Recent Stressful Life Events and Episodes of Schizophrenia

by Bruce P. Dohrenwend and Gladys Egri

Abstract

Most of the relatively firm evidence on the causal significance of recent stressful life events in episodes of schizophrenia comes from a handful of retrospective case-control studies of schizophrenic patients and from comparisons of schizophrenic patients with patients suffering from affective disorders. Some important additional evidence is available from studies of the occurrence of psychotic symptomatology in extreme situations such as combat during wartime and in nonwesternized societies. On the basis of our analyses of the case-control studies, the literature on extreme situations, and the cross-cultural findings, we conclude that the consensus that stressful life events play only a trivial role in causing schizophrenic episodes is premature.

Schizophrenia is a "... descriptive entity without clear margins" (Gruenberg 1974, p. 455). Historically, broader or narrower definitions of these margins have held sway depending on whether focus has been on chronically ill older patients who have made up the bulk of the patients in mental hospitals, or on cohorts of first admissions who have been followed up over time and show highly variable courses and outcomes (Gruenberg 1974). In this context, we shall sidestep such thorny issues as whether there is such a thing as a single disorder called "schizophrenia," or whether, in fact, we are dealing with a group of disorders. Consistent with the nature of the available evidence, we shall be concerned with stressful life events and schizophrenic episodes. For purposes of this article, we will accept the operational definitions used by the various investigators as describing such episodes.

Among researchers concerned with the problem, there appears to be a growing consensus that stressful life events such as marriage, divorce, birth of a child, death of a loved one, and loss of a job play a role in onset and recurrence of schizophrenic episodes, but that this role is quite trivial (e.g., Brown, Harris, and Peto 1973; Hudgens 1974; Gottesman and Shields 1976). Consider the conclusions of Hudgens on the one hand and Brown et al. on the other on the basis of their analyses of much of the most important research. Hudgens (1974) states:

Investigators have demonstrated a causal connection between stressful life events and subsequent worsening of conditions already underway, between life events and admission to psychiatric hospitals or clinics. . . . It does not seem to me that investigators have yet convincingly demonstrated that life stress can cause madness in a person previously sound of mind. . . . [p. 120]

For their part, Brown, Harris, and Peto distinguish between two types of causal role that life events might play: "formative" in contrast to "triggering" (Brown, Harris, and Peto 1973, p. 162). Events have a formative environmental effect when they are more important in the causation of a schizophrenic episode than dispositional factors.
such as "genetic and constitutional difference, early childhood experiences, and personality traits" together with "ongoing social difficulties and amount of current social support" (Brown, Harris, and Peto 1973, p. 159). By contrast, events have a triggering effect when such predispositional factors play the larger role. Brown and his colleagues conclude that life events are less important than dispositional factors for schizophrenic patients and that "... in the majority of cases they trigger an onset that might well have occurred quite soon in any case" (Brown, Harris, and Peto 1973, p. 172).

According to Brown, Harris, and Peto (1973) the point of consensus, then, is that life events are judged unlikely to have a formative effect or, in Hudgens' (1974) vivid phrase, cause madness in a person previously sound of mind. Is such a consensus supported by the evidence? That is, do recent life events have a causal influence on onset and relapse? If so, is this effect formative or that of trigger? If the effect is to trigger, is it weak or strong when compared to the effects of various other endogenous and exogenous predispositional factors?

Case-Control Studies of Life Events and Schizophrenia

Given the rarity of diagnosed schizophrenia in the general population (Cooper 1978; Dohrenwend et al. 1980), and the tremendous expense in both time and effort that long-term prospective research involves, the strategy for systematically investigating the role of life events has involved retrospective case-control designs.

