



Clinical & Psychosocial Significance of Trauma History in the Treatment of Schizophrenia

The past century of psychiatric research has witnessed the rise and fall of many firmly held assertions about the etiology, core symptoms, associated features, and course of schizophrenia. One recent challenge to several long-standing views of risk factors for this condition is the detection of a surprisingly high incidence of significant trauma among individuals with schizophrenia. Strikingly, the high incidence of traumatic experiences among individuals with schizophrenia is not simply due to an unusually high likeli-

hood of being traumatized after the onset of illness; in fact, many individuals experience sexual and physical abuse before the onset of illness.

One implication of this finding is that stressors occurring later in the course of brain development, such as those occurring after prenatal or neonatal states, could affect the development of neurobiological processes, which may ultimately culminate in schizophrenia. Yet, beyond theoretical issues of risk and practical matters pertaining to prevention, does the finding of a link

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ABSTRACT

Research has suggested that many individuals with schizophrenia have been exposed to significant trauma, not only after but also prior to the onset of illness. This article reviews the literature suggesting that exposure to certain kinds of trauma, including childhood sexual abuse, may increase the risk of developing schizophrenia. It also presents data from across studies that suggest a history of trauma may affect the course and symptom presentation of the disorder, resulting in higher levels of psychosocial dysfunction and higher levels of anxiety and hallucinations. An individual example is presented, and implications for case conceptualization, assessment, and treatment are discussed.

between trauma and schizophrenia have implications for the assessment and treatment of individuals already experiencing this condition? Does a history of trauma play a role in the course of the disorder and affect daily life in a manner that should be attended to by clinicians? Or are the factors that may have contributed to the emergence of schizophrenia no longer relevant after a person has been ill for years?

To explore the issue of the relevance of trauma history for the treatment of individuals with schizophrenia, this review will examine research on the incidence

and correlates of trauma in schizophrenia. Specifically, we will first review literature that reports an unexpectedly high incidence of trauma among men and women with schizophrenia, pointing to the possibility that certain kinds of childhood trauma may increase the risk of this disorder at least fivefold. We will then review a series of studies that suggest trauma history is linked to a particularly grave course of illness, which includes higher levels of particular symptoms, especially entrenched difficulties relating to others and succeeding at work.

To explore whether this knowledge has clinical utility when conceptualizing individual cases, we will present an individual example. Finally, we will examine implications for treatment.

INCIDENCE OF TRAUMA HISTORY AMONG INDIVIDUALS WITH SCHIZOPHRENIA AND PSYCHOSIS

Systematic population surveys have suggested that rates of exposure to potentially traumatic experiences are relatively common in the general population, with estimates of approximately 60.7% for men and 51.2% for women (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Research that has explored trauma among individuals with schizophrenia or psychosis in general has begun to suggest that exposure rates to traumatic events may be significantly higher in these groups. For example, in a sample of 47 individuals diagnosed with schizophrenia living in the community, Resnick, Bond, and Mueser (2003) found that nearly 75% reported exposure to a traumatic event that met Criterion A for posttraumatic stress disorder (PTSD) and 13% met full criteria for PTSD (American Psychiatric Association, 2000).

One difficulty in assessing the effects of trauma is that the impact of trauma on individuals is not uniform. There are many different kinds of trauma, and its intensity depends on many factors that are not easily measured. To narrow the scope of traumatic events investigated, much research has focused on childhood trauma and on perhaps the most severe kind, sexual abuse.

For example, in a broad population survey of 8,580 adults in private households in Great Britain, Bebbington et al. (2004) found that approximately 34.5% of individuals with a

psychotic disorder reported experiencing sexual abuse, compared with 1.8% of individuals with no psychiatric diagnosis. Individuals with psychosis were thus 15.5 times more likely to have experienced sexual abuse than were individuals without a psychiatric disorder. This finding is notably consistent with estimates from smaller samples, which have reported that approximately one third of individuals with schizophrenia have a history of childhood sexual abuse (e.g., Lysaker, Myers, Evans, Clements, & Marks, 2001). This is also consistent with a study by Whitfield, Dube, Felitti, and Anda (2005), which found that individuals who have experienced seven or more adverse childhood experiences, defined in the study as events ranging from experiencing abuse to living in a household with a member who abused substances, were five times more likely than individuals who had experienced no adverse childhood events to develop psychotic symptoms, such as hallucinations.

