Mental Disorder and Violence: An Examination of Stressful Life Events and Impaired Social Support

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Research on the relationship between mental disorder and violence has focused largely on the effects of clinical characteristics, such as treatment adherence and psychotic symptoms, with little attention to the potentially important role of stressful life events and impaired social support. Yet, stressful life events and impaired social support have been found to be significantly associated with the onset and course of mental disorder and with the occurrence of violence. This raises the question: Do stressful life events and impaired social support contribute to the association between mental disorder and violence? The current study addresses this question using general population data from the Durham site of the National Institute of Mental Health’s Epidemiological Catchment Area Surveys (N = 3,438). Results indicate that when stressful life events and impaired social support are controlled, the association between mental disorder and violence is substantially reduced. Implications for future research on the relationship between mental disorder and violence are discussed.

After over a decade of research, considerable evidence has accrued suggesting that people with mental disorders are significantly more likely to engage in violence than people without mental disorders (Arseneault et al. 2000; Monahan 1992; Swanson et al. 1990), particularly when their disorders involve paranoid psychotic symptoms (Link, Andrews, and Cullen 1992; Link, Monahan, Stueve, and Cullen 1999; Swanson et al. 1996) or when they co-occur with substance abuse (Steadman et al. 1998). The link between mental disorder and violence has been observed across a variety of sampling strategies, outcome measures, and mental disorder measures, and with controls for a wide range of sociodemographic characteristics (for reviews, see Link and Stueve 1995; Monahan et al. 2002; Mulvey 1994). However, despite the robustness of this association, little is understood about why mental disorder and violence are linked (Hiday 1995, 1997; Mulvey 1994; Silver 2000).

Most prior explanations of the relationship between mental disorder and violence emphasize clinical characteristics, such as paranoid psychotic symptoms (Link, Monahan, Stueve, and Cullen 1999; Link and Stueve 1994), substance abuse disorders (Steadman et al. 1998), and treatment nonadherence (Swanson et al. 1996; Swartz et al. 1998). These explanations are rooted in the assumption that the causes of violence by mentally disordered people are linked fundamentally to the mental disorder itself (Monahan 1992). The most prominent example of such theorizing is found in the work of Bruce Link and Ann Stueve (1994) and Bruce Link, John Monahan, Ann Stueve, and Francis T. Cullen (1999). Using epidemiological data from the United States and Israel, Link and Stueve (1994) and Link, Monahan, Stueve,
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and Cullen (1999) found that the relationship between mental disorder and violence was due primarily to the presence of paranoid psychotic symptoms (or what they termed “threat/control-override [TCO] symptoms”), symptoms most commonly observed among patients with schizophrenia. According to Link and Stueve (1994) and Link, Monahan, Stueve, and Cullen (1999), TCO symptoms consist of delusional beliefs that produce feelings of personal threat and involve intrusion of thoughts that override self-control. Link and Stueve (1994) and Link, Monahan, Stueve, and Cullen (1999) argued that whether or not these beliefs are grounded in reality, they influence the individual’s definition of the situation in such a way as to increase the likelihood of violence. In other words, Link and Stueve’s (1994) and Link, Monahan, Stueve, and Cullen’s (1999) research suggests that mentally disordered people engage in violence because violence is a reasonable response to the distorted realities they perceive as a result of their mental disorders.

Although theories that focus on clinical characteristics, such as delusions, may be of practical value to clinicians with responsibility for managing their patients’ behavior in the community, such theories fall short of addressing the more basic question of what causes such symptoms to emerge in the first place and what relationship those causal factors have to the occurrence of violent behavior. In short, the association between a particular set of clinical symptoms and violence does not preclude the possibility that both may be rooted in social factors originating external to the individual’s mental state. To address this possibility, research in this area must move beyond a narrow focus on clinical characteristics toward a perspective that takes into account the social and interpersonal contexts within which both mental disorder and violence occur. The current study attempts to develop and test such a perspective.

Specifically, we test a model of the relationship between mental disorder and violence that draws on the social stress literatures in mental health and criminology (Agnew 1992; Aneshensel 1992; Cullen 1994; Pearlin 1999; Thoits 1995). These literatures focus on the role that stressful life events and social support play in producing emotional and behavioral outcomes for individuals. Social stress researchers in mental health have long observed that stressful life events and social support contribute to the onset and course of mental disorder (Aneshensel 1992; Lin, Ye, and Ensel 1999; Thoits 1995; Turner and Lloyd 1999), and a substantial body of criminological research and theory suggests that stressful life events and social support are important links in the causal pathways that produce violence (Agnew 1992; Capowich, Mazerolle, and Piquero 2001; Colvin, Cullen, and Vander Ven 2002; Cullen 1994; Hirschi 1969). Together, these literatures suggest that mental disorder and violence may each be rooted in the stress and support contexts within which individuals live.

