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ORIGINAL ARTICLE

Violence in stalking situations

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Background. Stalking is often viewed as a precursor to violence, but determining which stalkers might attack is a difficult task. This study overcomes shortfalls in previous investigations by adopting a pseudo-prospective design and examining potential risk factors for different types of stalker.

Method. Demographic, behavioural and diagnostic information was collected from stalkers referred to a community forensic mental health service ($n=211$). Potential risk factors for stalking violence were identified using odds ratios and χ^2 tests, and entered into logistic regression models. Model utility was assessed using receiver operating characteristic curves.

Results. Amongst Rejected ex-intimate stalkers, violence was best predicted by previous violence, making threats and being employed (area under the curve = 0.75), while for stalkers with other motives and relationships to the victim, being aged less than 30 years, substance use at the time of stalking and prior violence best predicted stalking violence (area under the curve = 0.80).

Conclusions. Stalkers at increased risk of violence can be accurately identified by examining motivational and relationship type in conjunction with specific relevant risk factors. Previous violence is a particularly important risk factor, as are threats amongst ex-intimate stalkers. Approach behaviours and psychosis were shown to be less useful in predicting violence.

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Introduction

Stalking is a course of conduct in which one individual repeatedly intrudes upon another producing fear or distress. Epidemiological studies show a lifetime prevalence of stalking victimization greater than 10% (Tjaden & Thoennes, 1998; Budd & Mattinson, 2000; Morris *et al*. 2002; Purcell *et al*. 2002; Dressing *et al*. 2005). Victim surveys reveal that the psychological effects of stalking can be devastating, including post-traumatic symptoms, increased substance use, depression and suicidal ideation (Pathé & Mullen, 1997; Blaauw *et al*. 2002; Kamphuis *et al*. 2003). The frequent concurrence of stalking and psychopathology in victims and perpetrators means that any mental health professional, not just forensic specialists, may be required to assess individuals involved in a stalking situation. Moreover, the literature shows that mental health professionals themselves are at heightened risk of stalking victimization by a current or former client (Purcell *et al*. 2005; Dressing *et al*. 2006; McIvor & Petch, 2006). For professionals faced with stalking situations, understanding and evaluating the risks involved is a daunting task.

When stalking violence occurs it usually involves punching, kicking and shoving. It rarely causes lasting physical damage, although psychological effects can be more persistent. Stalking only occasionally foreshadows serious violence, with ex-intimate partners at particular risk (Pathé & Mullen, 1997; Farnham *et al*. 2000; Purcell *et al*. 2002; James & Farnham, 2003; Rosenfeld, 2004). Stalking can presage sexual violence, although, with the exception of the community sample of Dressing *et al*. (2005), this type of attack is rarely reported (Purcell *et al*. 2002; Mohandie *et al*. 2006).

Reviews of the stalking literature suggest that stalkers can be effectively categorized as high or low risk for violence based solely on their relationship to the victim. Ex-intimate partners pose a relatively high risk of violence, and strangers and acquaintances a relatively low risk (Rosenfeld, 2004; McEwan *et al*. 2007*b*; Resnick, 2007). It has been suggested that increased proximity to the victim is associated with stalking violence (Palarea *et al*. 1999; Kropp *et al*. 2002), and intimidation tactics including threats and

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property damage are identified risk factors. The role of personality disorder, substance use and other general violence risk factors including prior violence and prior criminality by the stalker are less well understood (Rosenfeld, 2004; Rosenfeld & Lewis, 2005; Thomas *et al*. 2008). Contrary to the general risk assessment literature, stalkers with a psychotic disorder have consistently been shown to be less violent (Rosenfeld, 2004).