Other studies have tried to move beyond a purely cross-sectional design and have surveyed individuals prospectively. Spauwen, Krabbendam, Lieb, Wittchen, and van Os (2006) assessed 2,524 individuals, ages 14 to 24, and found that reported childhood abuse (defined as emotional, physical, psychological, or sexual abuse) at baseline was associated with psychotic symptoms approximately 3½ years later. This association between reported childhood abuse at baseline and psychotic symptoms at follow up was also found by Janssen et al. (2004). These investigators suggested that a dose-response relationship between abuse and psychosis may exist, with the likelihood of developing psychosis increasing with greater frequency of abuse. They

found that individuals exposed to a high frequency of abuse were 30 times more likely to develop psychosis 2 years later than were individuals who reported no abuse. The risk decreased to a five times greater chance of developing psychosis for individuals exposed to a low frequency of childhood abuse as compared with individuals with no reported abuse.

Of note, given that psychosis by definition involves some loss of touch with reality, it may be tempting to doubt the validity of self-report among individuals with psychosis. There is, however, no evidence to suggest that individuals with mental illness exaggerate their report of trauma. Research has indicated that reports of abuse among individuals with psychosis are accurate and have demonstrated good test-retest reliability (Goodman et al., 1999).

CLINICAL AND PSYCHOSOCIAL CORRELATES OF TRAUMA AMONG ADULTS WITH SCHIZOPHRENIA

Although research suggests that many individuals with schizophrenia have experienced significant trauma, are there lasting effects on the course and presentation of illness? To investigate this, Ross, Anderson, and Clark (1994) interviewed 83 adults with confirmed diagnoses of schizophrenia to determine what symptoms they experienced and whether they had experienced abuse in their childhood. A total of 37 (45%) participants reported a history of abuse; those with reported abuse were more likely to have experienced more severe levels of hallucinations and delusions than those without reported abuse. The authors speculated that abuse history may be one possible factor contributing to a form of schizophrenia characterized primarily by positive symptoms.

Examining psychosocial function among 156 homeless adults diagnosed with both severe mental illness and substance abuse disorder, Blankertz, Cnaan, and Freedman (1993) reported that nearly 90% of the sample acknowledged experiencing some kind of childhood trauma. In addition, the researchers suggested that abuse history was a risk factor for substance abuse and homelessness.

Pursuing the links between childhood trauma history and social functioning, Lysaker et al. (2001) assessed the quality of work and psychosocial functioning of 54 individuals with schizophrenia, 19 of whom had been sexually abused as children and 35 of whom had no abuse history. Analyses revealed that the group who reported childhood sexual abuse demonstrated poorer current work functioning, possessed fewer of the basic psychological building blocks necessary for sustaining intimacy, and demonstrated a heightened vulnerability to emotional turmoil, self-doubt, and affective instability.

However, one limitation of these and other similar studies is that all assessments were performed concurrently, and it is unclear whether trauma history is related prospectively to fluctuating levels of symptom severity and psychosocial functioning. To address this issue, Lysaker, Beattie, Hunter, Strasburger, and Davis (2005) compared the biweekly ratings of positive symptoms and emotional discomfort symptoms, as well as weekly accounts of hours worked, during 4 months of rehabilitation for 12 participants with a schizophrenia spectrum disorder and childhood sexual abuse history and for 31 participants with a schizophrenia spectrum disorder and no childhood

sexual abuse history. Examination of these ratings, performed by raters on the research team unaware of the presence or absence of a sexual abuse history, revealed that the group with an abuse history had consistently higher levels of positive symptoms and emotional discomfort symptoms and poorer participation in vocational rehabilitation. In addition, the results revealed that the group with an abuse history worked fewer hours over time, relative to the group without an abuse history. When specific positive and emotional