Against this backdrop, the current study examines what happens to the relationship between mental disorder and violence when stressful life events and impaired social support are taken into account, using cross-sectional data from the Durham site of the National Institute of Mental Health’s Epidemiological Catchment Area Surveys (N = 3,438). We hypothesize that the relationship between mental disorder and violence will be reduced when stressful life events and social support are taken into account because of the influence that stressful life events and social support have on the occurrence of both violence and mental disorder.

Stress, Support, and Mental Disorder

Sociologists of mental health consistently have found that stressful life events raise the risk of mental disorder (for reviews, see Aneshensel 1992; Dohrenwend 2000; Pearlin 1989, 1999; Thoits 1995). According to Bruce P. Dohrenwend (2000), “the greater the uncontrollable negative changes in the ongoing situation . . . following the occurrence of a negative event, the greater the likelihood that disorder will develop” (p. 12). While mental health problems can cause life stress, the causal link can also operate in the opposite direction, from
life stress to mental health problems (Turner, Wheaton, and Lloyd 1995; for a detailed discussion, see Thoits 1983). The reverse causal relationship of stressful events leading to mental disorder becomes particularly apparent when life stress is measured using acute life events. Acute life events are not typically affected by individual behavior or psychological functioning (for reviews, see Aneshensel 1992; Thoits 1995). In contrast to acute life events, chronic stressors are persistent experiences that require readjustments over a prolonged period of time (e.g., ongoing marital or legal problems). Chronic stressors, thus, are more likely than acute events to be affected by an individual’s psychological functioning or behavior (for a detailed discussion, see Aneshensel 1992).

Therefore, in examining the contribution of stress to the association between mental disorder and violence, the current study uses an acute life events approach. Methodologically, this approach increases our confidence that any observed association between life stress and mental disorder is due to the effect of life stress on mental disorder, rather than the reverse (the effect of mental disorder on life stress). However, focusing on acute life events is not without its limits. According to Carol S. Aneshensel (1992), “the expedient solution of restricting measures to acute events appears methodologically rigorous, but sacrifices many interesting social elements within the universe of stress,” (p. 22) a point we return to later in the discussion.

In addition to stressful life events, sociologists of mental health have also found a consistent relationship between social support and mental disorder (for reviews, see Anshensel 1992; Thoits 1995). Nan Lin, Alfred Dean, and Walter Enzel (1986) define social support as the “perceived or actual instrumental and/or expressive provisions supplied by the community, social networks, and confiding partners” (p. 18). This definition suggests two major aspects of social support. First, the objective delivery of support is distinct from the perception of support. People do not receive support mechanically, but interpret, appraise, and anticipate support in the context of social situations (House 1981; Matsueda 1992; Turner and Lloyd 1999; Vaux 1988). Second, social support consists of two broad types: instrumental and expressive. Instrumental support involves the relationship as a means to an end in which the individuals involved seek out information, advice, guidance, material aid, or financial assistance. Expressive support involves the relationship as an end in itself, in which the individuals involved seek out intimacy by sharing love and affection, venting frustrations, and mutually affirming each other’s worth and dignity (Cullen 1994; Turner and Lloyd 1999). Although various dimensions of social support have been studied, the bulk of the evidence suggests that perceived emotional support is most important in relation to psychological well-being (Cohen and Wills 1985; Turner and Lloyd 1999; for reviews, see Aneshensel 1992; Thoits 1995). Thus, the current study measures social support based on individual perceptions of, and satisfaction with, the degree of support received from family, friends, and other known persons.

**Stress, Support, and Violence**

The social stress model in mental health conceives of stressful life events and social support as exogenous factors: stressful life events increase psychological disorder, social support decreases it. In this section, we review recent literature from the field of criminology that provides a sociological basis for expecting a similar relationship among stress, support, and violent behavior (Agnew 1992; Colvin et al. 2002; Cullen 1994; Hirschi 1969).

The assertion that stressful life events increase the likelihood of violence corresponds to arguments put forth by Robert Agnew (1992). In his theory of general strain, Agnew (1992) argues that individuals who are stressed (i.e., those who experience events or situations in which positive or valued stimuli are removed or threatened, or negative stimuli are presented) are more likely to experience negative affective states such as anger, fear, and frustration. These affective states, in turn, create an internal pressure for what Agnew (1992) calls “corrective action.” This pressure is most likely to lead to violent behavior when violence is
viewed as an alternative means to goal achievement, or as a form of retribution aimed at punishing those believed responsible for the strained situation. Consistent with Agnew’s perspective, Catalano and associates (1993), using data from the Epidemiological Catchment Area (ECA) survey, found economic hardship in the form of job loss to be an important cause of interpersonal violence among the general public. Moreover, a substantial amount of literature in sociology and psychology suggests that stressful life events affect a range of negative outcomes, including drug use, juvenile delinquency, and aggressiveness (for a review, see Colvin et al. 2002).  To date, however, no study has examined whether stressful life events contribute to the association between mental disorder and violence.