Existing analyses of stalking violence risk factors have been hampered by reliance on file review and limited sample sizes. The dominance of violence by ex-intimate stalkers means that violence committed by other stalkers is overwhelmed in statistical analyses, obscuring the presence of other characteristics that may also signify heightened risk. As a result, there is currently no way to distinguish between high- and low-risk ex-intimates, and high- and low-risk strangers or acquaintances, even though it is apparent to clinicians working with stalkers that these subdivisions exist. Due to reliance on file review, information in previous studies has often comprised assessments conducted for other purposes, not always directly concerned with stalking, and not using structured interviews or assessment schedules. The diligence with which various stalking behaviours were ascertained and discussed is unknown and definitions of violence have varied widely. Ancillary documentation appears in many cases to have been limited and examination of case files often occurred months or years after the assessment.

This study employed a pseudo-prospective design with semi-structured clinical interviews augmented by extensive psychometric assessments and collateral information to identify risk factors for stalking violence. This approach allowed separate investigation of violence amongst ex-intimate stalkers motivated by rejection and stalkers from other relationship and motivational categories. The aim of the study was to identify risk factors beyond relationship type that differentiate between stalkers presenting high and low risk of violence. A secondary aim was to compare the utility of relationship *versus* motivational typologies in assessing the risk of stalking violence.

Method

Procedure

Data were collected from stalkers referred to a community forensic mental health clinic between 2002 and 2007 (see Warren *et al*. 2005). Inclusion criteria were a conviction for stalking[1]† or evidence of multiple intrusions occasioning fear. Patients were excluded if their mental state, intellectual functioning or language difficulties precluded the possibility of obtaining informed consent. The majority of assessments were conducted by the authors and the remainder carried out by other psychiatrists and clinical psychologists working in the stalker's clinic. Clinicians diagnosed mental illnesses using DSM-IV-TR criteria (APA, 2000). Personality disorder was recorded in the presence of a diagnosis or problematic traits based on clinical interview and psychometric testing [Minnesota Multiphasic Personality Inventory, 2nd edn (Hathaway *et al*. 1989) or Millon Clinical Multiaxial Inventory, 3rd edn (Millon *et al*. 1994)]. Substance use at the time of stalking was recorded separately and in addition to diagnosed substance-use disorders.

Data were collected from clinical interviews, psychometric testing, referral information, police reports and, where available, victim impact statements. As assessments were undertaken at the time of court appearance or the time of the stalking behaviours, some form of collateral information was able to be sourced in all cases. This information was used to classify stalkers by motivation into the 'Rejected', the 'Resentful', the 'Intimacy Seeking', 'Incompetent Suitors' or the 'Predatory' (Mullen *et al*. 1999) and by relationship into ex-intimates, acquaintances and strangers (per Mohandie *et al*. 2006).

Definitions of stalking behaviour

Unwanted communications included telephone calls, written correspondence, mobile phone text messages, ordering or cancelling goods and services, and sending unsolicited materials.

'Approach behaviours' were intrusions that were proximate to the victim (Scalora *et al*. 2003), comprising loitering near, following, accosting the victim with conciliatory or hostile intent, and entering the victim's home without consent.

Threats included explicit verbal or written statements evidencing an intent to harm; e.g. 'I'm going to kill you', 'I'm going to f… you up'. Past threats (prior to the current stalking episode) were recorded as present if there were prior threat to kill or threat to injure convictions, evidence in referral information, or if the participant admitted to past threats.

Property damage was any action that damaged property belonging to the victim or associated with the victim, including theft of belongings.

Approach behaviours, threats, and property damage were recorded as being present or absent, and note was made whether they occurred prior to and separate from the first violent act in the stalking situation.

† The notes appear at the end of the text.

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Violence was defined as physical contact with the victim with intent to coerce or harm. This included touching the victim in a hostile manner (e.g. poking the victim in the stomach with car keys or touching the victim's genitals or breasts). Where the violent behaviour was life threatening, caused significant bodily harm, involved actual or attempted contact with a weapon, or actual or attempted cases of penetrative sexual assault, violence was additionally coded as 'serious violence'. Prior violence was present if convictions for violent offences existed (assault, causing injury, rape, manslaughter, murder, or sexual penetration offences), there were descriptions of prior violence in referral information, or if the participant admitted to prior violence. The nature and context of prior violence was ascertained at interview.