not merely more severe ones? To explore this, Hardy et al. assessed the rates of four kinds of hypothesized associations between traumas and hallucinations (direct, indirect, stress, and none) in 75 participants with nonaffective psychosis. In the 40 participants who had experienced trauma, 12.5% had hallucinations in which the content was similar to that of their trauma, 45% had hallucinations in which the themes but not the content matched their trauma, and 42.5% had no identifiable associations between their hallucinations and previously experienced trauma. Traumas rated as intrusive were associated with hallucinations rated as intrusive, although intrusive hallucinations were not associated with trauma in general. Having been a victim of sexual abuse or bullying were two kinds of trauma that were more likely than others to be associated with hallucinations.

In addition to the association between trauma and the kind and severity of hallucinations, there is evidence to suggest the experience of traumatic events may affect the presentation of other kinds of symptoms in individuals with schizophrenia. Given the possible association between trauma and anxiety symptoms in schizophrenia, some studies have explored possible links between trauma history, PTSD symptoms, and general functioning. For example, Lysaker, Davis, Gatton, and Herman (2005) gathered data on trauma history, PTSD symptoms, social anxiety, and state and trait anxiety from 40 individuals with schizophrenia spectrum disorders and 11 with PTSD with no history of psychosis. Participants with schizophrenia spectrum disorders were divided into those with ($n = 21$)

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discomfort symptoms were examined, the participants reporting abuse had significantly higher levels of hallucinations and anxiety over time. Examination of the mean ratings for severity of hallucinations and anxiety in the group reporting abuse also revealed that these scores changed substantially from week to week, possibly pointing to greater vulnerability to emotional unrest among those with a history of sexual abuse.

Given the possible links between trauma and hallucinations, Hardy et al. (2005) examined whether the kind and content of hallucinations were related to trauma history. In other words, do traumatized individuals with schizophrenia have different kinds of hallucinations,

and without ($n = 19$) a history of childhood sexual abuse. Analyses revealed that the schizophrenia group reporting abuse had significantly higher levels of dissociation, intrusive experiences, and state and trait anxiety than the schizophrenia group that had not been abused. However, groups did not differ statistically on levels of anxious arousal, defensive avoidance, or social anxiety. When compared with participants with PTSD and no psychosis, the schizophrenia group reporting abuse had significantly lower levels of anxious arousal and intrusive experiences but failed to differ statistically on other scores.

Finally, to explore the significance of PTSD symptoms on general functioning, Calhoun, Bosworth, Stechuchak, Strauss, and Butterfield (2006) obtained assessments of quality of life, health service use, and comorbid PTSD (due to any of a wide range of causes) from 165 male veterans who had primary schizophrenia. Results revealed that participants with comorbid PTSD had a significantly decreased quality of life, a twofold increase in the use of medical services, including more psychiatric hospitalizations, and a twofold increase in outpatient nonpsychiatric medical visits.

In summary, research from a variety of settings considered as a whole suggests that a history of trauma, particularly sexual trauma, prior to onset of illness in schizophrenia may be of clinical significance and may be linked with a particular clinical profile. In particular, individuals with trauma histories may experience more volatile fluctuations in levels of anxiety and hallucinations. The hallucinations they experience may be similar in content or theme to the trauma

they experienced, and all of this may be linked with PTSD symptoms, greater difficulties sustaining work, and the need for more medical care.

IMPLICATIONS FOR CASE CONCEPTUALIZATION: AN INDIVIDUAL EXAMPLE

Although this research presents a compelling picture of the lasting effect of trauma on individuals seeking to recover from schizophrenia, it is important to consider how this information can help clinicians make sense of

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the experience of these individuals. Does possessing this knowledge help to differently frame the struggles of individuals with schizophrenia who have a trauma history? To provide an example of how this may be so, we have chosen to discuss the case of Purcell*, which has been presented elsewhere to describe psychotherapy techniques for individuals with severe levels of disorganization (Lysaker & Lysaker, 2006).

