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Barry Rosenfeld

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VIOLENCE RISK FACTORS IN STALKING AND OBSESSIONAL HARASSMENT

A Review and Preliminary Meta-Analysis

BARRY ROSENFELD

Fordham University

The fear of violence is among the most common and debilitating concerns faced by stalking victims. This review summarizes the extant literature on stalking-related violence, highlighting risk factors unique to stalking as well as those common to most offender populations. In total, 13 published studies were found, encompassing 11 unique samples and 1,155 individuals. The overall rate of violence was 38.7%. Significant correlates of stalking-related violence included the presence of threats, substance abuse, and the absence of a psychotic disorder. Other strong correlates included a prior intimate relationship between victim and offender and a history of violent behavior. Results are discussed with respect to risk assessment strategies and future directions for stalking risk assessment research.

Keywords: *violence; aggression; risk assessment; stalking; harassment*

Are there any victims of stalking or harassment who have not questioned whether their safety is in jeopardy? Whether justified or not, the fear of violence is a common component of stalking victimization and can be a source of intense psychological stress for many victims (Mechanic, Uhlmansiek, Weaver, & Resick, 2000; Pathé &

AUTHOR NOTE: *Address correspondence to Barry Rosenfeld, Ph.D., Department of Psychology, Fordham University, 441 East Fordham Road, Bronx, New York 10458; e-mail: rosenfeld@fordham.edu*

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Mullen, 1997). Although definitive answers do not exist to questions about violence risk in stalking cases, a growing body of literature has emerged in the last few years that has begun to clarify the risk factors that are both unique to stalking as well as common to other forms of criminal behavior.

A crucial starting point for any literature review must be to clarify what is being studied (i.e., what behaviors constitute stalking). Numerous definitions of stalking exist, but most of these definitions share several key elements, including the occurrence of repetitive, unwanted contact that is perceived by the victim as intrusive and/or threatening. Meloy and Gothard (1995) offered one commonly cited definition of stalking as “the willful, malicious, and repeated following and harassing of another person that threatens his or her safety” (p. 258). Many antistalking statutes are somewhat more flexible regarding whether the threat be viable, such as requiring that the victim have “reasonable fear of harm” as a requisite element of the crime. Regardless of whether researchers have chosen to label their subjects as stalkers, obsessional followers, obsessional harassers, or erotomanics, most have essentially targeted the same offender population. Hence, for the sake of consistency, the term *stalker* is used here with the caveat that many of these individuals have not actually stalked (i.e., followed in a stealthy manner) their victim(s). It should also be noted that the use of the term *victim* in reference to the target of stalking is also somewhat controversial, with many writers preferring the term *survivor* (despite the unfortunate fact that not all victims survive the stalking experience) or *target*. Despite this controversy, the term *victim* is retained here with the acknowledgment that no negative connotations are intended by the use of the term.

This review summarizes the existing literature on violence and stalking and outlines goals, needs, and concerns for the next generation of stalking research. The first section focuses briefly on the existing epidemiological data with regard to the prevalence of violence and homicide in stalking cases. The next section describes research focusing on specific correlates of violence in stalking cases, which is then synthesized into a meta-analysis of these data. Finally, the implications of this literature for the clinical practice of risk assessment are discussed.

SCOPE OF THE PROBLEM

Estimating the magnitude of stalking-related violence is complicated by a number of factors, many of which are specific to the methodology used to study this question. For example, most of the literature on stalking-related violence has been drawn from samples of identified offenders, either in criminal justice or mental health settings. Because violent crimes such as homicide, sexual assault, and other forms of felonious assault are far more serious than stalking offenses, cases in which stalking turns violent may not be readily identified by researchers or prosecuted as stalking cases. Therefore, the samples typically described in the extant literature likely underestimate the rate of severe violence because these individuals may not be recognized as stalking cases *per se*. On the other hand, cases in which only minor or nuisance harassment behaviors have occurred are typically underrepresented in the published literature because many victims simply fail to report these cases, and, even if they are reported, the police may not investigate the case if no safety concerns are evident. As a result, research studies likely draw excessively from the middle ground without attempting to estimate (or even acknowledge) the extent of any sampling biases. Although more accurate estimates of the rate of violence might arise from the growing number of prevalence studies (Spitzberg & Cupach, 2003), these studies have either ignored this issue or utilized relatively vague criteria for determining whether violence has occurred. For example, Tjaden and Thoennes (1998), in their seminal survey of 16,000 U.S. adults, found a lifetime prevalence rate for stalking victimization of 2% for men and 8% for women, although they did not investigate the rate of violence *per se*. They did find that more than 40% of all stalking cases involved direct threats of violence and that 81% of the women who were stalked by former intimates had also been physically assaulted by that same partner, but rates of violence (or assault) for other subgroups of stalking cases were not described.

Assessing the risk of violence is also hindered by the lack of consensus as to what behaviors constitute violence. Unfortunately, many stalking researchers have failed to indicate operational definitions of what behaviors constitute violence in their research (e.g., Palarea, Zona, Lane, & Langhinrichsen-Rohling, 1999), or they have used

terms such as “physical assault” synonymously with violence (e.g., Mullen, Pathé, Purcell, & Stuart, 1999; Sheridan & Davies, 2001). Others (e.g., Brewster, 2000; Rosenfeld & Harmon, 2002) have utilized broad definitions of violence, such as considering any unwanted physical contact or threat involving a weapon to constitute violence. Although any of these definitions are open to criticism, definitions that include any physical contact or serious threat are more consistent with the definitions of violence used by other researchers outside the stalking arena (Tedeschi & Felson, 1994). However, other researchers (e.g., Steadman et al., 1998) require that physical contact be sufficient to cause injury, presumably to separate acts of significant harm (e.g., physical assault) from more mild aggressive acts (e.g., pushing, slapping).