Prior stalking behaviour was present if the individual had convictions for prior stalking behaviour, or admitted prior stalking when questioned. Details of previous stalking were ascertained at interview allowing differentiation between episodes. Where the stalker offended against the same victim, any voluntary cessation of at least 6 months was taken to indicate a break between two separate stalking episodes [see McEwan *et al*. (2008) for discussion of recurrent *versus* persistent stalking].

Analyses

Potential predictors with previously identified positive or disputed relationships to violence were included in the analysis, in addition to behavioural variables not previously examined (e.g. approach behaviours). Univariate analyses were by way of odds ratios and Pearson's χ^2 statistics. Multivariate logistic regression was undertaken with violence as a categorical dependent variable. Individual predictors were selected for the regression equation if their univariate association with violence was significant [significant odds ratio and χ^2 significant at $p < 0.25$ (per Hosmer & Lemeshow, 2000, p. 95)]. To control multicollinearity, variables were screened for correlations with other predictors > 0.3. Where such a correlation existed, the decision was made to include one variable of the pair based on clinical utility and perusal of the stalking literature. Receiver operating characteristic (ROC) curve analysis was used to ascertain the hit rate of the full logistic regression models and subsequent improper models [see Mossman (1994) for a review]. The area under the curve (AUC) in a ROC analysis is interpreted as the probability that a randomly selected violent stalker will have a greater number of predictors included in the model than a randomly selected non-violent stalker (i.e. the hit rate as a function of the false alarm rate, or, sensitivity as a function of 1 – specificity). An improper model is one where the weights assigned to variables are obtained by a non-optimal method – in this case, they were all made equal to 1 – to overcome some of the traditional limitations of multiple regression. By setting the weights equal to 1 and retaining only the direction of the relationship to the criterion variable, the influence of sample specific variance is reduced and the model may have greater applicability outside the originating sample (Dawes & Corrigan, 1974; Dawes, 1979). Cross-validation of the models was not attempted due to limited sample sizes.

Results

Participants

Inclusion criteria were met by 232 individuals, 21 refused to participate (90.5% participation rate). Referral came from courts (36%), community correction services (36%), general mental health services (27%) and self-referral (1%). Of the 211, 190 were male (90%). Age ranged from 18 to 76 years (mean = 35.6, S.D. = 10.7). Most identified themselves as heterosexual ($n = 199$, 94%), and the majority were unpartnered at the time of the stalking situation ($n = 189$, 90%). Nearly a third (29%) had never maintained an intimate relationship for more than 1 year. Only 75 (36%) stalkers had completed secondary schooling. Full-time employment was reported by 90 (43%), 20 (10%) were in part-time employment, 28 (13%) on disability pensions and 73 (35%) were unemployed. English was a second language for 22 (10%) individuals.

Psychiatric status

Only 36 stalkers (17%) had no mental disorder. The commonest problems were in the personality disorder spectrum with 40 (20%) having this as their sole pathology and a further 52 (25%) coexisting with other disorders. Cluster B disorders predominated. Schizophrenia was the most common Axis I disorder (17%), followed by depression (13%). Delusional disorder (erotomanic type) was present in six cases (3%), intellectual disability in 13 cases (7%) and Asperger's syndrome in four cases. A substance-use disorder was present in 22 cases (10%), but a further 77 individuals reported substance use at the time of the stalking behaviour [47%, comprising illicit drug use (18%), alcohol use (16%) and alcohol and drug use (13%)].