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<tr>
<th>Table 1. Ideal criteria for a case-control study of life events and schizophrenic episodes</th>
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<tr>
<td>• The cases should consist of a representative sample of individuals from the population being studied who have recently developed the schizophrenic episodes for the first time.</td>
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<td>• The procedures for collecting the symptom data and the rules for combining these data into diagnoses of cases should be explicit and replicable.</td>
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<tr>
<td>• The controls should consist of a representative sample of the demographic counterparts of the cases in the population being studied.</td>
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<td>• There should be similarly selected comparison groups of cases with other types of symptomatology.</td>
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<td>• Data on life events should be gathered systematically from the subjects and their informants on fully enumerated lists of events rather than from patient charts where recording of the relevant information tends to be fragmented.</td>
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<td>• Both the occurrence of the events and the occurrence of onsets and/or recurrences of the schizophrenic episodes should be dated accurately with respect to one another.</td>
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<td>• Events that are likely to occur as consequences of the individual's mental state and behavior must be distinguished from events that occur independently of such personality factors.</td>
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<td>• Data on alternative or complementary dispositional or risk factors should be secured.</td>
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<td>• Repeated followups should be conducted at suitable intervals of time to test whether the circumstances preceding recurrence are the same as the circumstances preceding onset, and whether they can be made to differ in meaningful ways with the occurrence of intervening factors such as type and duration of treatment.</td>
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Both Brown and Hudgens have set forth criteria for adequate case-control studies of the problem. We have been influenced by them in developing the list shown in table 1.

The criteria listed in table 1 are probably essential if we are to have decisive findings; however, several of the criteria are extremely difficult to meet. For example, to obtain a representative sample of persons who develop schizophrenic episodes, we must be able to agree upon and identify the important characteristics of these episodes and draw a representative sample of those showing such characteristics—whether these individuals have been officially recognized (e.g., by admission to a mental hospital) or not. In analyses of results from epidemiological studies of true prevalence, Link and Dohrenwend...
(1980) have found that substantial minorities of the diagnosed schizophrenics in the general population have never been in inpatient or outpatient treatment. And while it is clear that some fateful events such as death of a loved one are very likely to occur independently of the individual's mental condition or behavior, and others such as being convicted of a crime are not, most events are between these extremes and require considerable additional information about the context in which they occur before such a determination can even begin to be made. Moreover, data on the most firmly established risk factor, a high rate of the schizophrenic symptomatology in first-degree relatives, are extremely difficult and expensive to secure. It should not be surprising, therefore, that there is no single case-control study of life events and schizophrenia that meets all of the above criteria.

Two studies meet more of these criteria, however, than any of the others of which we are aware. Interestingly, they also come closest to satisfying the four criteria that constitute the irreducible minimum for providing useful results bearing on the problem of whether life events play a causal role—adequate controls, replicable diagnostic criteria, attention to assessing which events occur independently of the subjects' prior mental state, and careful dating of occurrence of the events in relation to the occurrence of the schizophrenic episodes. One of the two case-control studies was conducted in New Haven by Jacobs and Myers (1976); the other in London by Brown and Birley (1968) and Birley and Brown (1970).

The New Haven Study. The 62 cases in the New Haven study were selected from all patients admitted to three hospitals over a 6-month period with a hospital "diagnosis or a diagnosis listed for exclusion of schizophrenia, schizaffective illness, and delusions and hallucinations" (Jacobs and Myers 1976, p. 76). To enter the study, the patient had to be a first admission and, on the basis of a personal interview by a psychiatrist 2–4 weeks after admission, to meet study diagnostic criteria for schizophrenia. These criteria consisted of the presence of two or more of the following symptoms: "ideas of influence, feelings of telepathy, thought disorder, inappropriate or flat affect, catatonic disturbances, persecutory delusions, grandiose delusions, and other types of delusions and hallucinations that were not depressive in quality or secondary to drugs" (Jacobs and Myers 1976, p. 77). The characteristics of the patients are summarized in the left hand portion of table 2.

The 62 controls were systematically subsampled from a representative sample of 938 individuals from the general population of a mental health catchment area in New Haven. They were matched to the schizophrenic patients on the basis of age, sex, marital status, and socioeconomic status. The recent experience of this community sample with stressful life events had been previously studied by Myers, Lindenthal, and Pepper (1974). These investigators had developed a detailed list of life events for the purpose, based on their own research and that of others.

