**SPECIAL REPORT: FORENSIC PSYCHIATRY**

# Violence Risk Assessment: Using the Oxford Mental Illness and Violence Tool

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Clinical psychiatry is shifting towards precision medicine. Until now, one-size-fits-all strategies have had a patchy success rate, leaving many patients with delayed diagnoses, uncertainty about their care, and suboptimal treatment. By harnessing the opportunities provided by big data, new research is investigating how diagnosis, prognosis, and treatment can be personalized.

In terms of prognosis, clinical prediction models can provide individual-level risk estimates for important future outcomes.[1] These models statistically combine data on risk factors from large datasets to assess the risks of serious adverse outcomes for mental health, such as suicidal behaviours, violence towards others, and severe relapses in mental state. These can be translated into risk assessment tools, which allow clinicians to input information on individual factors, which can be used to calculate a risk for that individual based on the underlying statistical model. Such tools based on high-quality prognostic models can complement clinical assessment and assist clinicians in making more evidence-based decisions, particularly early in the patient pathway. This is especially important for estimating the risk of perpetration of violence and criminality, which is increased in those with severe mental illness and affects a minority of patients.

For example, individuals with schizophrenia spectrum disorders have a risk that is 2 to 5 times higher than the general population (including in studies with careful adjustment for confounders, in individuals without diagnosed comorbidities, and in sibling comparisons that inherently account for shared background familial factors such as early environment).[2] This

risk increases further with comorbid substance misuse,[2] and absolute rates vary according to illness stage and setting.[3] Moreover, a review of the prevalence of violent outcomes in psychiatric patients found some patient groups with elevated rates. This included around a fifth of individuals who present in psychiatric emergency settings in the next 12 months and more than a third in involuntarily committed patients and first-episode psychosis patients, also over the subsequent 12 months **(Figure 1)**.[3] More recent work in first-episode psychosis has also found that around 1 in 10 have violent outcomes that lead to police contact in the year after referral to mental health services.[4]

These observational studies highlight the need for accurate and validated violence prediction tools in this population, which, if linked to effective interventions, can assist in reducing future risks. While some risk assessment approaches and instruments exist, such as the Historical Clinical and Risk Management – 20, they are mainly used in forensic mental health and may have limitations if used in general psychiatry. One significant limitation is that they are often overly time-consuming and costly. For example, some of these older risk assessment approaches, particularly those described as structured clinical judgment tools, take up to 16 hours to complete,[5] making them impractical for clinical use. Another shortcoming is that they do not provide probability scores for individuals but only categorize them into broad groups of low, medium, and high risk. However, classification (using cut-offs) is not a good aim when models are relatively accurate—here, you will want to know probabilities. This is exactly how the Framingham score (or, for that matter, the weather) is communicated—not in a categorical way of yes/no but in relation to probabilities, which allows individuals to decide how to act depending on the decision to be made and its implications (eg, changing diet or adding a statin or not). Additionally, structured clinical judgment tools typically show poor predictive accuracy in real-world clinical settings compared to research settings, raising concerns about their everyday clinical use. This is

likely because these tools were developed using small sample sizes, focused on a specific patient population (eg, forensic patients), and were not externally tested in real-world settings different from the one in which they were developed.[6,7]

Therefore, novel tools are required to assist clinicians in making well-informed decisions, facilitating early interventions, and ensuring consistency in risk assessment within and across clinical teams. A new generation of tools that provide probability scores have been developed using population-based registers that cover a wide range of patient populations and provide extensive information about them over time.

One of these, using data from more than 75,000 individuals with severe mental illness in Sweden, is the Oxford Mental Illness and Violence (OxMIV) tool, which aims to assist clinicians in assessing the risk of violence within 12 months of assessment among individuals with schizophrenia spectrum and bipolar disorders. The tool was built with 16 risk factors, including demographic, criminal history, and clinical variables, such as age, sex at birth, previous violent crime, past drug or alcohol misuse, and recent antipsychotic treatment.[8] The OxMIV tool has been validated and updated across diverse patient populations in England, Germany, and the Netherlands,[9-11] demonstrating applicability in different clinical settings. Clinicians can easily access its user-friendly interface online, making it simple to integrate into practice (**Figure 2**).

For example, when a clinician assesses the risk of violence in an individual with schizophrenia spectrum disorders or bipolar disorder, they can quickly enter all necessary data into the OxMIV calculator and estimate the individual's risk level in percentages. Risk estimates become less accurate and clinically useful at very high levels; therefore, they are presented at a maximum of 20%. Importantly, OxMIV allows unknown values for some risk factors (providing a range of predicted risks).