Not surprisingly, different definitions of what constitutes violence correspond to different observed rates of violence. For example, Harmon, Rosner, and Owens (1998) utilized a broad definition of violence (“documented physical aggression”) that included cases in which the term violence seems inappropriate (e.g., “banging repeatedly on the victim’s door,” p. 240). The result of this overly broad definition was a very high rate of violence, as 47% of their sample was so classified. In a subsequent study using approximately 100 of Harmon et al.’s 175 participants (and supplementing this sample with an additional 104 cases), Rosenfeld and Harmon (2002) used a somewhat more conservative definition of violence, requiring either actual physical contact or confrontation with a weapon. This extension and reanalysis yielded a much lower rate of violence (34%). Based on his review of this emerging literature, Meloy (1998) estimated that the rate of violence is between 25% and 35% and that the rate of homicide is “less than 2%” (p. 16). Five years later, the accuracy of Meloy’s estimates remains largely unknown.

Few studies have even differentiated between minor and serious violence, and none has systematically studied the rate of homicide in stalking cases. Rosenfeld and Harmon (2002) distinguished between minor and serious violent incidents with the latter encompassing cases in which the extent of actual or attempted harm was significant (i.e., potentially life-threatening or significant bodily injury). However, they found relatively few such incidents in their sample, with only 12 of 204 offenders (6%) meeting this definition. Brewster

(2000) differentiated violent stalking offenders on the basis of victim injury; however, her definition of *injury* included “small cuts and bruising through wounds requiring stitches and broken bones” (p. 45). Thus, while perhaps eliminating the most inconsequential subgroup of violent offenders, this definition includes many incidents that would be considered relatively mild.

Given this limited database, estimating homicide in stalking cases is perhaps even more difficult than estimating the risk of violence in general. Nevertheless, there is growing agreement among researchers that this upper limit of “less than 2%” is likely quite inflated (Mullen, Pathé, & Purcell, 2000; Rosenfeld, 2003; Spitzberg & Cupach, 2003). Assuming Tjaden & Thoennes’s (1998) prevalence data for stalking is accurate (i.e., roughly 1,000,000 adult women and 250,000 adult men stalked annually), a 2% homicide rate would project to more than 25,000 stalking-related homicides in the United States per year, 80% (20,000) of which would involve female victims. This estimated homicide rate, which corresponds to nearly 70 stalking-related deaths per day, far exceeds the total number of homicides in the United States, which was roughly 16,000 in 1999 (Federal Bureau of Investigation, 2001). Thus, although it is easy to reject the 2% estimate as grossly inflated, providing a more accurate estimate is far more difficult.

Although the true rate of stalking-related homicide is unknown, there is little doubt that victims of stalking have significant concerns about the risks posed by a stalker. Psychological distress and lifestyle disruptions among stalking victims have been well documented (e.g., Kamphuis & Emmelkamp, 2001; Pathé & Mullen, 1997; Westrup, Fremouw, Thompson, & Lewis, 1999), and much of this distress relates to fears of violence. Although many stalking victims might benefit from educational interventions focused on understanding and minimizing the actual risk of violence, such interventions must be informed by empirical research to avoid providing a false sense of security to those victims who are in fact at risk.

Given the importance of accurately estimating the risk of violence in stalking cases, it is perhaps disconcerting that so few researchers have focused on this topic. Nevertheless, this growing literature has already yielded several variables that appear to correspond to increased risks of violence, including threats, diagnosis, victim-offender rela-

tionship, and prior criminal history. This review attempts to summarize this growing literature to help clarify both the existing findings as well as the remaining goals for future researchers.

POSSIBLE RISK FACTORS FOR VIOLENCE IN STALKING CASES

THE RELATIONSHIP BETWEEN THREATS AND VIOLENCE

An intuitively obvious predictor of violence is the existence of a previous threat. Not surprisingly, threats almost inevitably heighten concerns among stalking victims, regardless of how implausible the threat may actually be. Yet, the correspondence between threats and violence is not as simple as stalking victims might assume. Studies of stalking-related violence have demonstrated high rates of false positives, where threats were made but never carried out. Likewise, smaller, but nevertheless substantial, false-negative rates have also been observed, with many violent stalkers giving no warning of their violent intentions. But regardless of whether threats actually predict violence, there is little doubt that the threats themselves are distressing to stalking victims.

The first studies to investigate threats in stalking cases were limited by reliance on a vague criterion. In two separate studies, Dietz and colleagues (1991) analyzed letters written to Hollywood celebrities and members of Congress in search of variables that distinguished writers who approached their target from those who did not. In the sample of letters written to Hollywood celebrities (a total of 214 individuals, half of whom approached their target), threats were not associated with a history of having approached the celebrity; threats were present in 23% of the cases in which an approach was made and 22% of cases where no approach was reported (Dietz, Matthews, Van Duyne, et al., 1991). In the sample of letters written to U.S. congressmen (86 individuals, half of whom were approached), threats were negatively associated with approach, and 33% of those who approached had previously made threats compared to 84% of those who did not approach (Deitz, Matthews, Martell, et al., 1991). These counterintuitive findings remained consistent regardless of how threats were classified

(e.g., direct threats, veiled threats, conditional threats). Whether approach is related to actual violence was not explored.

Harmon et al. (1998) focused more directly on violence in their analysis of violence risk factors in 175 “obsessional harassers” referred for court-ordered psychiatric evaluation. Despite ambiguity in their classification of violent offenders (i.e., as described above), Harmon et al. found a significant association between threats and violence, corresponding to a moderate to large effect size ($\phi = .39$). Several years later, Rosenfeld and Harmon (2002) studied 100 of these same offenders along with an additional sample of 104 stalking offenders. Their reanalysis of this sample using a more narrow definition of violence again demonstrated a significant association between threats and violence, ($\phi = .25$). Moreover, threats added significantly to a multivariate logistic regression model that also contained age, race, education, and prior intimate relationship.

Mullen et al. (1999) also analyzed correlates of violence in a sample of 145 Australian stalkers referred for court-ordered psychiatric evaluation. They found that a history of assault was present in 36% of cases and was significantly associated with previously expressed threats ($\phi = .28$). However, when threats were entered into a multivariate model along with other significant correlates of violence, only previous criminal convictions remained significant. Interestingly, in a subsequent study using an expanded sample, Purcell, Pathé, and Mullen (2001) found that threats were more strongly associated with violence for men than for women. Roughly half of the men who made threats (49%) were later violent compared to only 30% of women.