Although it is difficult to pinpoint the causal direction between life stress and violence using cross-sectional data, our reliance on an inventory of acute life events to measure life stress helps to minimize the risk that our measure of stress is an outgrowth of respondents’ violent behavior. Nonetheless, to further minimize the risk of confounding our violence and stress measures, stress items measuring whether the respondent had been “divorced” or “separated” from a spouse or partner, or whether the respondent or a family member had “any legal problems,” were eliminated from our life stress scale because of the reasonable possibility that such experiences may have been brought on by respondent violence.

In addition to stressful life events, the literature on social stress and crime emphasizes the importance of social support as a key variable. Drawing on Travis Hirschi’s (1969) social bond theory, Francis T. Cullen (1994) argues that “the more social support in a person’s social network, the less crime will occur” (p. 540). This is because social support is an important precondition for the provision of effective social controls. According to Cullen (1994), socially supportive relationships foster social control by functioning as a stock of social capital (Coleman 1988) that the individual must protect in order to retain. Specifically, having a stake in supportive relationships may decrease the likelihood that disputes with others will escalate to violence. To behave violently is to risk the loss of valued support. This conceptualization of the relationship between social support and social control is directly related to Hirschi’s (1969) bond of attachment and is consistent with Albert J. Hunter’s (1985) notion of “private” control, in which the allocation or threatened withdrawal of sentiment, support, and mutual esteem are key elements influencing the likelihood of deviant behavior (for a detailed discussion, see Bursik and Grasmick 1993).

Individuals involved in supportive relationships are likely to experience a greater degree of social control over their behavior than those who are not involved in such relationships (Cullen 1994; Hirschi 1969; Hunter 1985). Relatedly, individuals with weak attachments to others are expected to experience fewer social controls over their behavior, thereby enabling them to engage in greater amounts of deviance, including violence. To the extent that a lack of social support raises the risk of both mental disorder and violence, we expect that controlling for social support will reduce the observed association between mental disorder and violence.

In sum, this study tests whether the relationship between mental disorder and violence is affected by exposure to stressful life events and impaired social support. Stressful life events are hypothesized to lead to violence by increasing the prevalence of blocked goals and thereby producing corrective actions that may include violence (Agnew 1992). Social support is hypothesized to reduce violence by facilitating informal social control and stakes in social

1. For example, a recent panel study of 939 Boston high school students found that stressful life events increased students’ levels of anger and hostility, which, in turn, increased their propensity for aggressive behavior (Aseltine et al. 2000; see also Hoffman and Cerbone 1999).

2. Since the late 1970s, only two published studies have attempted to examine the relationship between stress and violence among mentally disordered people, both of which found a significant positive association (Levinson and Ramsey 1979; Steadman and Ribner 1982). In neither study, however, was the effect of life stress on violence examined among a non-mentally disordered comparison sample. Moreover, neither study measured social support. Thus, the extent to which the relationship between mental disorder and violence is due to prior levels of life stress and social support has not been examined.
capital (Cullen 1994; Hirschi 1969; Hunter 1985). These hypotheses are tested in a series of logistic regression equations in which we examine the magnitude of the association between mental disorder and violence before and after controlling for stressful life events and social support. Our expectation is that the relationship between mental disorder and violence will be substantially reduced when stressful life events and social support are taken into account, indicating that both mental disorder and violence are rooted in the stress and support contexts within which individuals live.

Data, Methods, and Statistical Procedures

Sample

Between 1980 and 1983, the National Institute of Mental Health sponsored a series of representative, adult household surveys in New Haven, Baltimore, St. Louis, Los Angeles, and Durham to examine the prevalence and demographic distribution of diagnosable psychiatric disorders (treated and untreated) in the general population (Robins and Regier 1991). At each site, between 3,000 and 5,000 household residents were interviewed. All interviews were conducted in the field by trained lay-interviewers. Interviews took approximately 60 to 90 minutes to complete. Although not intended for this purpose, the ECA data were subsequently used by Jeffrey Swanson (1994) and Swanson and associates (1990) to provide the first-ever large sample estimates of the prevalence of violent behavior among people with and without diagnosable mental disorders in the general population.

The current study uses data from the Durham site of the ECA project (N = 3,438), where, in addition to measures of mental disorder and violence, measures of stressful life events and social support also were gathered (Landerman et al. 1989). This study focuses on the Durham site because Durham was the only ECA site in which stressful life events and social support data were gathered in addition to the standard research protocol that measured mental disorders. The addition of the stress and support data provides us with the unique opportunity to examine the contribution of stressful life events and social support to the association between mental disorder and violence. The Durham site encompassed a five-county area of north central North Carolina consisting of one urban county (Durham) and four contiguous rural counties (Vance, Franklin, Granville, and Warren). The Durham Catchment Area had a population of 269,863 in 1980, and contained a diverse population, including some very poor communities as well as communities inhabited largely by individuals working in major research institutions in the Research Triangle area. The response rate at the Durham site was 79 percent. The sex and age distributions of the Durham sample were highly comparable to that of the U.S. general population in 1980; however, the Durham sample contained a higher proportion of African Americans than the U.S. general population in 1980 (36.4 percent versus 10.4 percent) and a lower proportion of whites (63.0 percent versus 84.1 percent). Thus, all of our multivariate analyses are conducted with statistical controls for race (and other demographic variables).

