Homicide as a Risk Factor for PTSD among Surviving Family Members

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Abstract

In this National Institute of Justice-funded study, random digit dialing telephone survey methodology was used to screen a large, nationally representative sample (N = 12,500) of the non-institutionalized U.S. adult population to identify surviving family members and friends of victims of criminal homicide and alcohol-related vehicular homicide. A total of 9.3% of the national sample had lost a family member or friend to homicide. Immediate family survivors (n = 206) completed an interview assessing demographic characteristics and DSM-III-R criteria for homicide-related PTSD. The interview participation rate was 84%. Among immediate family survivors, 23.3% developed PTSD at some point in their lifetimes and 4.8% met full diagnostic for PTSD during the preceding six months. Survivors of criminal and vehicular homicide victims were equally likely to develop PTSD. Survivors who experienced the homicide during their childhood, adolescence or adulthood also showed equal likelihood of PTSD. Clinical implications of findings were discussed.

Homicide as a Risk Factor for PTSD Among Surviving Family Members

Few environmental stressors are more powerful than the homicide of a family member. Surviving family members of homicide victims face a debilitating array of experiences including the uncontrollable loss of a loved one, a shattered sense of security, overwhelming anxiety, repeated exposure to homicide-related stimuli, and dramatic disruption of daily routines. The impact of such a stressor is felt physiologically, cognitively, emotionally and socially. Masters, Friedman and Getzel (1988) observed, "Homicide inflicts massive injury upon the intrapsychic and interpersonal realities of the surviving kin of murder victims" (p.108). The severity of this traumatic stressor is undeniable.

Attempts to locate an appropriate conceptual framework for survivor stress responses first focused on grief theory (e.g., Bowlby, 1980) since grieving the loss of the victim was clearly a part of the psychological aftermath for survivors. However, studies of survivors yielded a symptom constellation which also included homicide-related intrusive recollections alternating with avoidance of such stimuli, physiological hyperarousal, emotional lability and/or numbing, and impairment of social functioning

(Amick-McMullan, Kilpatrick, Veronen & Smith, 1989; Bard, 1982; Bowman, 1980; Burgess, 1975; Doyle, 1980; Masters, Friedman & Getzel, 1988; Poussaint, 1984; Rinear, 1984; Rynearson, 1984; Stillman, 1986). Although elements of grieving were certainly observed among survivors, the entire spectrum of symptoms reported in these studies appeared more consistent with the diagnosis of Post-traumatic Stress Disorder (PTSD).

The existing literature on family survivors of criminal homicide victims consists of a modest collection of studies including the studies of adult survivors cited above and seven studies of child survivors (Bergen, 1958; Malmquist, 1986; Pruett, 1979; Pynoos & Eth, 1984, 1986; Schetky, 1978; Zeanah & Burk, 1984). The child studies focused primarily on children who witnessed a parental homicide. These reports provided clinical descriptions of a diversity of stress responses, falling generally into the phenomenology of PTSD (e.g. Malmquist, 1988; Pynoos & Eth, 1984). Underscoring the paucity of information available on children, Poussaint (1984) noted the "professional neglect" (p.8) of children traumatized by a familial homicide. Moreover, no studies have provided comparisons of children and adults with respect to traumatic symptomatology.

These early studies of criminal homicide survivors contributed substantially to the literature with their rich clinical descriptions of survivor reactions which served to alert mental health professionals to the traumatic impact of homicide on those surviving the direct victim. It appears reasonable to conclude preliminarily from this work that the traumatic stress of losing a family member to homicide places children and adults at risk for development of post-traumatic symptoms.

From a methodological perspective, this early work has been limited by lack of control groups, nonrepresentative samples, and with a few exceptions (e.g. Bard, 1982; Malmquist, 1986; Rinear, 1984; Stillman, 1986), by nonstandardized measurement. Although such methodological limitations are typical of an early stage in development of any field of inquiry, Garmezy (1986), in commenting on research in the area of childhood traumatic stress, exhorted researchers to strive for increased methodological rigor, including quasi-experimental designs, increased sample sizes, and standardized methods of assessment and diagnosis.