Palarea et al. (1999) investigated 223 stalking cases that had been identified by the Los Angeles Police Department’s Threat Management Unit (rather than focusing on offenders referred for court-ordered mental health evaluation, as most previous studies had done). They found a modest but statistically significant relationship between threats and violence toward the victim ($r = .15$), but they did not offer an operational definition of either variable (although they distinguished violence toward the victim from violence toward property and toward third parties). Interestingly, despite the unique sampling methodology, the rate of violence observed in this study (33%) was quite similar to those found in other large-scale studies.

Two studies of stalking victims have also observed significant associations between threats and violence (Brewster, 2000; Sheridan & Davies, 2001). Brewster interviewed 187 female stalking victims, all of whom had been romantically involved with the offender. Of the 10 independent variables Brewster (2000) analyzed, only the presence of threats significantly predicted violent behaviors (defined as “ranging from pushing, slapping, kicking, and biting, to rape, assault with a weapon, etc.,” [p. 47]). Moreover, these results remained essentially unchanged regardless of whether violence was analyzed as a dichotomous variable (present/absent), an ordinal variable (no violence, one or two violent incidents, three or more violent incidents), or in terms of injuries suffered (no violence, violence without injury, violence with injury). Interestingly, there was no relationship between the presence of violence while the relationship was still ongoing (i.e., prior to the stalking behavior) and stalking-related violence after the relationship had ended. In a study of British stalking victims, Sheridan and Davies (2001) also found a modest, although statistically significant, correlation between threats and violence ($r = .24$). Interestingly, threats toward third parties were much more strongly associated with violence toward third parties ($r = .45$).

In her study of 100 Canadian stalking cases, Morrison (2001) observed a strong correlation ($r = .54$) between threats and violence. However, several methodological issues limit the interpretation of this result. Most important, her definition of violence, rated on a 7-point Likert-type scale, appeared to include threats as a form of violence (a 0-point score on this item corresponded to “no physical violence or threats of violence by the stalker”). Thus, these ratings are likely not independent of one another. Furthermore, her database was elicited from newspaper accounts and published legal opinions, admittedly a nonrepresentative sample of questionable generalizability. Given these limitations, any interpretation of her findings appears questionable.

Finally, in a study of 54 stalkers referred by the court for forensic evaluation, Meloy, Davis, and Lovette (2001) found a significant association between threats and violence. Of the 37 offenders who made explicit threats, 25 were classified as violent (68%) compared to 7 of the 17 offenders (41%) who did not make threats. However, a multivariate model that contained all of their potential predictor vari-

ables retained only one significant predictor, namely, victim-offender relationship.

Although these studies have utilized several different research methodologies and widely divergent definitions of violence, virtually all (with the exception of the two studies by Dietz et al., which did not focus on violence) have observed a significant association between threats and violence (see Table 1). Given these consistent findings, Brewster's (2000) conclusion that both victims and clinicians "need to take verbal threats seriously" (p. 50) clearly appears justified.

MENTAL DISORDER AND VIOLENCE

Another potential correlate of violence that has been the subject of much speculation and rather less empirical investigation is the role of mental disorders on the part of the stalker. The general public often fears that mentally disordered individuals are at a heightened risk for becoming violent, and much of the early stalking literature was driven by this same fear (Mullen et al., 2000). Not only is an analysis of the relationship between mental disorders and violence beyond the scope of this review, the role of mental disorders may be different in the context of stalking than in the broader psychiatric population. Yet addressing this question may be even more complex than assessing the risk posed by stalking offenders who make threats. First, although psychiatric diagnoses are well established, the range of diagnoses observed in stalking offenders is remarkably broad and therefore, without extraordinarily large sample sizes, precludes a systematic analysis of the relationships between particular diagnoses and stalking-related violence. Instead, researchers have created broad categorical distinctions, such as psychotic versus nonpsychotic offenders, those with and without a personality disorder, or the presence or absence of substance abuse. Furthermore, because many of these disorders co-occur, establishing unique, nonoverlapping diagnostic categories is virtually impossible. Instead, most researchers have simply analyzed these dichotomous classifications individually without considering the potential overlap among or interaction between them. Finally, although there is little doubt that diagnoses can be reliably ascribed when evaluators are trained to use structured diagnostic instruments, no stalking research to date has used such methods. Instead, diagnoses

TABLE 1: Correlates of Violence in Stalking Research

First Author/Year	N/Sample	%	Threats	PSY	PD	SA	Rel.	Crim. Hx	Other Correlates
Kienlen, 1997	25 court referred	32	N/A	-.29	.19	.22		.32 ^g	none assessed
Menzies, 1997	29 male erotomanics	44					.27		> 1 delusional object
Schwartz-Watts, 1998	42 court referred	48		-.01	.34 ^d		.34		no significant rs
Harmon, 1998 ^a	175 court referred	47	.39				.15		violence history
Palarea, 1999	223 criminal cases	33	.15					-.09	stalking typology
Mullen, 1999	145 court referred	36	.28	-.17		.19		.33	
Brewster, 2000	187 stalking victims	46	.28			.20		.34 ^h	
Farnham, 2000	50 court referred	44		-.20			.43		
Meloy, 2001	55 court referred	60	.26	-.31 ^e	.14	.18	.81	.01	
Morrison, 2001	100 criminal cases ^b	? ^c	.54		.63 ^f				
Sheridan, 2001	95 stalking victims	31	.24					.26	
Rosenfeld, 2002	204 court referred	34	.25	-.18	.08	.19	.41	.00	age, race, IQ, motive

Note. Significant coefficients are indicated by bold type; PSY = psychotic disorder; PD = personality disorder; SA = substance abuse; Rel. = prior intimate relationship; Crim. Hx = prior criminal history.

A. 100 of the 175 participants were included in Rosenfeld and Harmon, 2002; the results of their analyses appear more accurate.

B. Data were obtained through review of newspaper accounts and published legal cases.

C. The authors only analyzed violence severity data (based on 7-point Likert-type scale) with no indication of the percentage violent.