Measures

Violence. Five items from the ECA survey instrument were used to measure violent behavior within the past year:

1. Have you been in more than one fight that came to swapping blows, other than fights with your husband/wife/partner?
2. Have you used a weapon like a stick, knife, or gun in a fight?
3. Have you gotten into physical fights while drinking?
4. Did you hit or throw things at your wife/husband/partner? If so, were you the one who threw things first, regardless of who started the argument?
5. Have you spanked or hit a child, (yours or anyone else’s) hard enough so that he or she had bruises or had to stay in bed or see a doctor?

Although the selected items cover a wide range of assaultive behavior, they overlap considerably and do not enable the severity or frequency of specific violent acts to be coded. Moreover, because only 3.2 percent of the sample answered affirmatively to at least one of these questions (the most frequent type of violence was fighting, followed by partner violence and use of a weapon), the violence measure was coded as a dichotomy where “1” includes subjects who committed at least one violent act in the past year and “0” includes those who committed no violent acts in the past year (Swanson et al. 1994; Swanson et al. 1996; Swanson et al. 1990). In addition, because the violence measure provides people in romantic relationships an additional opportunity to score as violent, all of the analyses reported below were conducted controlling for relationship status (e.g., whether or not the respondent was living with a spouse or partner).

Mental Disorder: Diagnostic Groupings. The core interview used in the ECA project was the Diagnostic Interview Schedule (DIS) (Helzer and Robbins 1988; Robins et al. 1981), a structured, self-report instrument consisting of a lengthy series of preset questions with structured follow-up probing to assess the presence of psychiatric symptoms among adult respondents. The DIS was designed to enable trained lay-interviewers to assess DSM-III diagnostic criteria among the general population. Following Swanson and associates (1990), respondents were counted as possessing a major mental disorder if they met the lifetime criteria for a given disorder and reported that symptoms of the disorder were present during the one-year period preceding the research interview. Individuals with major mental disorders were grouped into two broad categories: those with a major mental disorder only, including schizophrenia or major affective disorders, who did not also have a substance abuse disorder (n = 97, 2.8 percent of the total sample; hereafter referred to as major mental disorder); and those with a substance abuse disorder, regardless of whether they also had a major mental disorder (n = 193, 5.6 percent of the total sample). The Durham data contained too few cases with both a major mental disorder and a substance abuse disorder (n = 31, less than 0.9 percent of the total sample) to justify analyzing them separately.

In addition to major mental disorders, the current study also identifies cases with less severe disorders, including phobias and somatic, panic, and eating disorders. Although prior research has not found these disorders to be associated with violence, separating out these cases allows us to make more valid comparisons between groups with major mental disorders and those with no mental disorder. A total of 461 cases (13.4 percent of the sample) scored as having at least one of these less severe forms of mental disorder.

Stressful Life Events. Respondents were asked to report on 19 different stressful life events that may have occurred during the year prior to the interview (see Appendix A). The questions focused on changes in respondents’ health, family and living situations, work, and finances. Respondents also were asked whether each event had a positive, negative, or neutral effect on their lives. The social stress literature suggests that stress is less related to the mere occurrence of life events than to the degree to which those events are experienced as unwanted or negative (Aneshensel 1992; Pearlin 1999). Thus, the stressful life events measure used here consists of a sum of the number of life events that respondents experienced as negative. As mentioned earlier, items measuring whether the respondent had been “divorced” or “separated” from a spouse or partner, or whether the respondent or a family member had “any legal problems,” were omitted from the scale so as not to confound the violence measure.
The distribution of stressful life events was skewed: almost two-thirds of the sample (63.8 percent) reported no stressful life events, and 22.3 percent reported only a single event. The maximum number of events was 6 (reported by only one subject); the next highest number was 5 (reported by 11 subjects). Because only 12 subjects reported more than 4 events, the stressful life events measure was recoded so that subjects reporting four or more events were given a value of “4”.