The same interview approach was used by Jacobs and Myers (1976) to obtain data on life events in the interviews with the patients 2–4 weeks after admission. The period covered by the interview was 1 year before onset. This interval was chosen to correspond with the 1-year period covered in the interviews with the controls.

The London Study. In the London study conducted by Brown and Birley, the 50 schizophrenic patients were selected by screening the case notes of all patients admitted to hospitals serving a catchment area in London. All who were judged to be possibly schizophrenic were interviewed with an early edition of the Present State Examination (Wing, Cooper, and Sartorius 1974), and diagnosed by one of the two participating psychiatrists as showing at least one of the following four groups of symptoms (Birley and Brown 1970, p. 328):

1. Subjective experience of disordered thought or body control.
2. Delusions of persecution or reference which were thought to be undeserved and not occurring in the context of severe depression.
3. Grandiose, religious, somatic, or bizarre delusions but not in a setting of severe depression or mania.
4. Consistent hallucinations, but not depressive in content and not symptomatic of alcohol addiction.

For about 40 percent of the schizophrenic patients, onset was dated as occurring at some time within 13 weeks before admission. The first 50 of these patients constituted the schizophrenic cases in this study, and their characteristics are summarized in the right hand portion of table 2. Almost half of the patients were experiencing their first hospital admission and
Table 2. Description of patients in New Haven and London case-control studies

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>New Haven (62 cases; 62 controls)</th>
<th>London (50 cases; 325 controls)</th>
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<tr>
<td>Socioeconomic status</td>
<td>Median: Class IV</td>
<td>Not identified</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>“Broad schizophrenia” (includes affective, neurotic symptoms, and disorientation)</td>
<td>Study diagnoses: “Definite, schizophrenia” ($n = 24$) “Probable schizophrenia” — i.e., schizophreniform state ($n = 26$)</td>
</tr>
<tr>
<td>Hospital diagnoses:</td>
<td>45 schizophrenic</td>
<td>4 schizoaffective</td>
</tr>
<tr>
<td></td>
<td>4 schizoaffective</td>
<td>1 mixed affective</td>
</tr>
<tr>
<td></td>
<td>with paranoid ideation</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Average: 28</td>
<td>“Definite”—mean 38.2</td>
</tr>
<tr>
<td></td>
<td>“Probable”—younger mean 29.3</td>
<td></td>
</tr>
<tr>
<td>Diagnostic criteria</td>
<td>Similar but not identical</td>
<td></td>
</tr>
<tr>
<td>Type of onset</td>
<td>Not described</td>
<td>Normal to schizophrenic: “Probable” = 75% (18/24) “Definite” = 42% (11/26)</td>
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<td></td>
<td>All patients were first admissions and very likely to be first episodes</td>
<td>Normal to schizophrenic — 29 patients Nonschizophrenic symptoms to schizophrenic — 8 patients Exacerbation from mild to severely schizophrenic — 13 patients</td>
</tr>
<tr>
<td>Onset criteria</td>
<td>Same</td>
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30 percent were experiencing their “first ever” episode of schizophrenia (Birley and Brown 1970, p. 329).

The controls were a random sample of 325 employees at six local firms. Most were clerical workers and semiskilled or unskilled factory workers. Both patients and controls were given the same, detailed interview about life events and the time and context in which they occurred. For the controls, the period covered was 13 weeks before the interview; for the patients, the period covered was the 13 weeks before onset. Co-informants from among the relatives or close acquaintances of the patients were also interviewed to check on the reliability of reported events, and the precise time was recorded of the occurrence of each event within the 13-week period covered by the reports.