Nature of stalking behaviours

The average duration of stalking episodes was 58.3 weeks (S.D. = 104.5), with a range of less than 1 week to 832 weeks (median = 14, mode = 4). The mean number

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Table 1. *Frequency (%) and nature of stalking behaviours and prior relationship to victim by motivational type*

	Whole sample ($n=211$)	Rejected ($n=72$)	Resentful ($n=51$)	Intimacy seeking ($n=28$)	Incompetent suitor ($n=40$)	Predatory ($n=19$)
Stalking behaviours						
Violence	39 (18.5)	27 (37.5)	4 (7.8)	1 (3.6)	3 (7.5)	4 (21.1)
Threats	105 (49.8)	51 (70.8)	39 (76.5)	10 (35.7)	1 (2.5)	4 (21.1)
Property damage	59 (28)	25 (34.7)	16 (31.4)	8 (28.6)	5 (12.5)	5 (26.3)
Phone calls	111 (52.6)	51 (70.8)	30 (58.8)	12 (42.9)	13 (32.5)	4 (21.1)
Emails/letters/faxes	64 (30.3)	22 (30.6)	18 (35.3)	12 (42.9)	10 (25.0)	1 (5.3)
SMS	34 (16.1)	27 (37.5	3 (5.9)	–	4 (10.0)	–
Unsolicited materials	35 (16.6)	13 (18.1)	8 (15.7)	9 (32.1)	4 (10.0)	–
Loiter/spy	99 (46.9)	35 (48.6)	14 (27.5)	14 (50)	20 (50)	16 (84.2)
Follow victim	42 (19.9)	16 (22.2)	5 (9.8)	6 (21.4)	6 (15)	9 (47.4)
Accost victim	97 (46)	44 (61.1)	18 (35.3)	13 (46.4)	13 (32.5)	9 (47.4)
Enter victim's home	29 (13.7)	21 (29.2)	1 (2.0)	2 (7.1)	3 (7.5)	2 (10.5)
Stalk by proxy	12 (5.7)	6 (8.3)	3 (5.9)	3 (10.7)	–	–
Order/cancel goods or services	1 (0.5)	1 (1.4)	–	–	–	–
RECON Typology[a]						
Ex-intimate ($n=71$)		90.3%	11.8%	–	–	–
Acquaintance ($n=76$)		9.7%	70.6%	75.0%	27.5%	5.3%
Private stranger ($n=59$)		–	13.7%	17.9%	72.5%	94.7%
Public stranger ($n=4$)		–	3.9%	7.1%	–	–

SMS, Short Message Service.

[a] 'RElationship and CONtext'-based stalker typology proposed by Mohandie *et al*. (2006).

of harassment methods was 3.4 (S.D. = 1.8). Details of specific stalking behaviours and their frequency are shown in Table 1.

Prior stalking, prior violence and prior threats

A total of 65 stalkers (31%) were known to have previously stalked, 19 against the same victim. A total of 44 (21%) had previously uttered threats to harm or kill, and 86 (41%) had been violent prior to the current stalking episode.

Predictors of violence

Violence occurred in 39 cases (19%), 11 meeting the additional criteria for serious violence. Twenty were violent once, eight twice, four three times, and the three remaining were violent four, five and six times respectively. The latter three were Predatory stalkers who stalked and sexually assaulted multiple victims. In 14 cases violence was extremely minor, involving a combination of hostile touching, pushing or restraining victims. In a further 22 cases sexual touching, punching or kicking was present (in four cases constituting serious violence), and 16 cases went so far as attacks with a weapon or vehicle, sexual assault, attempted murder and armed sieges (many stalkers used multiple types of violence). In 10 cases, serious violence was committed by a Rejected ex-intimate stalker (accounting for 35% of all violence by Rejected stalkers); the other involved a Predatory stalker. In a further four cases serious violence was allayed by successful management or fortuitous circumstance. One Resentful stalker was arrested at the victim's home, armed with a knife and expressing homicidal intent. Similarly, an Intimacy-Seeking stalker was arrested inside the victim's home armed with a knife and rope. Another Resentful stalker followed up a physical attack on the victim by setting his home and car alight (in the mistaken belief that the victim was inside), and, in a final case, a Rejected stalker tried to hire someone to execute the victim. Fortunately, the person he attempted to employ was an undercover police officer.