Social Support. Social support was measured using the Duke Social Support Scale, a 35-item instrument developed and standardized by the Duke Epidemiological Catchment Area project (Landerman et al. 1989). Principal components factor analyses produced 5 internally consistent social support indices: satisfaction with social support (4 items), perceived social support (7 items), frequency of social interaction (4 items), size of social network (4 items), and instrumental support (13 items). The factor solution explained 82 percent of the variation among the items; Cronbach alpha for the indices ranged between 0.7 and 0.8. As suggested above, previous research indicates that subjective perceptions of social support bear the strongest relationship to psychological disorder (Cohen and Wills 1985; Turner and Lloyd 1999). Thus, the satisfaction and perceived support indices were selected for the analyses in this article (in fact, these were the only social support indices to show a significant bivariate association with the violence measure). These items are shown in Appendix B. Because most subjects reported adequate to high levels of social support and because of the high correlation between the two indices (Pearson $r = .68$), the indices were combined into a scale coded “1” for individuals with extremely low scores (i.e., in the lowest quartile) on one of the indices (16.9 percent of the total sample), and 2 for individuals with extremely low scores (i.e., lowest quartile) on both indices (11.7 percent of sample). All other cases were scored as “0”. This measure is interpreted as an indicator of impaired social support.

Demographic Controls. Demographic characteristics were measured as follows: gender is a dichotomous variable (1 = male; 0 = female); age is the number of years since birth; race is a dichotomous variable coded “1” for African Americans, with white and other race/ethnicities (i.e., mostly Asian and Native American) as the reference category. Marital status is a dichotomous variable coded “1” for respondents living with a spouse or partner at the time of the interview. Following a procedure developed by Charles B. Nam and Mary G. Powers (1965), socioeconomic status was measured using a census-based ranking that combined a respondent’s education, occupational status, and household income. Using data from the Public Use Sample of the 1980 census, occupations were ranked according to mean percentiles on educational level and income for all incumbents to a given occupational title. In addition to these occupational ranks, percentile scores also were formed for each respondent’s education and for household income (and personal income when available), using data from the 1980 U.S. Census Characteristics of the Population. The socioeconomic status measure was then formed by averaging education, occupation, and household income percentiles (Holzer et al. 1986). Table 1 provides descriptive statistics for all of the variables included in this study.

Statistical Model and Data Analysis

Two statistical issues must be considered when analyzing the ECA data: weighting and clustering. Sample weights were developed by the ECA research team to compensate for differing probabilities of selection and refusal among respondents (Leaf, Myers, and McEvoy 1991). Initial sample weights were constructed for each respondent based on sample selection probabilities. An additional post-stratification adjustment was added to improve the fit of the sample to the 1980 U.S. Census. These weights are incorporated into all of the analyses reported below. In addition, because the ECA data were gathered using a multi-stage cluster design (i.e., respondents within households within neighborhoods), special survey software is
required to ensure that the standard errors produced in statistical analyses are adjusted to approximate the assumptions of simple random sampling. Therefore, all of our analyses are conducted using the software package STATA, which is specially designed to produce robust standard errors while, at the same time, applying the recommended sample selection and refusal weights.

Our analysis proceeds in two stages. First, we examine bivariate relationships between the key constructs of our model, violence, stressful life events, impaired social support, and mental disorder. Second, we use multivariate logistic regression to examine what happens to the relationship between mental disorder and violence after we control for stressful life events and impaired social support.

Results

Bivariate Analyses

Table 2 shows a breakdown of violence, life stress, and social support impairment for each category of mental disorder. Consistent with prior research (Swanson et al. 1990), individuals with a substance abuse disorder showed the highest rates of violence (19.2 percent), followed by individuals with a major mental disorder (8.3 percent), followed, in turn, by

### Table 1 • Descriptive Statistics (N = 3,438)

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<th>Mean</th>
<th>Standard Deviation</th>
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<tr>
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<td>0.028</td>
<td>0.165</td>
</tr>
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<td>Any substance abuse disorder</td>
<td>0.00–1.00</td>
<td>0.056</td>
<td>0.230</td>
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<tr>
<td>Any less serious disorders</td>
<td>0.00–1.00</td>
<td>0.134</td>
<td>0.341</td>
</tr>
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<td>0.554</td>
<td>0.874</td>
</tr>
<tr>
<td>Impaired social support</td>
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<td>0.689</td>
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<td>Living with spouse or partner</td>
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*p* \( < .001 \) (chi square test, df = 3).
individuals with less serious disorders (2.2 percent) and no disorders (2.1 percent). Also consistent with prior research, individuals with mental disorders were significantly more likely to have experienced stressful life events in the past year than those with no mental disorders, and significantly more likely to have experienced impaired social support (Aneshensel 1992).

**Multivariate Analyses**

What happens to the association between mental disorder and violence when stressful life events and impaired social support are statistically controlled? This question is addressed in Table 3, which shows unstandardized coefficients and odds ratios from a series of logistic regression equations predicting violence. (The unstandardized coefficients indicate the change in the log odds of violence that is associated with a one-unit increase in an independent variable. The odds ratios indicate the multiplicative change in the odds of violence that is associated with a one unit increase an independent variable.)