The present study sought to bridge some existing gaps in the literature by drawing a nationally representative sample to provide prevalence estimates of the number of American family survivors of homicide victims and to assess the extent to which

survivors are at risk for developing homicide-related PTSD. Although our random digit dial telephone survey contacted adults only, we asked subjects about familial homicides occurring at any point in their lifetime, thereby allowing comparisons of survivors who encountered the stressor during childhood, adolescence or adulthood. For comparative purposes, we also sampled survivors of both criminal homicide and alcohol-related vehicular homicide. In this report, we will address the following four central questions: 1) What proportion of the United States adult population has undergone the traumatic stress of losing a family member to homicide? 2) Are survivors at risk for developing homicide-related PTSD? 3) Is the risk of PTSD different for survivors of criminal homicide versus alcohol-related vehicular homicide? 4) Does a survivor's age at the time of the homicide affect their likelihood of developing PTSD?

Reflective of the infancy of this field, our study was largely exploratory. Our working hypotheses, therefore, were more impressionistic than firmly grounded in well-developed theory. Consistent with existing literature, we predicted that survivors would be likely to develop homicide-related PTSD. With respect to the question of the relative likelihood of developing PTSD between survivors of criminal homicide versus vehicular homicide, we

predicted that both stressors were of sufficient magnitude to result in an equal likelihood of PTSD among survivors. Supportive of this prediction is Bard's (1982) finding of PTSD across groups of survivors of criminal homicide, suicide and motor vehicle fatality victims. Lehman, Wortman, and Williams (1987), Shanfield and Swain (1984) and Harris-Lord (1986) have also documented severe traumatic stress reactions among family survivors of motor vehicle fatality victims.

Our prediction that survivors would be equally likely to develop PTSD whether the homicides occurred during their childhood, adolescence or adulthood related to Lifton and Olson's (1976) observation that, "...if the stress is great enough it can produce strikingly similar psychological disturbances in virtually everyone exposed to it" (p.16). Supportive of this perspective were the Terr (1979) and Ollendick and Hoffman (1982) reports of no significant age differences in symptoms reported among survivors of the Chowchilla kidnapping incident, and a disastrous flood, respectively.

Method

Design and Procedure

The study was conducted in two stages during a time span from July, 1987 to February, 1988. In Stage One, random digit

dialing telephone survey methodology was used to screen a large, nationally-representative sample of the non-institutionalized U.S. adult population (N = 12,500) to identify surviving family members and close friends of criminal homicide and alcohol-related vehicular homicide victims. The study design was retrospective in that it asked about homicides occurring anytime during the survivor's lifetime. The survey was conducted by Schulman, Ronca and Bucuvalas, Inc., a national survey research firm. The Stage One sample was weighted to ensure that it was fully representative of the population. This report will present Stage One national prevalence data.

In Stage Two, a sample of survivors and nonvictims identified during Stage One completed a 30 minute interview which assessed a variety of demographic and adjustment variables. For survivors, details of the homicide were assessed as was PTSD (DSM-III-R criteria, American Psychiatric Association, 1987). The interview response rate was excellent, with 84% of those contacted participating. For the purposes of this report, Stage Two demographic and PTSD data will be presented for immediate family members of criminal homicide victims (CHS; n = 115) and immediate family survivors of alcohol-related vehicular homicide victims (VHS; n = 91).

Subjects

In Stage One, the screening phase, potential subjects were men and women, aged 18 or older, who resided in the United States or the District of Columbia. Those who resided in institutional settings with telephones routed through a main switchboard (e.g., prisons, hospitals, religious or educational institutions) or non-English speaking persons were not potential subjects. A total of 12,500 men and women were screened in Stage One. Demographically, this sample was representative of the U.S. adult population and thereby provided the basis for national prevalence estimates.

The Stage Two interview subjects were 206 immediate family survivors (n = 115 CHS; n = 91 VHS). Table One displays survivor demographic data. No significant differences emerged between

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Insert Table 1 about here

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survivor groups on age, marital status, gender, income, or employment status. A significant demographic difference emerged on race, $X^2(4, N = 206) = 13.42$, $p<.01$, with a higher proportion of criminal homicide survivors being black (CHS: 29.6% black; VHS: 9.9% black) and a higher proportion of vehicular homicide survivors being white (VHS: 82.4% white; CHS: 66.1% white).

Significant demographic differences also emerged on education, $X^2(4, n = 206) = 9.54, p<.05$, with criminal homicide survivors being less likely to have completed high school (CHS: 29.5% achieved less than high school; VHS = 13.2% less than high school). In general, survivors tended to be in their early forties, married, two thirds female/one third male, earning between $10,000 and $50,000 yearly and more than half were employed full time.

