the distribution of IES total scores suggested that transformation was inappropriate, due to the large proportion of participants with a score of zero. Accordingly, logistic regression was performed with the dependent variable categorised according to whether participants met the threshold for caseness (a score of 35 or greater; Scott-Gliba et al, 1995). Predictor variables were entered in blocks as mentioned above.

RESULTS

Sample Characteristics

The majority of the sample were female (74%), in paid employment (75%), with 54% partnered/married and 28% aged 18-35 years. Most were stalked by a non-intimate (e.g. acquaintance, colleague, stranger), with 21% stalked by an ex-partner.

Predictors of General Psychopathology (GHQ-28)

The regression model yielded a squared multiple correlation (R^2) of 0.238 (*Table 1*).

Individual-vulnerability factors (Step 3: accounting for 14.5% of the variance) were the strongest predictors, followed by victimisation factors (Step 2: accounting for 7.2% of the variance), with demographic factors contributing 2.1% to the explained variance. In the final model, three predictor variables made a significant contribution, in order of effect: (i) avoidance coping; (ii) being threatened; and (iii) experiencing ongoing stalking.

Post-Traumatic Symptomatology (IES)

As indicated in *Table 1*, the model as a whole had a moderate association with post-traumatic status (Nagelkerke $R^2 = 30.1\%$). Individual-vulnerability factors (Step 3: Nagelkerke $R^2 = 14.7\%$) and victimisation factors (Step 2: Nagelkerke $R^2 = 12.1\%$) had a moderate association with post-traumatic status, while demographics factors were only weakly associated (Step 1: Nagelkerke $R^2 = 6.2\%$). The strongest predictor of meeting the threshold for caseness on the IES was having been subjected to threats.

Participants who had been threatened had odds of IES caseness 4.93 times higher than the odds of caseness for those who had not been threatened, controlling for all other factors in the model. Odds of caseness on the IES also increased by 1.23 for each 10% increase in behavioural coping score. Similarly, odds of IES caseness increased by 1.35 for each 10% increase in avoidance coping score.

Discussion

This study is the first to consider predictors of both general psychopathology and post-trauma reactions in a community sample of stalking victims. The results demonstrate that both forms of psychiatric morbidity are significantly influenced by the nature of the stalking – particularly being subjected to threats - and avoidant forms of coping with the stalking experience. The latter predictors are particularly salient as they represent modifiable risk factors that can be targeted in treatment to ameliorate persistent distress.

Victims who employed avoidance coping, such as distraction and escape behaviours, were significantly more likely to score higher on both the GHQ-28 and IES than those who used cognitive coping processes. Behavioural coping (e.g. ‘talking to a friend about the problem’) was also weakly associated with a higher likelihood of caseness on the IES. These findings accord with cognitive processing theories of trauma (e.g. Foa *et al*, 1989; Creamer *et al*, 1992), which postulate that rehabilitation requires *emotional* engagement with the distressing memories or events to lessen their salience. This also accords with Kamphuis and Emmelkamp’s (2003) finding that ‘passive’ coping styles significantly predicted elevated scores on the IES. Working to establish adaptive, cognitive coping strategies is critical in treating stalking victims, and in our clinical experience, can help them regain a sense of empowerment.

Higher levels of both post-traumatic symptomatology and general psychopathology were also predicted by threats. This finding is novel and suggests that the chronic fear

and 'looming vulnerability' that threats generate can have a corrosive effect on victims' psychological functioning, including levels of hyperarousal (Riskin, 1997). Interestingly, the experience of actual physical assaults did not predict post-traumatic symptomatology in this sample, in contrast to the previous findings of Kamphuis & Emmelkamp (2003). However, the Dutch sample exclusively comprised victims of rejected ex-intimate stalkers, which are well-known to demonstrate the highest rates of physical violence (Mullen *et al*, 1999; Palarea *et al*, 1999). Pathé & Mullen (1997) observed in a clinical study of stalking victims that some reported feeling that they may have coped better - and received greater support - had they suffered tangible damage associated with physical violence, as opposed to the psychological distress produced by threats. While the depressive and traumatic reactions caused by threats require clinical intervention, this can be challenging when the threats are credible and do not represent cognitive distortions. In these instances, basic relaxation and coping skills may be of more assistance to victims in managing their distress.

Finally, continuing to experience stalking intrusions was significantly associated with higher levels of general, but not traumatic, psychopathology. However analysis indicated that scores on the IES approached statistical significance ($p=0.057$). That victims who are exposed to ongoing stalking report higher levels of psychopathology than those whose victimisation has ceased is not unexpected, although it is notable that this variable contributed the least variance among the significant predictors. This suggests that while a cessation of stalking violence can ameliorate some of the victim's

distress, psychological ill-effects persist in the presence of non-adaptive coping strategies and the damage of threats.

Conclusions

Despite the documented mental health impacts of being stalked, few studies have systematically considered factors that contribute to psychiatric morbidity in this population. This study provides the most comprehensive analysis to date of predictors of both general psychiatric distress and specific post-trauma reactions, and demonstrates the influence of avoidance coping and threats on persisting psychological distress. Intervening at the earliest opportunity, before avoidance behaviours or a sense of looming vulnerability become ingrained, offers the best hope of reducing longer term morbidity, though is acknowledged to not always be possible.

Table 1: Hierarchical Regression Analyses Predicting General Psychiatric Morbidity (GHQ-28) and Impact of Event Scale (IES) scores among Victims of Stalking

Predictor Variables	GHQ-28 Total Score		IES Total Score		
	ΔR^2	β	$\Delta R^{2\dagger}$	OR	95% CI Lower-Upper
<i>Step 1</i>	0.021		0.062*		
Gender (female=-1, male=1)		-0.09		0.44	0.14-1.32
Age (<46 yrs=-1, >46 yrs=1)		-0.09		1.25	0.51-3.09
Marital Status (not partnered=-1, partnered=1)		0.09		0.41	0.17-1.04
<i>Step 2</i>	0.072*		0.121**		
Ongoing Stalking Intrusions (no=-1, yes=1)		0.15*		4.31	0.96-19.46
Ex-Intimate Stalker (no= -1, yes=1)		-0.03		0.70	0.23-2.12
Number of Stalking Methods (1-9)		0.10		1.09	0.84-1.40
Stalking Duration		-0.04		1.00	0.99-1.00
Threatened (no=-1, yes=1)		0.20**		4.93**	1.86-13.07
Assaulted (no=-1, yes=1)		-0.115		0.80	0.28-2.29
<i>Step 3</i>	0.145***		0.147**		
Social Support (no=-1, yes=1)		-0.11		0.89	0.25-3.18
Adverse Life Events (0-6)		0.08		0.86	0.64-1.14
Cognitive Coping (0-100)		-0.03		0.99	0.97-1.01
Behavioural Coping (0-100)		0.10		1.02*	1.00-1.05
Avoidance Coping (0-100)		0.33***		1.04***	1.02-1.06
Total R ²	0.238***		0.301***		

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.00$. OR = odds ratio. † Nagelkerke R².

Acknowledgements

We would like to acknowledge the assistance of Dr Troy McEwan , Dr Stuart Thomas and Dr Mario Alvarez-Jimenez in the preparation of this article. The authors have no declarations of interest.

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