Main Results From the London and New Haven Studies. The consistent finding from the two studies is that there was a significantly higher rate of life events for the patients in the reporting period of 3 months in the London study and 1 year in the New Haven study than for the controls. However, since this rate was based mainly on events that may be dependent on the patients’ mental condition, the conclusion from these results alone might well be that the patients were more prone to get themselves into stressful situations than victims of such situations (Fontana et al. 1972). Consider, however, the additional
finding from the London study of a higher rate of independent events in the 3-week period before onset for patients in their first episode or recurrence than for patients in subsequent episodes. Forty-six percent of the patients had experienced at least one independent event in the 3-week period as compared with only 12 percent of the controls. Consequently, we have evidence of a causal role for life events. Fortunately, the Brown and Birley (1968) finding is not an isolated instance. In another study, Leff (1973) found a similar increase of events in the period just before relapse in a sample of schizophrenics being treated with phenothiazines in the community. The Brown and Birley finding held, moreover, regardless of type of onset, first admission versus readmission status of the patient, and also among those experiencing first schizophrenic episodes versus those experiencing recurrences.

Let us assume that the main difference in the results of the New Haven and London studies stems from the fact that the New Haven researchers apparently did not date the occurrence of the events at weekly or monthly intervals within the year period and were, therefore, unable to determine whether there had been a significant increase of independent events just before the episode. The results then suggest that stressful life events do play a role in both onset and recurrence. What kind of role do they play, and how strong is it?

**Life Events in Schizophrenia and Depression**

Brown and his colleagues, as mentioned earlier, concluded that the role of life events in schizophrenic episodes is mainly that of trigger. Their argument, like that of the New Haven researchers, appears to be based largely on comparisons with patients with affective disorders. In these comparisons, the preponderance of evidence supports the conventional wisdom that stressful life events are more important in depression than in schizophrenia; for example, calculations of relative risk (Paykel 1978) and "brought-forward time" (Brown, Harris, and Peto 1973) appear to support this view. The results do not, however, speak directly to the central theoretical question: Are life events more or less important than predispositional factors in the causation of a schizophrenic episode? There has been no attempt to measure the dispositional factors in the case-control studies of life events and schizophrenic episodes that would make a direct test possible. Nor have prospective studies of subjects selected for high genetic risk of schizophrenia as yet begun to provide some of the relevant information on this matter that could come from such studies (Garmezy 1974).

No known particular, "specific," enigmatic environmental influence is decisive in the development of schizophrenia; instead, the psychological stress that we discover in the life histories of schizophrenics emanates from a combination of worries, stresses, and tensions that by their nature cannot clearly be distinguished from those that afflict all of us at times in one form or another. [p. 356]

The implication is that, if life events are to have a formative effect, they must be clearly distinguishable either in type, combination, or frequency of occurrence from those that afflict all of us at times in one form or another. Most important would be the location of a set of recent events that had been shown, in Hudgens' apt phrase, to cause madness in a person previously sound of mind. Our best clues as to what these events might be come from the literature on extreme situations, especially the situation of combat during wartime, since such situations have indeed been found to produce severe psychopathology in previously normal persons (Dohrenwend 1979).

A wide variety of symptoms have occurred under combat conditions. These have included psychotic symptoms. Were the psychotic symptoms caused by the extreme situations?

Paster (1948), in a remarkable study of the records of 1,500 psychotic patients and their relatives during World War II, found less evidence of individual predisposing factors among combat soldiers who became psychotic than among soldiers who developed psychotic disorders in less stressful circumstances. The large majority of the psychoses, over 70 percent, were judged to be
schizophrenic. Discussing these results, Paster observed:

It is generally believed that the psychotic soldier is of a fundamentally weak make-up and is unable to withstand the stress and strain associated with military life. In this connection it is significant to note the 45% of soldiers in the non-overseas group succumbed within one year of service.

On the other hand, many soldiers who later broke down had succeeded in serving both overseas and in combat. In these less vulnerable individuals, tension, prolonged separation from home and exposure to combat undoubtedly played a significant role in finally precipitating the psychotic reactions. This is corroborated by the fact that among the combat participants the largest group affected was that composed of soldiers who had been in the Army the longest period of time. These soldiers who succumbed in combat had endured the battlefield for an average period of four months.