D. Multilevel comparison of violence and diagnosis (Axis I diagnosis only, substance abuse only, personality disorder only, Axis I and personality disorder, Axis I and substance abuse, personality disorder and substance abuse, no diagnosis).

E. Axis I disorder versus no Axis I disorder.

F. Continuous variable measuring "degree of indications of likely mental or personality disorder."

G. "Serious antisocial behavior unrelated to erotomanic delusions."

H. Data on prior criminal convictions were missing for 39% of the sample (72 of 187 cases).

analyzed in stalking research typically represent chart diagnoses of unknown accuracy. Despite these inherent limitations in the study of the relationship between mental disorders and violence, a number of significant findings have emerged from this literature.

One of the first studies of violence risk in stalking cases, which also included some data on psychiatric diagnoses, was published by Menzies, Federoff, Green, and Isaacson (1995). However, this study included direct assessments of only 13 men who had been hospitalized with symptoms of erotomania (a delusional belief that another person is in love with oneself), and it combined these data with information gleaned from published reports of an additional 16 erotomaniac men. The men in their sample were ascribed a number of different diagnoses, including schizophrenia, delusional disorder (erotomaniac type), and depression. More problematic was their definition of "dangerous behavior," which included both threats and violence, confounding what is clearly an important distinction (and obviously precluding any analysis of the relationship between the two). In addition, because all participants were diagnosed with a psychotic mental disorder, questions concerning the relationship between psychosis and violence could not be addressed. Nevertheless, they did report data on the presence of antisocial personality disorder and history of substance abuse, although neither was associated with dangerous behavior. Whether this null result was the result of their methodology (e.g., studying only men with erotomania, combining data derived from clinical interviews and published archival data), their small sample, or the ambiguous criterion variable (dangerous behavior) is unknown.

Several other small studies have addressed the relationship between psychosis and violence (Farnham, James, & Cantrell, 2000; Kienlen, Birmingham, Solberg, O'Regan, & Meloy, 1997; Meloy et al., 2001; Schwartz-Watts & Morgan, 1998). Each of these studies analyzed data from stalkers who had been referred for court-ordered psychiatric evaluations, and none found a significant association between psychosis and violence. However, in two of these three studies, violence was considerably less likely to occur among psychotic offenders. For example, Kienlen et al. (1997) found that only one of the eight psychotic stalkers in their study was violent (12.5%) compared to 7 of 17 nonpsychotic stalkers (41%), a difference that corresponds to a moderate effect size ($\phi = -.29$). Schwartz-Watts and Morgan (1998), on the

other hand, found no difference in the rate of psychosis among violent ($n = 20$) versus nonviolent ($n = 22$) offenders charged with stalking-related felonies in South Carolina. They also compared these groups with regard to the presence of a substance abuse disorder and "organicity," although neither variable was significantly associated with violence. More recently, Farnham et al. (2000) described a study of 50 stalkers referred for pretrial psychiatric evaluation in northern London. They also found no statistically significant relationship between "serious violence" and the presence of "active psychotic illness at the time the offence was committed" (p. 199), although their data also indicated a small to moderate effect size ($\phi = -.20$).

Unlike the other small-sample studies, Meloy et al. (2001) did observe a significant negative association between violence and the presence of a "major mental disorder" (described by the authors as an Axis I mental disorder). They found that violence was displayed by 46% of individuals with an Axis I disorder (which was not defined further but included schizophrenia, mood disorder, and delusional disorders) compared to 78% of the offenders without an Axis I diagnosis. However, there was no significant relationship between violence and Axis II disorders (personality disorders) or substance abuse/dependence. Moreover, the absence of an Axis I disorder did not contribute to the prediction of violence in a multivariate model that instead included only prior intimate relationship between victim and offender.

Harmon et al. (1998) attempted to resolve the dilemma of dual diagnoses by collapsing diagnostic data into a series of unique and mutually exclusive categories (e.g., Axis I diagnosis only, substance abuse only, personality disorder only, Axis I and substance abuse, personality disorder and substance abuse). Although they observed a significant association between diagnosis and violence using this method, their results were based on a chi-square analysis in which roughly half of the possible cells had an expected frequency of less than five, raising concerns about the stability and validity of these significant findings. Moreover, most of the diagnostic combinations that were interpreted by the authors were based on very small group comparisons, again highlighting concerns regarding the validity of their findings.

In a subsequent study that reanalyzed some of these data, Rosenfeld and Harmon (2002) focused on specific diagnostic comparisons,

including two-way interaction effects between substance abuse and psychosis and substance abuse and personality disorder. They also attempted to improve the validity of the chart diagnoses by incorporating data from multiple sources and multiple psychiatric evaluation results. Their analyses demonstrated a significant association between violence and psychosis, as 21% of psychotic offenders were classified as violent versus 41% of nonpsychotic offenders. Substance abuse was also associated with violence, as 53% of offenders with a history of substance abuse were classified as violent versus 29% of offenders with no substance abuse history. However, there was no significant relationship between the presence of a personality disorder and violence nor any significant interaction effects for substance abuse and either psychosis or personality disorder diagnoses. Interestingly, this failure to observe a significant interaction between substance abuse and psychosis contradicts the results of studies of the mentally ill (e.g., Steadman et al., 1998) that have suggested that the interaction between psychosis and substance abuse is particularly problematic.

In their study of 145 Australian stalkers, Mullen et al. (1999) also found a significant relationship between violence and both psychosis and substance abuse. They found that 25% of psychotic offenders assaulted their victims compared to 43% of nonpsychotic offenders but did not describe the rate of violence among offenders with and without a history of substance abuse. However, both associations between diagnosis and violence were relatively modest ($\phi = -.17$ for psychosis and $\phi = .19$ for substance abuse) and neither was retained in a multivariate model that included only previous criminal convictions.