Definitions

Criminal homicide was defined on the basis that a family member or close friend was killed by another person under circumstances not involving military combat, not perceived by them to have been an accident, and not involving a motor vehicle. Alcohol-related vehicular homicide was defined based on report of a family member or close friend killed in a crash involving a driver that they perceived to have been impaired by alcohol and/or drugs. Immediate family members were defined as parents, children, spouses, siblings, grandparents or grandchildren of homicide victims.

Results

Prevalence of Homicide Survivors

Based on Stage One screening data, Table 2 displays weighted prevalence estimates of adult survivors of homicide victims. Of

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the respondents surveyed, 2.8% had lost an immediate family member to criminal homicide (1.6%) or to alcohol-related vehicular homicide (1.2%). Another 6.5% of the screened sample had lost other relatives (3.7%) or close friends (2.7%) to homicide. In all, 9.3% of adults surveyed were survivors of homicide victims.

From these prevalence figures and a U.S. population estimate of 176.3 million adults, we would estimate that five million adults have lost immediate family members to homicide, another 6.6 million have lost other relatives, and yet another 4.8 million have lost close friends, for a total of 16.4 million Americans touched by the homicide of a family member or friend.

Prevalence of Homicide-Related PTSD

Stage Two interview data showed 23.3% of all immediate family survivors, or more than one in five, developed homicide-related PTSD at some point in their lifetime following the

homicide (referred to as lifetime PTSD). Table 3 displays the percentage of survivors meeting PTSD diagnostic criteria. Breaking PTSD down by major criteria, we found even higher

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proportions of the sample meeting each criterion: 40.7% reported intrusions, 40.9% reported avoidance, and 50.2% reported hyperarousal at some point in their lifetime following the homicide.

With respect to current homicide-related PTSD, which was defined by symptoms experienced within the preceding six months, 4.8% of all immediate family survivors met full diagnostic criteria. As was the case for lifetime PTSD, we found even higher proportions of survivors meeting single criteria: 15.0% reported intrusions, 10.4% reported avoidance, and 22.3% reported hyperarousal.

As predicted, survivors of criminal homicide victims and vehicular homicide victims were not significantly different in terms of developing either lifetime PTSD ($X^2(1, \underline{N} = 206) = 1.56$, NS) or current PTSD ($X^2(1, \underline{N} = 206) = 0.00$, NS). Nineteen percent

of criminal survivors and 27.5% of vehicular survivors developed lifetime PTSD. For current PTSD, 5.2% of criminal survivors and 4.4% of vehicular survivors met full diagnostic criteria.

Thus, we found that development of symptoms of PTSD was a likely outcome for as many as 50% of immediate family survivors and development of the full disorder was likely for more than one in five (23.3%). Based on the U.S. population figure of 176.3 million adults, we estimate that more than one million adults have experienced full PTSD at some point following the homicide of an immediate family member and approximately 250 thousand have the full disorder currently. Many more suffer from some symptoms of PTSD but do not meet full diagnostic criteria.

Furthermore, preliminary analyses of the association between PTSD and other mental health factors suggest that those survivors suffering from PTSD (contrasted with those who did not develop PTSD) were at greater risk for suicidal ideation ($X^2(1, N = 206) = 12.20, p<.001$) and they tended to be more likely to require therapy ($X^2(1, N = 206) = 21.47, p<.0005$).

Survivor Age at the Time of the Homicide and PTSD

For comparisons of survivor age at the time of the homicide with likelihood of developing PTSD, we grouped survivors into three age categories: childhood (up to 12 years), adolescence

(13-17 years), and adulthood (18 years and older). Since homicide survivor groups (CHS vs. VHS) were not significantly different in terms of developing PTSD, the two groups were combined for these chi-square analyses. The total number of subjects for this analysis (n = 189) reflects some missing or inaccurate data with respect to variables used to compute age at the time of the homicide. Table 4 displays PTSD diagnostic criteria by age at the time of the homicide. As predicted, the likelihood of developing

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Insert Table 4 about here

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homicide-related PTSD at some point following the homicide was not related to age at the time of the homicide, $X^2(2, N = 189) = 1.08$, NS. Similarly, the likelihood of current PTSD was also unrelated to age at the time of the homicide, $X^2(2, N = 189) = .24$, NS.

For purposes of exploring the possibility that reporting of symptoms of PTSD might have been related to the amount of time since the homicide, number of PTSD symptoms reported was correlated with time elapsed since the homicide. Although the homicides occurred an average of 16.62 years ago (SD = 14.74), statistically significant relationships were not found between

time since the homicide and total number of PTSD symptoms reported for current PTSD (r = -.07, p<.35) or lifetime PTSD (r = -.13, p<.07).