Integrating OxMIV and similar novel tools into clinical practice can complement clinical assessment and improve clinician confidence in making early personalized decisions to improve patient care, such as:

- Initiate early discussions on strategies to reduce medium and longer-term violence risk with patients and their families.
- Collaborate with multidisciplinary teams to identify appropriate next steps for more detailed assessment and care.
- Target modifiable risk factors, such as substance misuse, nonadherence, and/or effectiveness of medication, impulsivity, unstable living conditions, and disengagement from services.
- Develop crisis plans with caregivers, family, and staff to efficiently manage emergencies.
- Collaborate with other services, including police, probation, substance misuse, housing, and social services.[12]

As psychiatry embraces precision medicine, the use of validated and scalable risk prediction tools can potentially improve mental health outcomes. Integrating these tools into clinical practice can assist violence risk assessment and allow for more personalized decisions early in the treatment process, benefiting patients and their families while improving safety and well-being.

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**Figure 1. Estimated Mean Prevalence of Violence Perpetration in Psychiatric Patients by Study Setting Over 6-12 months: Pooled Estimate[3]**

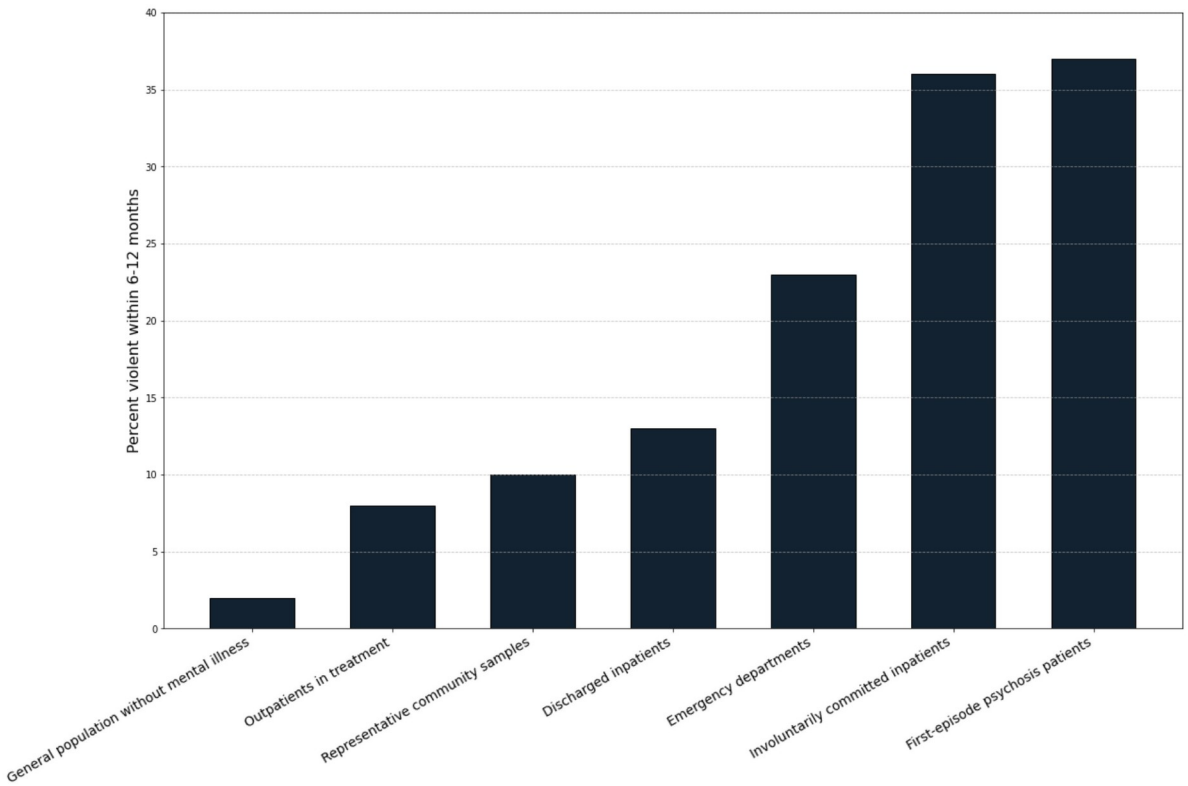


**Figure 2. OxMIV's Web-Based Interface**

OXMIV
MENTAL ILLNESS AND VIOLENCE

Sex

Male

Age

30

Previous violent crime

No

Previous conviction for a violent offence (lifetime). Violent offence defined as homicide, assault, robbery, arson, any sexual offense (rape, sexual coercion, child molestation, indecent exposure, or sexual harassment), illegal threats, or intimidation. Where there is clear history of clinically significant violent offending behaviour that for some reason did not result in a formal conviction, e.g. due to occurring in hospital or resulting in a caution, you can consider scoring this item as "yes", and incorporating it into overall clinical judgement.

Previous drug misuse

No

Previous diagnosis of drug use disorder (lifetime). Past evidence of drug use disorder – either from documented diagnosis, past contact with drug rehabilitation/treatment services, or detailed history.

Previous alcohol misuse

No

Previous diagnosis of alcohol use disorder (lifetime). Past evidence of alcohol use disorder – either from documented diagnosis, past contact with alcohol rehabilitation/treatment services, or detailed history.

Previous self-harm

No

Previous episode of self-harm (lifetime).

Highest education*

Secondary

Formal schooling: secondary (to age 16), upper secondary (to age 18), post-secondary (past 18).

Parental drug or alcohol use*

No