In her study of stalking victims, Brewster (2000) also reported a significant relationship between substance abuse (on the part of the offender) and violence, although this relationship was complicated by her analytic method. Not only did she consider substance abuse as two separate variables ("alcohol abuse" and "drug use"), but her results differed depending on the outcome variable studied (occurrence of violence, violence severity, degree of injury suffered). She found no relationship between substance abuse variable and either presence/absence of violence or number of violent incidents, but she did observe a significant relationship for each substance abuse variable after the other variable was excluded from the model (presumably

because of the collinearity between these variables). Furthermore, a reanalysis of her data in which both substance abuse variables were combined revealed a moderate, statistically significant association with violence ($\phi = .20$, see Table 1). Moreover, because the determination of drug use and or alcohol abuse was based on victim (former intimate) report, the accuracy of these data as a reflection of a substance abuse diagnosis is unknown and potentially biased. For example, respondents who suffered violence at the hands of a former intimate may have been more likely than respondents who were not victimized to label that individual's drinking as problematic. Thus, although her data offer some support for a relationship between substance abuse and violence, firm conclusions are premature.

Most recently, Morrison (2001) also investigated the relationship between mental disorder and stalking-related violence, however, her methodology again prevents any comparisons with other studies. Specifically, she operationalized mental disorder as a continuous variable based on a 5-point Likert-type scale based on the "degree of indications of likely mental or personality disorder." Although descriptive data were reported regarding the proportion of cases in which specific types of mental disorders were likely present, no analysis of the relationship between specific types of mental disorder and violence was conducted. Thus, her findings (that this mental disorder variable was significantly correlated with violence severity, $r = .63$) cannot be compared to data reported by other investigators.

In summary, although some discrepancies have been observed in literature addressing the relationship between stalking-related violence and mental disorder, a number of consistent findings have also emerged. Perhaps the most compelling finding is that the presence of a psychotic disorder appears to decrease the likelihood of violence. Virtually every study that has analyzed this relationship has observed a significantly lower rate of violence among psychotic stalkers compared to nonpsychotic stalkers, with the only exception likely reflecting a small sample size. The presence of a personality disorder diagnosis, on the other hand, has rarely been significantly associated with violence, although few studies ($n = 3$) have addressed this question. Given this discrepancy, it is apparent that these two groups (psychotic and personality-disordered stalking offenders) are not mutually exclusive and exhaustive diagnostic categories. Also, by collapsing all

stalking offenders diagnosed with a personality disorder into a single group, important differences between specific personality disorders might be obscured (e.g., antisocial or paranoid offenders may be much more often violent than dependent or narcissistic offenders). Future research would likely benefit from a more detailed assessment of the specific types of personality psychopathology found among stalking offenders. Finally, substance abuse has increasingly emerged as a consistent and significant correlate of violence. Although some discrepancies have been noted (e.g., Brewster, 2000), this literature has increasingly identified substance abuse as a significant risk factor for stalking-related violence. Given these consistent findings, there is little doubt that future risk assessment studies must pay close attention to psychiatric diagnoses to better understand the risk factors for stalking-related violence.

VICTIM-OFFENDER RELATIONSHIP

Although attention to the problem of stalking was initially driven by a small handful of high-profile cases in which celebrities were targeted by severely disturbed stalkers, clinicians and researchers have become increasingly aware of the high rate of stalking in the general public. Not only are most stalking incidents directed at former intimates (Tjaden & Thoennes, 1998), but this group also may be at substantially greater risk for violence than other subgroups of stalking victims (Mullen et al., 2000). Because many offenders who target former intimates are primarily motivated by anger and revenge, even if this motive is intertwined with romantic desires, the potential for violence appears quite common.

Harmon et al. (1998) were the first to question whether different victim-offender relationships might correspond to differing rates of violence. They divided their sample of "obsessional harassers" into those who once had an intimate relationship with the stalker, casual acquaintances, and those who had no prior relationship. They found significant differences in the rates of violence across these three groups, with substantially higher rates of violence among former intimates compared to casual acquaintances and strangers. This relationship was essentially unchanged in Rosenfeld and Harmon's (2002) extension and reanalysis of these data. Furthermore, former intimates

(versus other victim-offender relationships) contributed significantly to a stepwise logistic regression model predicting violence, even after other risk factors (i.e., age, race, level of education, threats) were included.

Schwartz-Watts and Morgan (1998) compared the frequency of violent behavior in stalking offenders with a prior romantic attachment versus offenders classified as "casual associates" in their study of felony stalking cases in South Carolina. Although this analysis did not reach statistical significance, their data revealed a moderate effect size ($\phi = .27$) that approached significance despite the small sample ($N = 42$). Farnham et al. (2000), on the other hand, found a strong association between victim/offender relationship and serious violence, with 14% of former intimate stalkers engaging in violence compared to only 25% of stalkers who targeted strangers and 28% of those targeting acquaintances.

Unlike other analyses of stalking-related violence, Palarea et al. (1999) focused their attentions specifically on the risk of violence posed by former intimate stalkers, dividing their sample into those with ($n = 135$) and without ($n = 88$) a prior intimate relationship. They found that offenders with a previous intimate relationship were more likely to be violent toward the victim as well as toward the victim's property and were more likely to make threats than were stalkers without a prior intimate relationship. Victim-offender relationship remained significant in their path-analysis models even after several other relevant covariates were included but did not contribute significantly after they considered the extent to which the offender approached the victim during the course of stalking (although former intimates were much more likely to exhibit approach behaviors, suggesting an indirect effect). In sum, Palarea et al. (1999) concluded that offenders with a prior intimate relationship were more likely to threaten, approach, and ultimately assault their victims than stalkers who targeted nonintimates.

Meloy and colleagues also observed a strong association between victim-offender relationship and violence in their sample of 54 "obsessional followers." They found that prior sexual intimates were significantly more likely to assault the target of their harassment, as 32 of the 36 prior sexual intimates were classified as violent (89%) compared to

only 1 of 19 individuals who targeted strangers or casual acquaintances (5%). Indeed, this variable (victim-offender relationship) was the only significant predictor in their logistic regression model predicting violence, as no other variables contributed significantly after victim-offender relationship was included. However, given the small sample and limited range of predictor variables (only six variables, selected on the basis of the existing literature, were analyzed), it is premature to place too much weight on these findings.