Moreover, Wagner (1946), in a study of 5,203 neuropsychiatric casualties of the Normandy campaign, compared psychotic and nonpsychotic admissions to "exhaustion centers," finding that:

Compared with our nonpsychotic admissions, their military achievements, as judged by ratings and combat days, were equal if not superior to the neurotic casualties. [p. 365]

Wagner estimated that only about 3 percent of the patients at exhaustion centers were diagnosed as psychotic at time of discharge. He states that within the classification of psychosis:

More than half of these were placed in the category "undiagnosed" usually out of reluctance to consider a patient schizophrenic after so limited a period of observation. [p. 355]

By all accounts, psychotic symptomatology was far more prevalent under combat conditions than such rates of reluctantly assigned final diagnoses at exhaustion centers would suggest. There are reports, for example, of "three day" psychoses (Kolb 1973, p. 438), "five-day schizophrenia" (Kormos 1978, p. 4), and "twilight states" (Schneider 1959, p. 58) that would be omitted from such statistics.

The question can be raised, of course, as to whether these psychiatrists were seeing the same kinds of schizophrenic symptoms in the military setting that they observed with their patients in civilian life. For example, the prognosis for combat soldiers diagnosed as schizophrenic was far better than would have been expected on the basis of civilian experience (Wagner 1946; Paster 1948). Students of combat reactions, such as Paster and Wagner, however, have reported that symptomatology of schizophrenia observed in combat situations is indistinguishable from the symptoms of schizophrenia observed in patients from civilian populations. Kurt Schneider (1959), as Birley and Brown (1970) point out, holds that symptoms of "true" schizophrenia with a "somatic etiology" can be distinguished from "psychic reactions" caused by external events. Schneider would, therefore, be expected to be a harsh judge of the matter. Yet he wrote:

At the battlefront, it was often hard to make a differential diagnosis between psychogenic twilight state and schizophrenia . . . the accumulation of psychotic-like symptoms among men waiting at the base dressing-stations is naturally some contraindication for schizophrenia. Once I saw three such doubtful cases together, but in the isolated case it can be impossible for the most practiced eye not to be deceived at first. [p. 58]

Combat is not the only situation in which such acute and transient symptomatology has been observed. Murphy (1968) has pointed out that in nonwesternized societies:

Acute short-lasting psychoses form a major part of all recognized mental disorder, and there is no agreement where these lie in our current diagnostic classifications. . . . Some psychiatrists include most such cases under schizophrenia on the grounds of their delusional or hallucinatory elements and of the fact that a few of these acute states, indistinguishable from the rest initially, develop into typically chronic schizophrenia later. Other workers, however, call them organic psychoses, incriminating one of the various infections or infestations which nearly every patient in these countries has. Still others regard them as something different from either. The relative number of such conditions is too high for us to treat them as we do borderline schizophrenias in North America, by pretending that they do not make a real difference one way or the other, and their short duration creates serious difficulties for field surveys, which are usually forced to deduce incidence on the basis of prevalence. [p. 138]

Consider, moreover, the striking findings from the World Health Organization study of schizophrenia indicating that prognosis is also far better for patients actually diagnosed as schizophrenics in underdeveloped countries (Sartorius, Jablensky, and Shapiro
In this study, the investigators were using modern methods of diagnosis. Clearly, the nature of schizophrenic symptoms per se tells us little if anything about future course (Strauss and Carpenter 1972, 1974; Hawk and Carpenter 1975) in civilian as well as in military settings. There appears to be no way to distinguish between the symptomatology of schizophrenic episodes in civilian in contrast to military settings.

Let us consider, then, the circumstances under which combinations of more ordinary stressful life events might induce an approximation of the conditions involved in extreme situations such as prolonged exposure to heavy combat in wartime. Such extreme situations involve being faced with unanticipated negative events whose occurrences are outside the control of the individual experiencing them—in wartime, for example, they involve death of comrades, threat of one's own death or disablement, physical exhaustion, and being stripped of the social support of comrades as the casualty rate rises. Events in civil life such as loss of loved one, life-threatening physical illness or injury, events that disrupt social supports (e.g., a move to a new community or a change to a new place of employment) may, if they occur in close proximity to one another, create conditions of environmentally induced stress resembling those of extreme situations. Hypothetically, we have a triad of events whose occurrence in close proximity to one another over a relatively brief period of time may induce psychopathology in previously normal persons in much the same way that extreme situations involved in natural or manmade disasters are known to do (Dohrenwend 1979).