Purcell is a man in his 40s with schizophrenia, disorganized subtype. His speech is loud and rapid, with frequent loose associations. His affect ranges from blunted to inappropriate, with occasional poorly modulated expressions of anxiety, seemingly untied to the

environment. He is hypervigilant, believes others can enter his body and cause pain, hears voices others cannot hear, and believes he was persecuted by an "other" who seems to be everyone around him. He had been hospitalized for more than 20 years in an institution where he received custodial care. For that period of time, he had no close friends, employment, or contact with family. He had many legal problems in adolescence and adulthood. Physically, he was in poor health and experienced chronic pain. Neurocognitive testing indicated profound deficits, and trials of a variety of medications resulted in limited benefit.

The following is an example, with all identifying information removed or altered, of how Purcell described his condition early in his psychotherapy:

Because it's hard finding yourself again. Anybody can come up with a question and turn the whole picture around. Anybody can find an answer, and they can't stand you. But if you got something to hold,

that you can hold against them, that'll tear you to pieces and tear them to pieces. And somebody may be sticking up for your life on one side, and on the other side, it may be your own family. They don't want them to take your part....

I went absent without giving notice a few times from the service while I was in there. I don't know why...it was my fault, because either way if I didn't go absent without leave, if I stayed in there I was in great danger. I already had something wrong with me, accidents that were inflicted and accidental, and in ways of life, I had a challenge because there was a great opportunity going on then by surrounding companies and stuff. A person can make a living outside the company and don't have to work for the com-

* Name changed for anonymity purposes.

pany, which is bad in one sense and good on the other sense. This is mixed up, but I can't align the stories straight because they're all different time frames.

With knowledge of the possible importance of trauma, it was natural to ask Purcell about whether he had been a victim of trauma. He experienced severe anxiety and reported that something was "wrong" with him and that part of what was wrong was "inflicted." Yet, when asked about trauma history, Purcell was evasive and seemed to deny trauma more than acknowledge it. Sensitive to the possibility of trauma, Purcell's psychotherapist heard more references to "accidents" inflicted on Purcell, and eventually, Purcell acknowledged that he had been a victim of a sexual assault when he was a boy by a man in a position of trusted authority: "We went to look at the books in his library and he attacked me...like an animal."

With continued psychotherapy, Purcell developed the capacity to recognize and distinguish his own thoughts and feelings in sessions. He also began to discuss his past experiences with more clarity and detail, and sexual feelings were reawakened. However, instead of Purcell experiencing pleasure with this accomplishment, it awakened feelings of pain. Purcell expressed feelings of intense rage. He began abusing substances and engaged in many self-destructive acts. Purcell explained that he was "overcome with ideas and images" and "flooded with hatred." He quit work and said that "neglecting myself" is the only way he knew how to "manage" the flood of feelings and memories that "destroyed" him.

So can knowledge of the effects of trauma on schizophrenia help us understand this admittedly complex set of issues? How does it make sense that Purcell

first became healthier and then suddenly engaged in a variety of self-destruction and much was lost? We would suggest that the literature reviewed in this article allows for at least one hypothetical explanation of this. Initially, Purcell was engrossed in his own psychotic experiences and was withdrawn from the world. He experienced the heightened hallucinations, anxiety, and social withdrawal linked empirically to trauma, but being at such a distance from intimate contact with others, Purcell was protected from the intrusive reexperiencing of his trauma. As his psychosis was addressed through psychotherapy, he formed connections to others and suddenly was prey to the traumatic reexperiencing of his trauma, coupled with extraordinary levels of anxiety and rage, which led again to withdrawal and attempts to medicate or soothe himself with alcohol. Thus, Purcell's self-destruction makes sense, and some of the underlying causes can be recognized and possibly addressed.

SEQUELAE OF TRAUMA: IMPLICATIONS FOR ASSESSMENT AND INTERVENTION

With so many possible links between trauma and dysfunction, what steps can clinicians take when working with individuals with schizophrenia and a trauma history who are seeking to recover? There is still little known about how to help with matters that are only now coming fully to light. Nevertheless, we suggest there are at least five related critical implications for practitioners.