More recently, Sheridan and Davies (2001) studied the relationship between victim-offender relationship and violence in a sample of stalking victims. They also found a strong association between prior intimate relationship and violence, as 45% of the victims who were previously involved romantically with the stalker were physically assaulted compared to 14% of the victims who had an acquaintance relationship with the stalker and 33% of those with no prior relationship (strangers). Moreover, former intimate stalkers were more likely to try to kill the victim, threaten third parties, violate an order of protection, and engage in a range of other stalking-related activities.

In summary, of the six studies that have studied the association between victim-offender relationship and stalking-related violence, five observed statistically significant effects (Farnham et al., 2000; Meloy et al., 2001; Palarea et al., 1999; Rosenfeld & Harmon, 2002; Sheridan & Davies, 2001) and the sixth (Schwartz-Watts & Morgan, 1998) found a comparable effect size, but presumably because of the small sample size, the result did not reach statistical significance. This emerging consensus clearly supports the conclusion offered by Farnham and his colleagues (2000), who declared that "the greatest danger of serious violence from stalkers in the UK is not from strangers or from people with a psychotic illness, but from non-psychotic ex-partners" (p. 199).

PRIOR CRIMINAL CONVICTIONS

Another violence risk factor identified in several studies of stalking-related violence (as well as the violence literature in general) is the offender's criminal history. These studies, however, have defined prior criminal history in widely differing ways and, at times, have

failed to offer any operational definition whatsoever. For example, some authors (Meloy et al., 2001; Rosenfeld & Harmon, 2002) have considered only prior convictions unrelated to stalking, whereas others (Mullen et al., 1999) have included any prior criminal conviction; some (Menzies et al., 1995; Palarea et al., 1999) have not offered any operational definition of prior criminal convictions. Furthermore, the source of data on prior criminal behavior has rarely been specified, but few authors indicate access to official records (i.e., rap sheets). Given this methodological variability, it is not surprising that inconsistent findings have emerged in studies addressing the relationship between criminal history and stalking-related violence.

Menzies and colleagues (1995) were the first to assess prior criminal behavior as a potential risk factor for violence in stalking cases in their study of male erotomanics. They found that serious antisocial behavior unrelated to the erotomaniac beliefs was the strongest predictor of dangerous behavior, which they defined as threats or violence toward the target of their delusional beliefs or toward a third party. Serious antisocial behavior was also one of the two significant predictors in a multivariate logistic regression model, although their use of a multivariate model with 29 participants is highly questionable. Using a substantially larger and more representative sample of Australian stalkers, Mullen et al. (1999) also found prior criminal history to be the strongest predictor of stalking-related assault. In fact, prior criminal history was the only significant predictor in their multivariate model. Likewise, Brewster (2000), in her study of stalking victims who had been harassed by former intimates, found a significant association between prior criminal convictions and violence ($\phi = .34$). However, this finding was not included in Brewster's published report, because the large volume of missing data (roughly 40%) precluded including prior criminal convictions in multivariate analyses.

Despite these positive findings, several studies have failed to observe a relationship between previous criminal behavior and violence. Three studies (Meloy et al., 2001; Palarea et al., 1999; Rosenfeld & Harmon, 2002), of nearly 500 stalkers in total, found no significant association between violence and prior criminal history. Given these conflicting results, the status of prior criminal convictions as a risk factor for stalking-related violence remains unclear.

OTHER RISK FACTORS

Psychologists and the lay public often assume that the best predictor of future behavior is past behavior, and this adage is often applied to violence risk assessment. However, few studies have actually analyzed whether violence prior to the stalking relationship corresponds to a heightened risk of stalking-related violence. Palarea and colleagues (1999) addressed this question, observing a significant correlation between previous violence and stalking-related violence ($r = .43$). In fact, past violence was the strongest predictor of violence in their multivariate models. Brewster (2000) also studied previous violence but focused only on whether violence had occurred in the intimate relationship prior to its dissolution. However, she found no relationship between past domestic violence and any of her stalking-related violence variables. Likewise, Rosenfeld and Harmon (2002) found a small association ($\phi = .09$) between violence prior to and unrelated to the stalking case and stalking-related violence, although this relationship did not reach statistical significance ($p = .10$). Nonetheless, offenders with a history of violence unrelated to stalking were somewhat more likely to be violent in the course of this harassment than were offenders with no known history of violence (43% vs. 31%). In sum, the importance of previous violence as a predictor of stalking-related violence is, at best, inconclusive.

Finally, a number of demographic variables have been analyzed in various studies but none with sufficient consistency to permit a meaningful review. In fact, most studies have failed to analyze possible demographic predictors of stalking-related violence. For example, although Mullen et al. (1999) reported a number of demographic characteristics for their sample of Australian stalkers, they did not indicate whether any of these variables differentiated violent from nonviolent stalkers (nor whether these possible associations were even analyzed). Likewise, Palarea et al. (1999) did not indicate whether any demographic variables were associated with violence. Brewster (2000), on the other hand, described the demographic characteristics of stalking victims, although the clinical significance of victim characteristics, even if significant associations had been found, is unclear.

Only two studies to date (Rosenfeld & Harmon, 2002; Schwartz-Watts & Morgan, 1998) have incorporated demographic variables

into their data analysis in a systematic manner. Schwartz-Watts and Morgan (1998) found no relationship between violence and any of the demographic variables they studied, including age, education, race, and marital status, but their report was limited by their small sample size. Rosenfeld and Harmon (2002) included a number of demographic and historical variables in their analysis of violence risk in 204 offenders referred for court-ordered mental health evaluation. Of the demographic variables studied, age, race, and education emerged as strong predictors of violence. Specifically, younger offenders were more often violent than older offenders, non-Caucasians were more often violent than Caucasians, and less educated stalkers were more often violent than more highly educated offenders. Moreover, all three variables remained significant in the multivariate logistic regression model that also included victim-offender relationship (prior intimate versus other) and prior threats, suggesting that they each provided a unique contribution to the prediction of violent behavior in this sample. Despite Rosenfeld and Harmon's significant findings, the limited data available and contradictory results observed by Brewster (2000) and Schwartz-Watts and Morgan (1998) preclude any firm conclusions regarding the relationship between demographic characteristics and violent behavior.