As serious violence was relatively uncommon across the sample, violence was analysed as a single variable to avoid problems with low base rates. In 77% of cases violence was accompanied by threats. Of threats, 63% were uttered separately and prior to any violence, making them useful potential predictors for inclusion in the multivariate models. Conversely, examination of the timing of approach behaviours showed that in 60% to 90% of cases (depending on behaviour) they immediately preceded violent behaviour, e.g. the stalker followed the victim home,

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Table 2. *Logistic regression model predicting violence amongst all stalkers*

	β	Wald	p	OR	95% CI
Model					
Aged <30 years	1.2	7.7	0.01	3.4	1.4–8.3
Rejected	1.9	18.4	0.00	6.7	2.8–16.0
Prior violence	1.3	9.2	0.00	3.7	1.6–8.5
Psychotic illness	−1.2	2.8	0.10	0.3	0.1–1.2
Writing	−0.9	2.9	0.09	0.4	0.1–1.1
Constant	−3.1	38.5	0.00		
Goodness-of-fit statistics					
Hosmer–Lemeshow	df=7	$\chi^2=3.6$	0.8		

OR, Odds ratio; CI, confidence interval; df, degrees of freedom.

Table 3. *Logistic regression model predicting violence amongst the Rejected stalkers*

	β	Wald	p	OR	95% CI
Model					
Threats	1.8	5.8	0.02	5.8	1.4–24.4
Prior violence	1.4	5.2	0.02	4.1	1.2–13.5
Employed	1.5	5.8	0.02	4.5	1.3–15.4
Constant	−3.4	13.9	0.00		
Goodness-of-fit statistics					
Hosmer–Lemeshow	df=5	$\chi^2=1.2$	0.95		

OR, Odds ratio; CI, Confidence interval; df, degrees of freedom.

broke in and became violent in an unbroken sequence. This vitiated their predictive value and approach behaviours were excluded from subsequent multivariate analyses[2].

The full multiple logistic regression model predicting violence amongst stalkers is shown in Table 2. Seven predictors were entered into the model and a final combination of Rejected motive, age under 30 years, prior violence, and the absence of psychosis or writing to the victim best predicted violence. Subsequent ROC curve analysis showed that this model had a good level of predictive accuracy [AUC=0.83, 95% confidence interval (CI) 0.77–0.90] which was not markedly reduced by conversion to an improper model (AUC=0.81, 95% CI 0.74–0.88). Using ex-intimate relationship rather than Rejected motivation, an identical model with similar predictive accuracy was identified (proper model AUC=0.83, 95% CI 0.76–0.90 and improper model AUC=0.81, 95% CI 0.73–0.88).

These analyses showed a Rejected stalking motivation to be one of the strongest predictors of stalking violence, but did not help to determine which Rejected stalkers were more likely to be violent. The sample was subdivided into Rejected stalkers and other motivational types to examine the primary research question (one stalker was excluded as motivational type was ambiguous).

Violence amongst Rejected stalkers

A total of 27 of the 72 Rejected stalkers were violent. Four potential predictors were entered into the multivariate equation and the final combination of previous violence, threats, and employment at the time of the stalking episode best predicted stalking violence (shown in Table 3). The full model AUC was 0.76 (95% CI 0.65–0.87), which was not reduced by conversion to an improper model (AUC=0.76, 95% CI 0.64–0.87).

As serious violence was relatively common amongst Rejected stalkers, these cases were removed and analyses repeated to identify whether serious violence was negatively affecting the predictive value of the model. The same model was identified and details are shown in Table 4. The ROC analysis of the full model resulted in an AUC of 0.77 (95% CI 0.64–0.90), and of the improper model an AUC of 0.75 (95% CI 0.60–0.88).