Discussion

A major contribution of this study was its nationally representative sample which yielded the first known prevalence estimates of the number of Americans indirectly, yet quite significantly, victimized by homicide. The use of DSM-III-R diagnostic criteria also provided a consistent framework by which to document symptoms and test clinical impressions that survivors suffer from PTSD. However, in tandem with these contributions were certain inherent limitations.

One such limitation was a lack of specific information related to the symptom patterns and coping mechanisms of individuals within the broad diagnostic category of PTSD. Those experienced in assessing and treating PTSD will immediately recognize that within this single diagnostic category reside a wide array of idiosyncratic presentations. Particularly among child trauma survivors, several experts have pointed out that while most fit the general phenomenology of PTSD, there exists great diversity in individual manifestations of traumatic stress (Malmquist, 1986; Pynoos & Eth, 1984, 1986). Coping strategies

available to children are also critically affected by developmental factors (Mowbray, 1988). Thus, we can say with some confidence that the experience of losing a family member to homicide places an individual at risk for developing PTSD, but a great deal of work is needed to clarify the more subtle variations of symptoms and coping responses. Further work is also needed to tease out variables related to vulnerability to developing PTSD. Although 23.3% of the sample developed the disorder, the majority were PTSD resistant by virtue of factors which need to be defined and understood. Such work would have important implications for prevention and intervention with survivors.

A second major limitation of this study was its retrospective design and the associated risk of distortion, forgetting, etc., over time. Without a doubt, a longitudinal study of survivors would produce less confounded data; however, time and economic constraints did not permit such a study. It is unlikely that people would forget or distort the actual occurrence of a familial homicide. However, we were more concerned with possible distortions related to stress responses reported. Since the overall average time elapsed since the homicide was almost 17 years, the risk of forgetting, distorting or underreporting symptoms seemed high. The data, however, suggested this was not

the case. We found no statistically significant relationship between time since the homicide and total number of PTSD symptoms reported for current PTSD or for lifetime PTSD. Although the negative directionality of the correlations suggested some eroding of symptoms reported over time, the relationship between time and number of symptoms endorsed failed to reach statistical significance. Thus, we temper our treatment of these results with some caution regarding possible underreporting of symptoms among those survivors for whom a longer time span had elapsed since the homicide, but this bias appears to be minimal.

Having acknowledged these limitations, we will highlight some additional points deserving special emphasis. First, a substantial number of Americans, approximately 16.4 million, had become the indirect victims of homicide as of early 1988. Five million had lost immediate family members. This indirect victimization carried with it the very significant risk that more than one in five immediate family survivors would develop homicide-related PTSD. This risk of PTSD was present despite the mode of the homicide (criminal or vehicular) or the age of the survivor (child, adolescent, or adult) at the time of the homicide. Moreover, preliminary analyses also suggested that those survivors suffering from PTSD were at greater risk for

suicidal ideation and tended to be more likely to require therapy than those who did not develop PTSD.

One striking implication of these results is that an individual does not have to be a direct victim of a trauma, or even witness the trauma to develop PTSD. Only 6% of survivors of criminal homicide victims and 11% of survivors of vehicular homicide victims witnessed the homicide, yet 19% and 27% of these two groups, respectively, developed homicide-related PTSD. A similar process has been observed among partners of sexual assault victims (Veronen, Saunders, & Resnick, 1988) and parents of kidnapping victims (Terr, 1979) who developed post-traumatic symptoms without being directly victimized themselves or witnessing the crimes. The development of PTSD among indirect victims is intriguing from a theoretical perspective and appears to involve a vicarious conditioning mechanism. Although a discussion of possible theoretical mechanisms is beyond the scope of this report, please see Amick-McMullan, Kilpatrick and Veronen (1989) for a more thorough behavioral analysis.

From a clinical perspective, we urge clinicians to be alert to the possibility of PTSD among family members of trauma victims. As noted earlier, children are at particular risk for being neglected during a family crisis such as the homicide of a member.

Perhaps less well equipped to cope, children are particularly vulnerable during such a disaster and they are dependent on the sensitivity of adults to needs they may be unable to express or manage.