The Nature of Life Events Described in the London and New Haven Studies

Is there evidence that such a pathogenic triad of recent events has preceded schizophrenic onset or recurrence among the patients in the New Haven and London studies? Fortunately, Brown and Birley (1968) provide information on the actual events experienced in the 13-week period before onset or relapse by the individuals diagnosed as schizophrenic in their study. It is clear from this material that not one of the cases experienced events from all three elements of our hypothesized pathogenic triad. However, Brown, Harris, and Peto (1973) have reported that about 16 percent experienced events that they judged to be markedly severe and that, moreover, this was three times the rate of such threatening events among the controls. This later finding led Brown, Harris, and Peto (1973) to speculate that there might be a formative effect of stressful events at least for a small minority of schizophrenics.

Looking over the case material that Brown and Birley (1968) provided in their earlier article, we could make our own judgments about the severity of stress that may well correspond to those made by Brown and his colleagues. Like them, one of us selected eight persons or 16 percent of the total number of schizophrenics as seeming to have experienced unusually severe objective stress. The other independently selected five of the same persons and added no one who was not previously selected. Based on Brown and Birley's material, table 3 shows the independent events that one or both of us judged to be markedly severe. We were also struck in going over this material by the fact that slightly over 40 percent of the patients experienced actual, or, in a few cases, impending residential changes and/or job changes that would seem highly likely to disrupt usual social supports.

Table 3. Markedly severe "independent" events experienced by eight schizophrenic patients in the London Study

- Birth of a child whom patient was told was "ill" with white asphyxia.
- Husband admitted to hospital with a carcinoma.
- Father with whom patient lived died.
- Parents with whom patient lived had problems of severe physical illness: father developed pneumonia; mother, an invalid, returned to hospital.
- Patient required police protection around the clock because of threats about giving evidence in a criminal trial.
- Mother with whom patient lived committed suicide.
- Patient admitted to hospital with rapidly failing eyesight due to an eye infection.
- Mother hospitalized for mental illness.
moves appear to be characteristic of schizophrenic patients (Odegård 1932; Dunham 1965, p. 162).

The data from the New Haven study (Jacobs and Myers 1976) on the actual life events experienced are presented in more aggregated form than in the London study. We could not, therefore, do an analysis of the particular events experienced by each subject. It is intriguing to note, nevertheless, that, consistent with the London findings and the larger literature on schizophrenia, the New Haven patients moved from one neighborhood to another far more frequently than the community controls. However, there is again no evidence that two major elements of our hypothesized pathogenic triad—physical illness or injury and other severe loss events such as death of a loved one—are more frequent among the patients than among the controls. Several studies suggest that both types of events may be more prominent among recent events experienced by depressed patients (Beck and Worthen 1972; Jacobs, Prusoff, and Payke 1974; Lahniers and White 1976). Also, it is disconcerting to find that only one of the events Jacobs and Myers defined as independent for social support, creating “binds in the family situation” (Clausen 1979, p. 40). And since there is something about either the disorder and/or the way it is handled in modern western societies that makes schizophrenics prone to some types of disruptive events, they must try to cope more than most people have to with losses of social supports stemming from moves from one region to another, from one residence to another, from one job to another, and disruptive contacts with the law.