SUMMARY

The studies reviewed here reveal a number of consistent correlates of violent behavior in stalking cases. Among the strongest and most consistent correlates of violence have been prior intimate relationship, threats, substance abuse, and the absence of psychosis. Other, weaker or less consistent correlates have included prior criminal and violence history and personality disorder diagnosis. Demographic variables, on the other hand, have been too rarely studied to yield any clear or consistent findings. Finally, although each study that has attempted to generate a multivariate model has yielded different models, these differences may be partially an artifact of the different predictor variables included (and different methods of operationalizing variables) in each of these studies. A thorough analysis of these multivariate relationships is simply premature given this limited body of published literature.

META-ANALYSIS RESULTS

To systematically integrate the results of these studies into a more cohesive picture of violence risk factors in stalking cases, a meta-analysis was used to generate overall estimated effect sizes for each of the variables described above. Weighted effect sizes and 95% confidence intervals (CI) were calculated based on the formulas described by Hunter and Schmidt (1990). Because reliability data were not available for the dependent variable in these studies (violent/nonviolent), effect-size estimates could not be adjusted for attenuation as is often recommended. Also, the small number of studies available for meta-analysis precluded an analysis of the study characteristics that were associated with stronger/weaker effect-size estimates. Of the 12 studies discussed in this review, only 10 were included in the meta-analysis. Harmon et al. (1998) was omitted because of the substantial overlap in subjects between this report and the recent extension and reanalysis by Rosenfeld and Harmon (2002), and Morrison (2001) was excluded because her reliance on a Likert-type rating of violence severity generated data that were not statistically equivalent to the data used in other studies. With these two studies excluded, the overall rate of violence across the remaining studies (including 1,055 offenders) was 38.6%.

A meta-analysis of the correlates of violence in stalking offenders largely echoed the descriptive review above but also revealed some interesting differences (see Table 2). Particularly striking was the finding that despite yielding the largest overall effect size (.32), victim-offender relationship did not significantly deviate from zero because of the wide CI around this estimate (-.05 to .69). Thus, although four of six studies (and one that was not included in the meta-analysis) observed a significant association between violence and a previous intimate relationship, the overall effect size did not significantly differ from zero. A substantial element in the large confidence interval based on these studies was the unusually large effect size (.81) observed by Meloy and his colleagues (2001). Therefore, although this effect was not statistically significant, it nevertheless appears reasonable to conclude that prior intimates represent a high risk for violence.

Another strong correlate of violence across the published literature was the presence of threats, which had an overall effect size of .26.

TABLE 2: Meta-Analysis of Stalking-Related Violence

<i>Risk Factor</i>	<i>Number of Studies</i>	<i>Participant Total</i>	<i>Weighted Effect Size</i>	<i>95% Confidence Interval</i>
Threats ^a	6	909	.26	.08 to .44
Prior intimate	6	669	.32	-.05 to .69
Psychotic disorder	6	521	-.18	-.04 to -.32
Personality disorder	4	288	.10	.03 to .17
Substance abuse history	5	620	.19	.17 to .21
Criminal history	6	843	.12	-.25 to .49
Violence history	3	614	.25	-.03 to .53

Note. a. Morrison (2001) was excluded from this analysis because her data were not analogous (i.e., r based on a measure of violence severity rather than presence/absence of violence used in other studies).

This analysis, based on six studies involving 814 individuals, generated a 95% CI of .08 to .44, indicating a significant overall effect. Violence history, on the other hand, although generating an effect size of similar magnitude (.25), yielded a much broader CI (-.03 to .53), in part because these estimates were based on only three studies and a total of 614 subjects. Prior criminal history, which yielded conflicting results in the six studies in which the variable was analyzed ($n = 843$), generated a small and nonsignificant overall effect size (.12; 95% CI: -.25 to .49).

Diagnostic variables, on the other hand, fared much better in this meta-analysis, as all three variables analyzed (i.e., presence of a psychotic disorder, personality disorder, and substance abuse history) were statistically significant. Perhaps not surprisingly, history of substance abuse proved to be the strongest of these predictors, generating an overall effect size of .19 and a 95% CI of .17 to .21 (based on five studies and 620 participants). However, presence of a psychotic disorder revealed a virtually identical effect (albeit in the opposite direction), with an overall effect size of -.18 and a 95% CI of -.04 to -.32 (based on five studies and 471 participants). Even diagnosis of a personality disorder, which was not statistically associated with violence in any of the three studies that addressed the relationship, generated a significant effect size (.10; 95% CI: .03 to .17; $n = 288$), apparently because of the consistency in the small effects observed in these studies.

PRELIMINARY CONCLUSIONS

The above literature review and meta-analysis support several tentative conclusions and perhaps a few that are somewhat stronger. First, the small samples and idiosyncratic methods that characterize many of these studies (e.g., differences in sampling methods, variable definitions, and measurement) clearly limit the conclusiveness of any interpretations based on this new but rapidly growing literature. However, a growing number of somewhat larger studies, each using different study methodologies, have generated greater consistency. Perhaps the most reassuring conclusion that can be drawn from this review is that although some form of violence appears to occur quite often in stalking cases (between 30% and 50% of cases), severe violence has been much less frequent. Rosenfeld and Harmon (2002) were among the few researchers to specifically document cases of serious violence and found such cases to be relatively infrequent (12 of 204 cases, or 6%). Although Brewster (2000), in her analysis of victim reports, observed a substantially higher rate of injuries resulting from stalking-related violence (37% of her total sample), her definition of injury included cuts and bruising, and no cases of life-threatening violence were reported. Thus, although the sampling methods used in most stalking research likely underestimate the rate of severe violence to some degree and no estimates of the extent of this bias exist, the relatively low rates of serious or injurious violence in published studies are nevertheless heartening. High-profile cases of stalking-related homicide may fuel public concerns, but these cases appear to be relatively atypical in the spectrum of stalking cases.

