Treatment of Psychosis and Risk Assessment for Violence

In the trial of Daniel M'Naghten for the 1843 shooting of the British Prime Minister's secretary, Edward Drummond, the jury accepted that the defendant was not guilty because he was suffering from a "disease of the mind" and that a resulting "delusion carried him away beyond the power of his own control … over acts which had connexion with his delusion" (1). While this verdict excited considerable controversy at the time and not all contemporary jurisdictions accept a legal defense of mental illness, it remains conventional wisdom that severe mental illnesses in general and delusions in particular are causally associated with violence. However, not all empirical studies support this association, and the role of delusions remains controversial. For example, a well-known meta-analysis by Bonta et al. (2) found that violent recidivism was less common among those with psychosis than among other released prisoners. In the MacArthur Violence Risk Assessment Study, delusions did not increase the overall probability of violence among patients released from psychiatric hospitals (3).

In this issue of the *Journal*, Robert Keers, Ph.D., et al. (4) report the findings of an elegant, longitudinal prospective study of 967 British prisoners, incarcerated for a sexual or violent offense, who were followed up for a mean of 39.2 weeks (SD=33.0) after their release. Most were men, and almost a quarter suffered from a psychosis defined as schizophrenia, delusional disorder, or drug-induced psychosis. The authors asked the following three related questions:

1. Is psychosis a risk factor for violent offending after release?
2. Is treatment for psychosis important in the relationship between symptoms and violence?
3. Which symptoms of psychosis are associated with violence?

In answer to the first question, they found that, before and after statistical adjustment for factors such as age, gender, and substance use, schizophrenia and delusional disorder were not significantly associated with later violence. Furthermore, drug-induced psychosis was not associated with violence after substance use was taken into account. Second, they found that patients with untreated schizophrenia were almost four times more likely to be violent than those with treated schizophrenia or no psychosis. Third, the data suggest that the emergence of persecutory delusions partially explained the association between untreated schizophrenia and violence.

Viewed alone, this study may not change the views of those who believe the association between psychosis and violence is important, trivial, spurious, or nonexistent. Like earlier studies, this one has limitations. The comparator group for those with psychosis consisted of previously violent offenders without psychosis who may have had other risk factors for violence other than psychosis, thus reducing the possibility of finding an association between psychosis and violence. Furthermore, the small number of individuals who had untreated psychosis increased the possibility of a chance association between delusions and violence in this subgroup.

However, a number of observations emerge when this study is seen in the context of other recent research. First, it is likely that the negative finding with respect to psychosis and violence was a result of the nature of the comparator group of released prisoners. Meta-analyses of studies of the violence risk of patients with psychosis using community comparisons have fairly consistently suggested a modest but significant association between psychosis and violence (5, 6).

Second, the finding that nontreatment for psychosis is associated with violence is consistent with recent research. Most studies of violence risk have examined the violent acts by patients who had been previously diagnosed and treated. Few studies have compared the violence risk of treated people with psychosis with the violence risk of people with untreated psychosis. However, a meta-analysis found that patients with never-treated psychosis had a much higher rate of homicide compared with people who had received earlier treatment for psychosis (7).

Third, the finding of an association between persecutory ideas and violence among untreated patients also aligns in a broad way with the results of recent studies that used detailed approaches to considering how and when delusions might lead to violence. For example, one recent study found that the interval between the recording of the delusions and the act of violence mediated the strength of the association (8). On the other hand, a second study found that persecutory delusions were associated with violence only when they were also associated with an angry affective state (9).

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The most important implications of the Keers et al. study are that in some circumstances, delusions might well be associated with violence and that the use of antipsychotic treatment, at least among released prisoners with psychosis, is likely to prevent some acts of violence.

The study does not mean that other factors are unimportant. Male sex, young age, prior offending, and substance abuse are the most well-established risk factors for violence; this also applies to those with psychosis. However, the study does point to the complexity of the antecedents to violence in psychosis. Complex interactions between substance use and psychosis (10) and between delinquency and positive symptoms (11) are known to influence violence risk. Here, too, the message appears to be that the association between mental illness and violence is complex, with multiple interacting risk factors.

Simple explanations, such as the flow of events leading from untreated mental illness to delusions to anger to violence, are plausible and easy to understand in retrospect. However, when viewed prospectively, apparently simple events are more complex and involve subtle interplays between patients' personality, their illness and its treatment, their community, and their own decision making.

The complex nature of violence risk factors should not be underestimated. As currently formulated, violence risk assessment instruments generally do not consider interactions between risk factors. They operate by simply adding risk factor items to obtain an overall risk score. It remains to be seen whether future risk assessment instruments can be improved by methods that acknowledge the complexity of violence risk factors.

If risk assessment is to prove its worth as a rational way of making treatment decisions about psychosis, future improvements would need to be dramatic. One study examined the utility of a hypothetically excellent risk assessment instrument that could define a high-risk group with 16 times the probability of violence than a low-risk group (12). It concluded, as have other studies, that even under highly optimal conditions, the proportion of true positive cases among high-risk groups was far too low to serve as a rational basis for treatment (13) and that risk assessment is insufficiently sensitive to provide a basis for the protection of the public (14).

Finally, the findings of Keers et al. suggest another problem if a risk assessment is to be used as a basis for deciding who will be treated for psychosis. In replication studies, existing risk instruments can identify groups of high-risk patients who are approximately three times more likely to be violent than low-risk patients (15). However, Keers et al. found that untreated patients were four times more likely to be violent than treated patients. These figures suggest that if risk assessment is used to define a high-risk group of individuals who need treatment and a low-risk group of individuals who do not need treatment, then the failure to treat low-risk people with psychosis will inevitably result in some violent events.

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Dr. Large has received speaker's fees from AstraZeneca to discuss risk assessment, and he has served as an expert witness in cases involving violence risk. Dr. Freedman has reviewed this editorial and found no evidence of influence from these relationships.