As shown in Model 1 of Table 3, mental disorder and violence are significantly related, a result that was shown previously in Table 2. Specifically, the odds of engaging in violence was 4.41 times greater for people with major mental disorder than for those without mental disorder, and the odds of engaging in violence was 11.16 times greater for people with any substance abuse disorder than for those without mental disorder. Model 2 introduces demographic controls to the equation. Not surprisingly, older people and those of higher SES were significantly less likely to engage in violence. Although being male and being African American were significantly related to violence at the bivariate level (data not shown), they were not significantly related to violence when the other demographic characteristics and mental disorder variables were controlled. The nonsignificant result for males is due primarily to the association in these data between being male and having a substance abuse disorder. Specifically, 10.2 percent of males were rated as having a substance abuse disorder compared to only 1.7 percent of females and, as shown in Models 1 and 2, having a substance abuse disorder was significantly related to violence. The nonsignificant result for African Americans is due primarily to the association that exists in these data between being African American and having low socioeconomic status. Specifically, 30.3 percent of African Americans scored in the lowest quartile of the SES measure, compared to 12.6 percent of whites (and other race and ethnic groups), and, as shown in Model 2, having low SES was significantly related to violence.

Together, demographic characteristics reduced the odds ratio for major mental disorder by 18 percent, from 4.41 to 3.63, and reduced the odds ratio for substance abuse disorder by 34 percent, from 11.16 to 7.35. These results indicate that a substantial portion of the relationship between mental disorder and violence is due to the associations of these variables with demographic factors. However, the increased risk of violence associated with major mental disorders and substance abuse disorders remained significant after controlling for demographics.

Model 3 of Table 3 adds stressful life events to the equation. As shown, stressful life events were positively associated with violence (OR = 1.49, p < .01). In addition, adding stressful life events to the equation produced an additional 18 percent reduction in the odds ratio for major mental disorder, from 3.63 to 2.97, and an additional 21 percent reduction in the odds ratio for substance abuse disorder, from 7.35 to 5.81.

In order to determine the effect of impaired social support on violence, Model 4 of Table 3 removes stressful life events and adds impaired social support to the equation. As shown, impaired social support was positively associated with violence (OR = 1.86, p < .01). Moreover, adding impaired social support to the equation produced a 20 percent reduction in the odds ratio for major mental disorder, from 3.63 to 2.92, and a 20 percent reduction in the odds ratio for substance abuse disorder, from 7.35 to 5.87.
Model 5 of Table 3 includes both stressful life events and impaired social support in the equation. As shown, controlling for stressful life events and impaired social support resulted in a 32 percent total reduction in the odds ratio for major mental disorder, from 3.63 to 2.48, and a 35 percent total reduction in the odds ratio for substance abuse disorder, from 7.35 to 4.76. In addition, the odds ratio for SES was rendered nonsignificant when stressful life events and impaired social support were added to the equation, indicating that some of the increased risk for violence associated with low SES is due to the disproportionate exposure of persons with low SES to stressful life events and impaired social support. Together, these results are consistent with the hypothesis that the relationship between mental disorder and violence is due, in part, to the higher levels of stress and support impairment experienced by people with mental disorder. However, although substantially reduced in magnitude, the relationship between mental disorder and violence remained significant after controlling for impaired social support and stressful life events.

Discussion

Research on the relationship between mental disorder and violence has focused largely on the effects of clinical characteristics (Link, Monahan, Stueve, and Cullen 1999; Link and Stueve 1994; Swanson et al. 1996; Swanson et al. 1990), with little attention to the potentially important contribution that social factors, such as stressful life events and impaired social support, might make to this association. To address this gap we formulated and tested a

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3. An examination of interaction terms between mental disorder and stressful life events, mental disorder and impaired support measure, and the three-way interaction among mental disorder, life stress, and impaired support produced null results. This suggests that the effect of stressful life events and impaired social support on violence are not contingent on the presence of mental disorder but rather operate similarly across mentally disordered and non-mentally disordered respondents.
model of the association between mental disorder and violence in which both were hypothe-
sized to be rooted in the stress and support experiences of individuals. Consistent with this
model, we found significantly higher levels of stress and impaired social support among ment-
tally disordered people who engaged in violence. More importantly, we found that the rela-
tionship between mental disorder and violence was substantially reduced when we controlled
for stressful life events and impaired social support. Specifically, the relationship between
major mental disorder (including schizophrenia and major affective disorder) and violence
was attenuated by 32 percent, and the relationship between substance abuse disorder and
violence was attenuated by 34 percent when stressful life events and impaired social support
were controlled statistically.

These results are consistent with the hypothesis that the relationship between mental
disorder and violence is due, in part, to the stress and support contexts to which individuals
are exposed. In addition, we found a considerable portion of the relationship between mental
disorder and violence to be rooted in demographic characteristics. These findings suggest that
future studies of the relationship between mental disorder and violence should include stress
and support measures in their analyses, in addition to the demographic variables typically
included in such studies, in order to avoid problems of model misspecification. Specifically,
studied, studies that do not include such measures are likely to overstate the magnitude of the associ-
ation between mental disorder and violence, leading to erroneous conclusions regarding the
extent to which they are related. In addition to slowing theoretical progress in this area,
ignoring the stress and support contexts of individuals may unnecessarily limit the focus of
treatment interventions aimed at reducing violence to clinical factors alone (Steadman and
Ribner 1982).