The sample was also divided using ex-intimate relationship to compare the predictive utility of the two typologies. Of the 71 ex-intimate stalkers, 27 were

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Table 4. *Logistic regression model predicting violence amongst the Rejected stalkers, excluding cases of serious violence*

	β	Wald	p	OR	95% CI
Model					
Threats	1.3	2.9	0.01	3.7	0.8–16.2
Prior violence	1.1	2.7	0.10	3.0	0.8–11.4
Employed	2.1	7.3	0.09	8.1	1.8–37.6
Constant					
Goodness-of-fit statistics					
Hosmer–Lemeshow	df = 5	$\chi^2 = 1.0$	0.96		

OR, Odds ratio; CI, Confidence interval; df, degrees of freedom.

Table 5. *Logistic regression model predicting violence amongst stalkers other than the Rejected*

	β	Wald	p	OR	95% CI
Model					
Aged < 30 years	2.0	8.1	0.00	7.8	1.9–31.7
Prior violence	1.2	2.9	0.09	3.2	0.8–12.4
Substance use	1.2	2.6	0.11	3.3	0.8–13.7
Constant	−4.7	27.4	0.00		
Goodness-of-fit statistics					
Hosmer–Lemeshow	df = 5	$\chi^2 = 3.6$	0.61		

OR, Odds ratio; CI, Confidence interval; df, degrees of freedom.

violent. The multivariate model included only prior violence and threats (employment was excluded due to correlation with prior violence [$r = 0.4$]). Receiver operating curves showed moderate levels of predictive accuracy for the proper model (AUC = 0.68, 95% CI 0.55–0.81) and the improper model (AUC = 0.68, 95% CI 0.55–0.80).

Violence amongst other motivational types

Violence occurred in 12 of 138 stalking episodes instigated by a stalker with a motivation other than rejection (including one case of serious violence). Approach behaviours were excluded from multivariate analyses due to co-occurrence with violence. Writing to the victim was significantly negatively associated with violence ($\chi^2 = 5.7$, $p = 0.02$), but as no stalkers who wrote were also violent the variable was excluded from the logistic regression. The other three variables with significant relationships to violence were included in the final multivariate model shown in Table 5 (age under 30 years, previous violence, and substance use at the time of the stalking episode). Calculation of a ROC curve showed good predictive accuracy (AUC = 0.82, 95% CI 0.67–0.97), which was not markedly reduced by conversion to an improper model (AUC = 0.80, 95% CI 0.66–0.95).

Selection of the 140 stalkers with either a stranger and acquaintance relationship to the victim isolated the same 12 cases of violence and an identical multivariate model with comparable predictive accuracy (proper model AUC = 0.81, 95% CI 0.67–0.96, improper model AUC = 0.78, 95% CI 0.63–0.94).

Threats and stalking violence

Half of all stalkers made threats to harm or kill the victim or a third party. Of the 105 stalkers who uttered threats, 30 (29%) were also violent and threat(s) preceded violence in 63% of cases. In eight cases threats were uttered at the time of violence, and in three cases the timing of the threat could not be reliably determined.

Table 1 shows the distribution of threats by stalker motivation type. Almost half of all threats were uttered by Rejected stalkers. Examination of the frequency of threats and violence showed that while only one in 10 threats uttered by stalkers of other motivations were acted upon (six of 53), almost one in two Rejected stalkers who threatened were also violent

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(24 of 52). Conversely, 64% of violent stalkers with other motivations did not make threats, but the same was true for only 12% of Rejected stalkers.

Discussion

This study indicated that risk factors for stalking violence differ with stalker motivation and relationship to the victim. Largely echoing findings from earlier studies, examining stalkers as a homogeneous group revealed that young ex-intimate partners who did not suffer from psychosis, had histories of violence, and did not write to the victim were most likely to be violent during a stalking campaign. However, this study also clearly showed that high- and low-risk Rejected ex-intimate stalkers and high- and low-risk stalkers from other motivational groups could be identified by analysing these groups separately. Thus, risk assessment (and management) of stalking violence could be improved by ascertaining the stalker's motivation and then examining risk factors specific to that motivational type.