Awareness Is Essential, and Assessment May Take Time

First, clinicians must be aware that there is a high incidence of trauma among those

with schizophrenia, and clinicians should assess this in an ongoing and sensitive manner. Although quite a bit of folklore exists in mental health that individuals with schizophrenia should not be encouraged to delve into their pasts, understanding the life histories of these clients is as essential as it is when trying to understand the dilemmas of any human being's life, regardless of whether they experience psychosis or any other condition.

Clients should be asked about trauma history using language they understand and in a manner that respects their right to disclose what they want about themselves at a pace they choose. Clients should not feel forced or coerced into revealing trauma, nor should they feel the need to invent trauma to please or silence the clinician. As highlighted in Purcell's case, assessment may take time and patience. Probable factors that enabled Purcell to disclose his trauma history were certainty that the clinician would not reject him, would not be overwhelmed by the knowledge, would not force him to discuss it once it was disclosed, and was not personally invested in unearthing traumatic events or rescuing the client.

Engagement May Expose Clients to Pain

Clinicians should understand that by becoming more engaged with others and daily life in general, clients with trauma histories may experience more anguish, pain, depression, or anxiety. In other words, with health, pain may come. It is possible that with gross detachment from others, individuals may be shielded from the effects of trauma. Consequently, greater connections with others may result in levels of distress

KEY POINTS

1. Many individuals with schizophrenia have experienced trauma prior to the onset of illness. Having a trauma history may lead to poorer outcomes for these individuals.
2. It is important to assess trauma history when treating people with schizophrenia.
3. Trauma may be a focus of treatment through a variety of methods.
4. Clinicians are encouraged to help clients persevere and develop ways to cope with their trauma histories, so they may achieve recovery in schizophrenia.

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for which they may have few healthy coping mechanisms. It is important to note here that the cognitive impairments that accompany schizophrenia may also cause difficulty for clients in processing not only their trauma but also what is happening when they have flashbacks or intrusive memories.

For example, as in Purcell's case, clients with an already limited sense of self (Lysaker & Lysaker, 2006) may feel that it is especially impossible to make sense of traumatic events that defy the most basic boundaries between individuals (e.g., one person harming another physically or sexually). Clinicians may need to use extra care in helping clients make sense of the pain that seems to accompany health improvements. In Purcell's case, it became immediately necessary to understand the role of "self-neglect." What did it protect him from, and did he want to "be the king of self-neglect" for the rest of his life? Cognitive interventions that help clients recognize their thoughts and consider how those thoughts are linked with emotions may be effective for clients who wrestle with what they think and feel.

The Therapeutic Relationship Is Not Without Complications

Therapeutic relationships, whether in psychotherapy, case management, or rehabilitation interventions, may be stormy. With the confusion that comes from coping with emergent memories of trauma, clients may view clinicians as threatening and perhaps as potential perpetrators of additional abuse. Clinicians may be perceived as authority figures against whom clients may rebel, or they may be considered caring persons who have taken advantage of them in the past.

There may be considerable testing of the safety of the relationship, which makes it all the more important, as in all therapeutic relationships, for clinicians to maintain boundaries, remain objective, and refrain from displays of unsolicited empathy or advice. Purcell alternately saw the therapist as a predator and as a savior, and both perceptions had to be processed.

Anxiety May Need to Be Addressed Pharmacologically

During rehabilitation or psychotherapy, the experience of anxiety, while at times motivat-

ing, can also be immobilizing and devastating, and clients may need to receive adjunctive pharmacological interventions. Clinicians might want to consider medications that address anxiety, nightmares, or an exacerbation of positive symptoms; alleviating such symptoms can allow clients to process material that is otherwise overwhelming.

Clinicians Should Always Encourage Clients to Improve

Finally, we advocate that, as with all clients with schizophrenia, despite levels of pain and discomfort, clinicians not retreat into a position where they protect clients and discourage them from trying to improve their lives. Clients with schizophrenia and trauma histories may have a particularly difficult time working and socializing, but the chance for a satisfying life should be considered possible by clinicians and always encouraged as a goal.