This study is part of a growing body of research and theory applying stress and support
concepts to the study of criminal violence (Agnew 1992; Aseltine, Gore, and Gordon 2000;
Capowich et al. 2001; Cullen 1994; Hoffman and Cerbone 1999; Sigfusdottir, Farkas, and Sil-
ver 2004). In support of this approach, we found strong evidence that stressful life events and
impaired social support are key factors affecting the social distribution of violence in the gen-
eral population. The finding that life stress and impaired social support had significant inde-
dependent effects on violence after controlling for demographic characteristics and mental
disorder provides considerable empirical support for the further exploration of a social stress
approach to explaining violent behavior. Moreover, by focusing on the relationship between
mental disorder and violence, and by showing that this relationship is due in part to contex-
tual experiences related to stress and social support, this study provides an important empirical
foundation to guide future studies of mental disorder and violence toward a greater focus
on factors that go beyond the individual's clinical characteristics to include their stress and
support experiences.

It is important to keep in mind, however, that our analyses were based on cross-sectional
data. Because of this, we were unable to distinguish empirically between alternative causal
orderings that may exist among our independent measures (mental disorder, stressful life
events, and impaired social support). Lacking longitudinal data, we built our model around
the assumption suggested by the social stress literatures in criminology and mental health:
life stress and social support are exogenous to mental disorder and violence. Nonetheless, a
plausible alternative to this model is one that would posit the *stress-inducing* and *support-
inhibiting* effects of mental disorder in a causal sequence leading to violence. Such a model
might be written as follows:

\[
\text{mental disorder} \rightarrow \text{stressful life events and impaired social support} \rightarrow \text{violence}
\]

Consistent with the stress literature in criminology, this alternative model suggests that
stressful life events and impaired social support influence the likelihood of violence. How-
ever, in contrast to the stress literature in mental health, this model suggests that mental dis-
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Mental disorder may contribute to the higher levels of stress and support impairment found among mentally disordered people.

One way that this may occur is through involvement in conflicted social relationships (Felson 1992; Hiday 1997; Silver 2002). Elsewhere the first author (Silver 2002) has argued, “people with serious mental disorders, particularly those experiencing delusional beliefs or hallucinations, or those with substance abuse disorders, may introduce a variety of negative stimuli into their relationships with others” (p. 206). Such negative stimuli may result in conflicts as others attempt to exert social control by persuading the mentally disordered person to desist from disturbing or annoying behavior or to comply with treatment (Hiday 1997). For example, a recent study of the perceptions of coercion among hospitalized psychiatric patients found that approximately two thirds of patients who felt coerced into being hospitalized also reported feeling angry and fearful as a result (Monahan et al. 1999). This suggests that conflict associated with efforts at informal social control by caretakers may inadvertently contribute to violence among mentally disordered people by eliciting negative emotions. This may be particularly true when social control efforts include involuntary treatment interventions, such as forced hospitalization or forced medications. Thus, mental disorder may contribute to stress exposure by eliciting others’ social control behaviors that the mentally disordered person experiences as unwanted (and therefore stressful), thereby increasing the likelihood that violence will occur.

Mental disorder may also inhibit social support. A central aspect of the stereotype of mental disorder is dangerousness, which is strongly associated with attitudinal rejection and social distancing by the general public (Link et al. 1999). Based on an analysis of General Social Survey data gathered in 1996, Bruce Link, Jo C. Phelan, Michaeline Bresnahan, Ann Stueve, and Bernice A. Pescosolido (1999) concluded that “if the symptoms of mental illnesses continue to be linked to fears of violence, people with mental illnesses will be negatively affected through rejection” (1332–33). Such rejection may contribute to the lower levels of social support typically observed among mentally disordered people by limiting the pool of supportive others with whom they may form social bonds. In short, to the extent that mental disorder leads to decreased support and increased stress, the alternative causal sequence shown above remains a plausible alternative to the one described at the outset of this article. Distinguishing between these alternative causal models remains an important task for future research.

In the end, we were unable to fully explain the relationship between substance abuse disorder and violence. This relationship remained significant after controlling for demographic characteristics, stressful life events, and impaired social support, suggesting that substance abuse may exert a direct effect on the likelihood of violence independent of the stress and support contexts of individuals. For example, substance abuse may disinhibit aggressive impulses leading to an association between substance abuse disorders and violence that is not mediated by other factors (Swanson et al. 2002). Alternatively, we may have failed to measure appropriately the specific types of stress that may lead to both substance abuse and violence.