Another conclusion supported by this review is that several risk factors that are unique to stalking-related violence, as well as some that are more typical of violence in general, have emerged from the growing literature (see Table 3 for a summary). Among the most consistent correlates of violence observed in the stalking literature are threats and a previous intimate relationship between the victim and offender. Although an expressed threat does not necessarily mean that violence will inevitably follow, the absence of a threat does not preclude this possibility. Threats have been consistently found to be one of the strongest correlates of violence in virtually every published study of stalking-related violence, despite substantial rates of both

TABLE 3: Risk Markers for Stalking Violence

<i>Strong Evidence</i>	<i>Some/Moderate Evidence</i>	<i>Little/No Evidence</i>	<i>Unknown Evidence</i>
Threats	Violence history	Criminal history	Suicidal ideation
Prior intimate relationship	Personality disorder	Gender of victim	Victim of child abuse
Not psychotic	Low education	Gender of offender	Psychopathy
Substance abuse	Young age	Multiple stalking victims	Employment status
	Revenge motive		Impulsivity
			Race/socioeconomic status

false positives and false negatives. Likewise, the meta-analysis results not withstanding, the existence of a prior intimate relationship between victim and offender also has emerged as one of the strongest correlates of violence in several large studies. Former intimates appear substantially more likely to assault the target of their harassment compared to offenders who had a casual relationship with the victim or developed an attachment to an individual with whom they have no real relationship.

A number of consistent findings have also emerged with regard to clinical diagnosis and stalking violence. For example, offenders with a psychotic disorder are consistently less violent than nonpsychotic offenders. Whether psychotic disorders constitute a “protective factor” (Rogers, 2000) or merely reflect the relatively higher risk of violence posed by nonpsychotic offenders may be largely a matter of semantics, but the findings have been relatively consistent across a number of different studies. Alternatively, psychotic stalkers, many of whom have erotomanic delusions, may pose less risk of violence because they are more likely to be romantically motivated rather than seeking revenge (Rosenfeld, 2000). Whatever the reason, the finding that psychotic individuals are at relatively lower risk than nonpsychotic individuals has emerged in a number of other risk-assessment settings (e.g., Quinsey, Harris, Rice, & Cormier, 1998; Steadman et al., 1998).

A history of substance abuse, on the other hand, has typically corresponded to an increased rate of violence among stalking offenders. Finally, the presence of a personality disorder, although not significantly associated with violence in any of the individual studies,

yielded a statistically significant (albeit small) effect in meta-analysis. Thus, despite the modest effect sizes observed, diagnostic variables appear to be among the strongest and most consistent correlates of violence in the stalking literature.

Interestingly, two variables that have been frequently identified as strong predictors of violence among both offender and psychiatric populations do not appear to predict violence in stalking and harassment cases. Prior criminal history and history of violence unrelated to stalking, although significantly associated with violence in some studies, revealed substantial inconsistencies across the studies analyzed, and neither yielded a significant overall effect size in the meta-analysis. Therefore, although firm conclusions regarding the status of these predictors may be premature (particularly with regard to violence history, which has been analyzed in only three studies and often poorly measured in those), the possibility is clear that some common correlates of violence in typical offender populations may not be associated with violence in stalking cases. Indeed, the mere possibility that some predictors of violence in one population might not be relevant in another (which appears quite probable based on this review) justifies the need to conduct risk assessment research in the particular populations and situations of interest (in this case, stalking offenders) rather than generalizing from other literatures.

Finally, a number of possible correlates of violence have been largely neglected in the emerging stalking risk assessment literature, including demographic variables such as age, race, gender, and level of education (all of which have been associated with violence in other populations). Although significant associations have occasionally been reported for these and other variables, too little research has systematically studied the personal characteristics of stalking offenders to justify any firm conclusions. It should also be noted that demonstrating an association between demographic variables and violence does not necessarily indicate that the connection is causal. For example, Silver (2000) provided compelling evidence that the relationship between race and violence was largely, if not wholly, the result of other, often unmeasured, variables, such as socioeconomic status. Still, other variables that might predict violence in stalking cases, such as offender personality characteristics (e.g., psychopathy and impulsivity), have not been systematically studied in stalking cases. Until the influence

of these and other possible correlates of violence (e.g., history of physical or sexual abuse and socioeconomic status) are better understood, clinicians charged with the responsibility of assessing the risk posed by stalking situations will continue to work in a largely unguided atmosphere.

However, translating the existing (or future) stalking risk assessment literature into a valid and clinically useful assessment tool or guide requires more than simply counting the number of studies in which a particular correlate has emerged or estimating a variable's effect size. Many correlates are likely to overlap, essentially sharing the same variance in explaining violence (i.e., multicollinearity). Thus, an offender might appear to have multiple violence risk factors, when in reality, all or most are highly correlated with one another. On the other hand, the relative importance of a particular correlate (e.g., medication compliance) may be far greater in some offenders than others. Although multivariate modeling techniques can certainly address variable collinearity and have been increasingly utilized to develop actuarial risk assessment models (e.g., Quinsey et al., 1998), these prediction models do not allow for individual variations in the interpretation of predictors (i.e., a variable may be more relevant for some offenders than others), a problem that has been increasingly recognized in the risk assessment literature (Litwack, 2001). Nevertheless, more sophisticated data analytic methods certainly are needed to enhance our understanding of the factors that influence violence risk in stalking cases, despite the potential for misunderstanding the results.

In addition, future research needs to begin to include prospective designs to assess the extent to which the identified correlates are indeed predictors. Prospective studies offer a crucial opportunity to implement and evaluate strategies for reducing the risk of violence rather than simply predicting its likelihood. Clinicians have become increasingly focused on identifying interventions that can reduce the risk of violence (i.e., risk management) as a more useful and informative alternative to the traditional prediction estimates (Heilbrun, O'Neill, Strohman, Bowman, & Philipson, 2000). Whether clinical interventions can (or must) be targeted specifically to stalking offenders or are more general in nature (e.g., antipsychotic medications for psychotic offenders), researchers must begin to study the impact of

these interventions on the course of stalking. In the absence of any data regarding interventions that reduce (or heighten) risk, clinicians likely will continue to offer suggestions based largely on their intuition or knowledge of related (but not necessarily comparable) literatures. Given the significant risks posed by incorrect assessments of violence risk (e.g., disrupting one's life unnecessarily or failing to take threats and warning signs seriously), the importance of accurate and comprehensive risk assessment data cannot be underestimated.

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