Rejected ex-intimates who present with a history of violent behaviour and who have made threats present the greatest risk of violence. This may reflect underlying difficulties managing anger or coping with change in relationships, which could contribute to affectively driven, reactive, violence. Violent Rejected ex-intimate stalkers did not have more problematic personality traits or disorders, nor Axis I disorders. Maintaining employment during the stalking episode increased the risk of violence amongst rejected stalkers. This is surprising given that employment has traditionally been associated with a lower relative risk of violence, being thought of as a proxy for greater social integration and interpersonal skills, and requires further investigation.

For stalkers of other motivational types, predictors of stalking violence were similar to violence risk factors in the general offender population, including previous violence, substance use, and youth. Sending written missives may have been associated with a lowered risk of violence because face-to-face contact was less common amongst those who communicated at a distance. These findings are preliminary, but it is possible that violence for stalkers with motivations other than rejection has less to do with explicit anger towards the victim, and more to do with contextual factors and disinhibition (associated with substance use and youth). While the results may be an artefact of the low base rate of violence amongst these stalkers, violence occurred or was narrowly averted in 10% of cases, highlighting the fact that these stalkers should not be discounted when conducting violence risk assessments.

Threats and violence

Threats were clearly related to subsequent violence amongst Rejected ex-intimates and equally clearly unrelated to subsequent violence amongst other stalker types. This is consistent with the results of Palarea *et al*. (1999), and suggests that the initial confusion over the relationship between threats and violence in the stalking literature may have been a result of analysing stalkers as a homogeneous group, resulting in negligible statistical associations. While it is now generally accepted that threats should be considered risk factors for violence (Meloy, 2007), these results indicate that clinicians should be particularly wary when the threatener is a Rejected ex-intimate of the victim (Resnick, 2007). Recent research also suggests that stalkers who utter threats should also be considered at increased risk to victims other than the threat recipient and to themselves, highlighting the need for assertive management of this particular group (Warren *et al*. 2008).

Approach behaviours

While approach behaviours are routinely examined in studies of threats and attacks on public figures (Meloy *et al*. 2004), approaches have rarely been studied in more typical stalking situations. Where they are examined, few have differentiated between approaches accompanying violence and those occurring independently (Palarea *et al*. 1999). This study shows that most approaches did not lead to violence and when a stalker both approached and was violent, the behaviours were frequently concurrent. In these cases, high levels of angry arousal typically precipitated and sustained a continuous chain of increasingly proximate stalking behaviours that culminated in violence. Therefore, approach behaviours appear to have little predictive value and their role in risk assessment is largely restricted to victim safety planning and risk management behaviours. Where other risk factors are present (i.e. Rejected ex-intimates, threats, and substance misuse), clinicians should work with victims to identify action plans if they are followed or accosted by the stalker.

Psychosis and violence

The oft-cited negative relationship between stalking violence and psychosis is refuted when motivational type is considered. The Rejected ex-intimates were rarely diagnosed with psychotic disorders. Once they were removed from the analysis, there was no difference in the frequency of violence by psychotic *versus* non-psychotic stalkers. This requires replication, but clinicians should not assume that the presence of

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psychosis is associated with lowered risk of stalking violence.

Relationship and motivation

There was overlap between categories when classifying stalkers using motivation or relationship, but the two typologies were not interchangeable. Nonetheless, there were only marginal differences in accuracy when predicting violence. Given the apparent empirical equivalence of the two typologies, the choice of classification scheme should vary according to the needs of the user. The motivational typology will assist clinicians devising management and intervention strategies (Pinals, 2007; MacKenzie *et al*. 2008), while relationship type in conjunction with other easily discernable factors could be a simple way to judge risk when the nuances of a stalking situation cannot be assessed.