For example, the current study examined only acute life events that occurred within the past year and thus did not address the potentially important role of enduring or chronic life stress as a mediator of the mental disorder-violence relationship. However, it remains plausible that the effects of stress on both mental disorder and violence operate in a cumulative fashion over the life course. This may be particularly true for mentally disordered people who attempt to manage stress by using substances to “self-medicate.” Although the concept of chronic stress has not been tested in a study of mental disorder and violence, it has received a good deal of attention in the mental health literature (Aneshensel 1992; Pearlin 1989; Turner et al. 1995) and some attention in the criminology literature (Hoffman and Cerbone 1999). For example, recent and chronic life stress have been shown to contribute to the occurrence of depressive symptoms among community residents, helping to explain variation in depressive symptoms across key social variables, including race, gender, and social class (for a review,
see Aneshensel 1992). In addition, stressful life events have been shown to have a cumulative effect on delinquency over the life course, suggesting that early and persistent exposure to stress may be an important link between social demographics and delinquency (Hoffman and Cerbone 1999). Thus, the hypothesis that chronic stress may also contribute to the relationship between substance abuse and violence remains plausible and should be examined in future research.

Given that most prior studies of the relationship between mental disorder and violence have been based on cross-sectional data, future studies would benefit greatly from adopting a longitudinal perspective. Longitudinal data would enable researchers to identify the processes by which social and clinical factors produce violence over time and to distinguish between the causal models discussed above. Although detailed longitudinal data recently have been gathered on samples of discharged psychiatric patients (Silver 2000; Steadman et al. 1998), no comparable data exist for the general population. Looking to the future, a cost-effective way to generate such data might be to use life event-calendars on a general population sample (Horney, Osgood, and Marshall 1995). In addition, future studies should seek out more detailed information on the types, frequency, and seriousness of violence committed by individuals with and without mental disorder. Although significant advances have been made in measuring violence among discharged psychiatric patients (Silver 2000; Silver, Mulvey and Monahan 1999; Steadman et al. 1998), mental health surveys of the general population remain rare. Those that have been performed lack detailed data on violence, stressful life events, and impaired social support. If gathered together, such data would enable researchers to better understand the contributions of stressful life events and impaired social support to the association between mental disorder and violence, as well as to the occurrence of violence more generally.

Appendix A: Stressful Life Event Questions from the Duke University ECA Project

**PART A. During the past year, did/were . . .** *(response categories: 0 = No, 1 = Yes)*

1) . . . you experience an illness or injury that required staying overnight or longer in the hospital?
2) . . . you experience an illness or injury that kept you from your usual activities (work, housework, school) for a week or more?
3) . . . a member of your family experience a serious illness or serious injury?
4) . . . you get married or begin living with someone as though married?
5) . . . you separate for a few weeks or longer from (your husband/your wife/someone with whom you were living as though married)? *
6) . . . you get a divorce or have a love relationship or important friendship end? *
7) . . . you get back together with (your husband/your wife/someone with whom you were living as though married) after a period of separation?
8) . . . (your husband/your wife/someone with whom you were living as though married) die?
9) . . . you become a parent or stepparent or start acting as a parent for a child?
10) . . . a child or other household member move out or leave your home?
11) . . . a loved one other than (your husband/your wife/someone with whom you were living as though married) die?
12) . . . you or a family member have any legal problems?*

* Omitted from scale construction due to possible confounding with violence.
13) . . . you unemployed and unable to find work for at least a month?
14) . . . you start work or start working somewhere else?
15) . . . you fired from a job?
16) . . . you retire from work?
17) . . . your (or your family’s) financial situation improve considerably?
18) . . . your (or your family’s) financial situation get considerably worse?
19) . . . you move?

PART B. Did this have a (1 = Negative, 2 = Neutral, or 3 = Positive) effect on you?

Appendix B: Social Support Scales

Satisfaction with Support

1) Are you satisfied with how often you see your friends and relatives; that is do you see them as often as you want to?
   1 = Very dissatisfied, 2 = Somewhat dissatisfied, 3 = Satisfied

2) In times of trouble, can you count on at least some of your family and friends?
   1 = Hardly ever, 2 = Some of the time, 3 = Most of the time

3) How satisfied are you with the kinds of relationships you have with your family and friends?
   1 = Very dissatisfied, 2 = Somewhat dissatisfied, 3 = Satisfied

4) Do you wish that your family and friends would give you more help?
   1 = Yes, 2 = No

Perceived Social Support

1) When you are with your family and friends, how often do you feel lonely?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

2) Does it seem that your family and friends understand you?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

3) Do you feel useful to your family and friends?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

4) Do you know what is going on with your family and friends?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

5) When you are talking with your family and friends, do you feel you are being listened to?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

6) Do you feel that you have a definite role in your family and among your friends?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

7) Can you talk about your deepest problems with at least some of your family and friends?
   1 = Most of the time, 2 = Some of the time, 3 = Hardly ever

References


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