Brown, Harris, and Peto (1973) argue cogently that if events that can be shown to be independent of the individual’s mental condition occur more frequently before onset or relapse in schizophrenics than controls, these events could play at least a minimal role in causation. We believe that a person who has first-degree relatives diagnosed as schizophrenic and/or suffering from possibly related disorders (Kety et al. 1976) is likely to experience stressful events as a direct result of his or her family situation—events that are more clearly outside his or her control than such ordinary events as changes in job and residence. Brown and Birley (1968), for example, classified both the suicide of one schizophrenic patient’s mother and the institutionalization of the mother of another as independent events. Moreover, those patients, with their unusual family situations, are likely to be just as vulnerable to more ordinary stressful events as the rest of us. Thus, the excess of events experienced by schizophrenic patients in these
case-control studies has a certain plausibility as being both unusually severe and as including independent events that qualify for a causal role. What kinds of effect do they have?

Brown, Harris, and Peto (1973) suggest that the life events trigger the onset of florid symptoms in predisposed persons. Schwartz and Myers (1977), however, have reported findings suggesting that life events have a greater influence on nonpsychotic symptoms in a sample of posthospitalized schizophrenics living in the community. The kinds of symptoms they describe correspond closely to what we would, following Frank's (1973) conceptualization, describe as "demoralization," a syndrome of psychological distress that follows a wide variety of situations, including combat, in which individuals find themselves in circumstances with which they are unable to cope. It seems possible to us that situationally induced demoralization may be a forerunner of the schizophrenic episode in predisposed persons. If this is so, it would carry implications for prevention, since demoralization is thought to be extremely responsive to social support (Frank 1973). Only closely monitored prospective research will tell if this is the case.

Onset versus Recurrence

It is remarkable that the main findings from the Brown and Birley study (Brown and Birley 1968; Birley and Brown 1970)—an increase of life events just before the onset of a schizophrenic episode or a relapse—held true for first admission cases and readmissions. The similar findings appear to have occurred despite the fact that many personal and social circumstances at relapse are likely to be different from those at onset. For example, medication is likely to affect the person's behavior; and having displayed psychiatric symptoms and/or been hospitalized is likely to affect the person's social role in society, with general social rejection occurring once a person has been officially labeled as "mentally ill" (Farina, Murray, and Groh 1978).

Effective medication and other treatment modalities probably act as buffers against stress, thereby reducing vulnerability (Hogarty and Goldberg 1973). The results from the study by Leff et al. (1973) provide direct evidence that this is the case. It is possible, therefore, that other more negative factors associated with hospitalization that would be expected to increase both the amount of stress experienced and personal vulnerability to such stress are offset by the treatment. This could explain why life events appear to play a similar role in both onset and recurrence of a schizophrenic episode. It is also possible that the distinction between onset and recurrence is blurred in these studies due to difficulty in establishing the presence or absence of previous schizophrenic episodes, and/or dating the present episode accurately with reference to the date of admission to hospital. The latter problem is especially important since it would suggest, as Hudgens (1974) implied, that life events are more important in leading to admission to treatment than in producing the schizophrenic episode, which frequently precedes admission to treatment by several months (Brown and Birley 1968; Jacobs and Myers 1976). However, in the London study an effort was made to avoid this possibility by selecting patients whose schizophrenic episode the investigators believed could be accurately dated with reference to the occurrence of life events. And in the New Haven study, the claim is made that "... with few exceptions, the interviewer psychiatrist was satisfied that he could date acute illness onset to within a period of several days on the basis of occurrence or exacerbation of symptoms and marked change in social functioning" (Jacobs and Myers 1976, p. 79). We are aware of controversy in the literature over what constitutes onset and relapse in schizophrenia. For purposes of this article, we accept the researchers' criteria for the onset of an acute schizophrenic episode. It is certain, however, that more information is needed about differences in the processes involved in first as against later episodes. Thus far, no retrospective case-control study of life events in first-break schizophrenics has included followups over time to examine the issues.