SUMMARY

Significant numbers of adults with schizophrenia have experienced trauma in their past. This trauma history may be linked with relatively higher levels of hallucinations, anxiety-related symptoms, and poorer psychosocial outcomes. Clinicians treating people with schizophrenia should assess trauma history and help clients learn to cope with the consequences of trauma, as appropriate.

REFERENCES

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text Rev.). Washington, DC: Author.
- Bebbington, P.E., Bhugra, D., Brugha, T., Singleton, N., Farrell, M., Jenkins, R., et al. (2004). Psychosis, victimization and childhood disadvantage. *British Journal of Psychiatry*, 185, 220-226.
- Blankertz, L.E., Cnaan, R.A., & Freedman, E. (1993). Childhood risk factors in dually diagnosed homeless

- adults. *Social Work*, 38, 587-596.
- Calhoun, P.S., Bosworth, H.B., Stechuchak, K.A., Strauss, J., & Butterfield, M.I. (2006). The impact of posttraumatic stress disorder on quality of life and health service utilization among veterans who have schizophrenia. *Journal of Traumatic Stress*, 19, 393-397.
- Goodman, L.A., Thompson, K.M., Weinfurt, K., Corl, S., Acker, P., Mueser, K.T., et al. (1999). Reliability of reports of violent victimization and posttraumatic stress disorder among men and women with serious mental illness. *Journal of Traumatic Stress*, 12, 587-599.
- Hardy, A., Fowler, D., Freeman, D., Smith, B., Steel, C., Evans, J., et al. (2005). Trauma and hallucinatory experiences in psychosis. *Journal of Nervous and Mental Disease*, 193, 501-507.
- Janssen, I., Krabbendam, L., Bak, M., Hanssen, M., Vollebergh, W., de Graaf, R., et al. (2004). Childhood abuse as a risk factor for psychotic experiences. *Acta Psychiatrica Scandinavica*, 109, 38-45.
- Kessler, R.C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C.B. (1995). Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*, 52, 1048-1060.
- Lysaker, P.H., Beattie, N.L., Hunter, N.L., Strasburger, A.M., & Davis, L.W. (2005). Reported history of child sexu-
- al abuse in schizophrenia: Associations with heightened symptom levels and poorer participation over four months in vocational rehabilitation. *Journal of Nervous and Mental Disease*, 193, 790-795.
- Lysaker, P.H., Davis, L.W., Gatton, M.I., & Herman, S.M. (2005). Associations of anxiety related symptoms with reported history of childhood sexual abuse in schizophrenia spectrum disorders. *Journal of Clinical Psychiatry*, 66, 1279-1284.
- Lysaker, P.H., & Lysaker, J.T. (2006). Psychotherapy and schizophrenia: An analysis of requirements of an individual psychotherapy for persons with profoundly disorganized selves. *Journal of Constructivist Psychology*, 19, 171-189.
- Lysaker, P.H., Myers, P.S., Evans, J.D., Clements, C.A., & Marks, K.A. (2001). Psychosocial correlates of childhood sexual trauma in schizophrenia. *Psychiatric Services*, 52, 1485-1489.
- Resnick, S.G., Bond, G.R., & Mueser, K.T. (2003). Trauma and posttraumatic stress disorder in people with schizophrenia. *Journal of Abnormal Psychology*, 112, 415-423.
- Ross, C.A., Anderson, G., & Clark, P. (1994). Childhood abuse and positive symptoms of schizophrenia. *Hospital and Community Psychiatry*, 45, 489-491.
- Spauwen, J., Krabbendam, L., Lieb, R., Wittchen, H.U., & van Os, J. (2006). Impact of psychological trauma on the development of psychotic symptoms: Relationship with psychosis proneness. *British Journal of Psychiatry*, 188, 527-533.
- Whitfield, C.L., Dube, S.R., Felitti, V.J., & Anda, R.F. (2005). Adverse childhood experiences and hallucinations. *Child Abuse and Neglect*, 29, 797-810.

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