Limitations

Although the study's pseudo-prospective design is a significant strength, it also had some inherent limitations. Information was drawn directly from participants, but weeks or months had often passed since the stalking behaviours leading to referral. Participants' recall may have been coloured in cases where assessment would impact on sentencing or parole conditions. Subjects were likely to be more disordered than individuals who stalk without attracting police or psychiatric attention. Nonetheless, the sample reflects those most likely to be subject to a clinical risk assessment, making its composition a potential strength.

The accuracy of the multivariate models may be overly optimistic as the logistic regression equations were developed using, and then applied to, the same subjects. The model specific to stalkers with motivations other than rejection may be particularly vulnerable to over-fitting due to the low base rate of violence in that subset of the sample. Therefore, these data can support only increased concern and attention in risk management planning, not a label of high or low risk for individual stalkers. Even so, the statistical methodology attempted to overcome some of the limitations of a traditional multiple logistic regression approach. Separating subgroups of individuals with differing probabilities of stalking violence revealed different predictive models for Rejected ex-intimates and others. Conversion of proper regression models into improper models also makes them relatively simple to apply in a clinical setting. Presenting the data in this manner will hopefully make it easier to integrate the results into future risk assessments, although we advise clinicians to exercise caution and clinical sense in applying these models in practice, particularly as they have not yet been cross-validated.

Operational definitions of stalking behaviours and stalking violence were included to increase the likelihood that future studies of stalkers will use comparable definitions. The stalking literature has been plagued by inconsistent definitions of what constitutes stalking, violence and serious violence. Hopefully, future research will use similar definitions, allowing pooling of data across true prospective studies of stalking violence and other areas of stalking risk, such as persistence. Similarly, while this article presents information using the Mullen *et al*. (1999) motivational typology, stalkers were also categorized using a modified version of the relationship typology proposed by Mohandie *et al*. (2006). Coding participants according to multiple typologies provides scope for appraising the utility of each when making and evaluating risk assessments and management strategies.

The identified models provide a starting point for the development of structured professional guidelines specific to violence in stalking situations[3]. Structured professional judgement-based risk assessments are flexible and sensitive to change, essential in stalking situations where risk state can fluctuate rapidly. They allow for the consideration of idiographic and situational factors particularly important in the stalking context where the nature of the relationship between victim and perpetrator, the stalker's motivation and possible psychopathology, the victim's response, and the legal and mental health context all play a role in facilitating or preventing violence (Dawes *et al*. 1989; Mullen *et al*. 2006).

Identification of potential risk factors for stalking violence is necessary to assist clinicians faced with stalking situations, but over-reliance on largely unchangeable risk factors, like many in this study, will result in inadequate assessments of risk. We need to improve our understanding of acute causal factors such as fluctuating anger and cognitive distortions which are potentially associated with stalking violence. As James & Farnham (2003) note, we have limited understanding of the role of situational factors in violent behaviour, factors which may be particularly important in stalking situations where context and relationship are so integral to violence. Development of effective stalking risk assessment guidelines will be reliant on research in these areas.

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Declaration of Interest

None.

Notes

[1] Under the Victorian Crimes Act (1958) s21A stalking is a 'course of conduct' consisting of specified behaviours occurring on more than one occasion or one protracted occasion, which caused fear or would cause fear to a reasonable person. Therefore, multiple unwanted intrusions occurring on only 1 day can be and are identified as stalking. Despite concerns about being over-inclusive, this very broad definition of stalking was chosen to ensure that the sample was a true reflection of the types of individuals likely to be referred for risk assessment of stalking behaviours. A detailed description of the legislation is available in McEwan *et al*. (2007*a*).

[2] Details of the frequency of approach behaviours and their temporal relationship to violence are available on request.

[3] The authors are aware that guidelines are currently being developed and validated by R. Kropp, S. Hart and D. Lyon using a structured professional judgment framework to guide the assessment and management of the risk of violence in stalking situations.

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