Generalizability of the Results of the London and New Haven Studies

Consider again the list of criteria presented in table 1 for an adequate case-control study of the problem. We noted that the London and New Haven studies came closest to meeting these criteria. They did not, however, meet all of them. Among the criteria the London and New Haven studies did not meet was that of providing a
representative sample of new cases showing schizophrenic symptoms for the first time. Is this important? In defining schizophrenia solely by the presence of characteristic symptoms at a particular time, the investigators may have used selection criteria that were too broad. From this point of view, duration of the disorder should have been added as a defining characteristic (Task Force on Nomenclature and Statistics 1980). The ground for this argument would include the fact that symptoms do not, as noted earlier, predict outcome. What does predict outcome is chronicity of the disorder before inclusion of the patient in the cohorts being investigated (Strauss and Carpenter 1974). A serious problem with introducing such an additional criterion, however, is that duration of a schizophrenic episode is related to factors extraneous to the nature of the underlying disorder. Such extraneous factors include, for example, length of interval between onset and admission to treatment and the availability of effective treatments. Moreover, as Strauss and Carpenter (1974) point out:

Adding established chronicity as a diagnostic criterion . . . weakens seriously the diagnostic utility of characteristic symptoms to define a supposed disease process. Since established chronicity predicts chronicity for most psychiatric disorders, its addition as a diagnostic criterion also negates the utility of poor outcome as a validating criterion for the existence of a specific disease process. [p. 433]

We suspect, therefore, that our chance to learn more about the precursors of onset and predictors of course will indeed depend on our ability to study and follow more representative samples of individuals who develop schizophrenic symptoms for the first time regardless of the duration of the episode. In addition, we would include the need to secure the kind of carefully selected community controls that were used in the New Haven Study, and at the same time also include carefully selected samples of patients of other diagnostic types. Such a retrospective case-control strategy with provision for frequent followup over time would be a major step forward. In combination with an examination of life events in contrast to other predisposing factors in more narrowly defined samples in high-risk studies using prospective designs, it should assist us in answering questions about the formative and triggering roles of recent stressful life events in the onset and course of schizophrenia.

Conclusions

A dozen years have passed since Brown and Birley (1968) published their important study, and it has been nearly 5 years since the valuable investigation by Jacobs and Myers (1976) appeared. There are many gaps to be filled in by future research. Meanwhile, on the basis of the preceding analyses of the existing evidence, it is possible to offer in summary some relatively firm and some fairly tentative conclusions about the role of recent stressful life events in the occurrence of schizophrenic episodes:

• Some of these fateful events occur to persons who develop schizophrenic episodes precisely because there is a hereditary component to this disorder. That is, what close relatives (some of them suffering from or disposed to psychopathology) do and what happens to them tend to create unusual events that affect the subject.

• The unusual fateful events can interact with or add to more ordinary fateful events that most of us experience at one time or another; the net effect, other things equal, is greater stress for those predisposed to schizophrenia.

• Both types of fateful events interact with events to which the predisposed subject is prone (e.g., moves, job changes) and produce additional stressful situations. Taken together, such “particular” and “specific” combinations of events may provide the kind of “enigmatic environmental influence” to which Bleuler referred.

• The stressful circumstances may lead to demoralization which precedes and/or coincides with the schizophrenic episode.

• The stressful situation before the schizophrenic episode rarely, however, approaches in severity our hypothesized pathogenic triad of events—at least in samples of subjects whose schizophrenic episodes resulted in hospitalization in the London and New Haven studies.

• Since recent life events have not been tested against predisposing factors, we do not know to what extent recent life events are formative for some types of subjects who develop schizophrenic episodes, important triggers for other types, and virtually irrele-
vant for still other types of subjects who develop schizophrenic episodes.

- While life events appear to play a role in both onset and recurrence of schizophrenic episodes, we know very little about how the processes differ in the different circumstances of onset and recurrence.

- On the basis of analysis of the epidemiological literature on true and treated rates, the literature on extreme situations, and results from the World Health Organization cross-national studies, we suspect that samples of subjects who are admitted to hospitals in modern Western societies after developing schizophrenic episodes are biased in the direction of underestimating the etiological importance of recent stressful life events.

- The consensus that recent life events have only a trivial impact on the onset and course of schizophrenia is premature. What is needed is further research on the nature of their "enigmatic environmental influence."

References


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