Finally, these results confirm the need for specialized mental health care for survivors of homicide victims. Clinicians are in an important position for providing much needed education and support to survivors. It is often very helpful for survivors to know their reactions are similar to those of other people who have also experienced traumatic stress. By learning to predict and cope with exacerbations of symptoms by anniversaries, reminders of their lost loved one, and very typically by ongoing criminal justice proceedings, survivors regain a sense of self-efficacy and security. Although no treatment outcome studies have been done, our clinical impression is that a treatment package combining education, support, and development of specific coping skills is most effective (for information on Stress Inoculation for survivors, see Amick-McMullan, Kilpatrick & Veronen, 1989).

In working with this population, the clinician must be flexible in approach and prepared to deal with intense and vacillating affect. To the extent that the clinician is able to effectively cope with the full range of survivor reactions, he/she

models the very coping skills needed by the survivor. The value of the supportive aspect of the treatment should not be underestimated since the clinician is often the primary source of support within a fragmented and strained social support network.

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Table 1

Demographic Characteristics of Homicide Survivor Groups

	Criminal Homicide n = 115	Vehicular Homicide n = 91
Mean Age	44.19 (SD = 15.19)	42.60 (SD = 15.64)
Marital Status		
Married	57.4%	74.7%
Widowed	13.0%	7.7%
Divorced	12.2%	5.5%
Separated	2.6%	3.3%
Never Married	14.8%	1.1%
Gender		
Male	32.2%	30.1%
Female	67.8%	69.2%

Table 1 (continued)

Racial Status		
Native American	2.6%	3.3%
Black	29.6%	9.9%
White	66.1%	82.4%
Hispanic	0.0%	1.1%
Other	0.9%	0.0%
Household Income		
Less than $10,000	17.4%	13.2%
$10,000 to $25,000	33.9%	26.4%
$25,000 to $50,000	30.5%	44.0%
More than $50,000	12.2%	6.6%
Education		
Less than high school	29.5%	13.2%
High school graduate	28.7%	37.4%
Attended college	18.3%	27.5%
College graduate	16.5%	14.3%
Post graduate	7.0%	5.5%

Table 1 (continued)

Employment		
Full time	54.8%	54.9%
Part time	9.6%	7.7%
Seeking employment	3.5%	4.4%
Retired	13.0%	13.2%
Disabled	2.6%	1.1%
Unemployed	0.0%	1.1%
Student	4.3%	3.3%
Housewife	10.4%	13.2%

Table 2

National Prevalence Estimates of

Adult Survivors of Homicide Victims

Survivor's Relationship to Victim	Type of Homicide	Percent having Experienced	Estimated Number of US Adult Survivors
Immediate Family Member	Criminal	1.6%	2.8 million
	Alcohol-Related Vehicular	1.2%	2.2 million
	Total	2.8%	5.0 million
Other Relative	Criminal	1.5%	2.6 million
	Alcohol-Related Vehicular	2.2%	4.0 million
	Total	3.7%	6.6 million

Table 2 (continued)

Close Friend	Criminal	0.7%	1.3 million
	Alcohol-Related Vehicular	2.0%	3.5 million
	Total	2.7%	4.8 million
Total		9.3%	16.4 million

Table 3

Percent of Homicide Survivors Meeting Diagnostic Criteria for PTSD

Lifetime PTSD

Criteria	Criminal Homicide	Vehicular Homicide	Both Groups
Intrusions	37.4	44.0	40.7
Avoidance	40.0	41.8	40.9
Arousal	47.8	52.7	50.2
All Criteria	19.1	27.5	23.3
Total N	115	91	206

Current PTSD

Criteria	Criminal Homicide	Vehicular Homicide	Both Groups
Intrusions	15.7	14.3	15.0
Avoidance	13.0	7.7	10.4
Arousal	22.6	22.0	22.3
All Criteria	5.2	4.4	4.8
Total N	115	91	206

Table 4

Percent of Each Survivor Age Group Meeting PTSD Diagnostic Criteria

Lifetime PTSD

	Childhood (0-12 yrs)	Adolescence (13-17 yrs)	Adulthood (≥18 yrs)
PTSD Criteria			
Intrusions	25%	30%	45%
Avoidance	46%	45%	40%
Arousal	68%	45%	48%
All Criteria	17%	20%	26%
Total N	28	20	141

Current PTSD

	Childhood	Adolescence	Adulthood
PTSD Criteria			
Intrusions	14%	10%	16%
Avoidance	14%	10%	11%
Arousal	43%	15%	20%
All Criteria	3%	5%	6%
Total N	28	20	141