

# Mood disorders and violence: a new focus

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ARTICLE

## SUMMARY

Violent behaviour in people with a psychiatric disorder causes great public concern and leads to stigma for people with mental illness. There is good evidence for a correlation between schizophrenia and increased rates of violence but any association between mood disorders and violence has been comparatively overlooked. It appears that there may be more evidence relating mood disorders and violence than many clinicians realise. This article highlights the difficulties in assessing this, summarises what is known and discusses what this means for clinical practice.

## DECLARATION OF INTEREST

None.

or other extreme affective states, often interacting with disinhibitors such as intoxication. So it might be thought that mood disorders, with their prominent symptoms of dysphoria, irritability and anger, and their intrinsic tendency to weaken internal inhibitions, would be associated with violence at least as much as schizophrenia. But received wisdom tells us that this is not the case, that violence in mood disorders is unusual.

## A preoccupation with psychosis

In marked contrast to schizophrenia, there has been scant consideration of the relationship between mood disorders and violence, although Kunjukrishnan & Varan (1992) describe some early surveys of mentally disordered offenders. In part this situation reflects the status of schizophrenia as the archetypal psychiatric disorder, attracting a disproportionate amount of research interest. But forensic psychiatry in particular has always indulged itself in a preoccupation with psychosis to the exclusion of mood disorders. This is reflected in the two major UK textbooks on forensic psychiatry, both of which take a peculiarly 'forensic' approach to categorising mental illness. Bluglass & Bowden (1990) used the ICD-9 dichotomy of psychosis and neurosis in their three chapters entitled 'Schizophrenia', 'Affective psychosis' and 'Neurosis'. This was despite the publication of the 1986 draft of chapter V of ICD-10, which was used by other contemporaneous psychiatric texts. Similarly, following publication of ICD-10, Gunn & Taylor (1993) included in their book chapters on 'Psychosis, violence and crime' and 'Non-psychotic violence', the latter being a brief overview of major criminological, social and psychological paradigms and bearing no substantial reference to mood disorders or any other mental illness. The UK prison epidemiological surveys (discussed below) carried out in the 1990s have continued the tendency to give a diagnostic hierarchical primacy to psychosis.

In this article we review the available evidence addressing the relationship between mood disorders and violence. We suggest that there is a relative lack of evidence, although there is

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The evidence discussed by Mullen (2006) in the pages of this journal clearly shows that the correlation between schizophrenia and violence is not just statistically significant but is clinically and socially so. This increased rate of violence is mediated by a wide variety of cofactors, particularly substance misuse and personality disorder, but even after controlling for such factors a small increased risk remains. This consensus position has emerged after some 30 years of debate and previous denial, which was founded on ideology as much as evidence. It is an important consensus, offering the hope of improved public education and awareness, better service provision and a better collaboration between the multitude of professions, disciplines and services concerned with these issues. The opinion-dominated literature has less often acknowledged that even if there were no demonstrable statistically significant increase in the rate of violence in people with schizophrenia as a group, psychiatry might still have an important public protection role to play for individual patients in whom the two co-exist. Authors such as Mossman (2000) and Hart et al (2007) have eloquently explicated the problems that arise from basing individual risk management on group-derived associations.

Most societal violence is not mediated by psychosis, being more often associated with anger

perhaps more than is often acknowledged. This lack of evidence may sometimes be interpreted as evidence of a lack of association, potentially leading to a bias in clinical practice. We suggest that as a result of this and other factors, mood disorders may be underrecognised in patients who present to psychiatric services with an apparent risk of violence.

### **Specific associations between mood disorders and violence**

#### *Depression and homicide–suicide*

Homicide–suicide describes the situation when a person kills someone (often a spouse or relative) and then takes their own life. In England and Wales it is estimated that homicide–suicide accounts for 1% of all homicides (Barraclough 2002). A Dutch study found that a firearm was the most frequently used method for the homicide and the suicide and that 23% of perpetrators failed in their suicide attempt (Liem 2007). Homicide–suicide has been commonly associated with depression and one case series found that 75% of perpetrators were depressed at the time (Rosenbaum 1990). Elderly men with depression are a particular risk group, especially where there is a history of domestic violence and the husband is a caregiver to the potential victim (Malphurs 2005). It may be that older men are rarely considered as possible perpetrators of violence and aggressive thoughts are not routinely enquired about when assessing elderly men suffering from depression.

#### *Depression and infanticide*

Infanticide is the killing of a child by its mother before its first birthday, very commonly in the context of post-partum depression (Taquchi 2007). It may be distinguished from neonaticide (a baby being killed within the first day of life) and filicide (the killing of a child on or after its first birthday). Two motivational profiles have been identified: mothers who committed neonaticide were mostly troubled by psychosis and social problems; and mothers who committed filicide were defined as severely depressed, with a history of self-directed violence and a high rate of suicide attempts following the filicidal offence (Krischer 2007). Identification of postnatal depression has been improved by midwives and health visitors using tools such as the Edinburgh Postnatal Depression Scale (Cox 1987). The National Institute for Health and Clinical Excellence guidelines on antenatal and postnatal mental health (2007) prioritise the detection of depression and specify screening questions to be used by healthcare professionals.

### **A wider association between mood disorders and violence?**

Affective states, particularly anger and irritability, play a role in aggressive behaviour and are influenced by serotonergic mechanisms. Extensive literature dating back to the 1960s has suggested a link between decreased serotonin function and aggression, probably mediated through impulse control, affect regulation and social functioning (Krakowski 2003). The evidence relating to a clinical association between mood disorders and violence may consider the rate of violence in relation to in-patient treatment of depression, the rate of depression in violent or offender populations and the rates of co-occurring depression and violence in the community.

#### *Admission studies*

There are many studies, invariably retrospective, investigating patients' rates of violence before admission to hospital with schizophrenia, but there is limited evidence relating to mood disorders. Studies describing rates of violence by diagnosis give conflicting results. Fux et al (1995) found aggressive behaviour to be a less common reason for admission in patients with mood disorders than in those with schizophrenia. In contrast, Binder & McNiel (1988) reported that similar rates of violence occurred before admission in patients with mania or schizophrenia, and both were significantly more likely to be violent than those with other diagnoses. Patients with mania were most likely to be assaultive during the acute phase of admission to hospital. They pointed out that people with mania have a high potential for loss of impulse control, which could result in violence. It was also hypothesised that the irritability and lability of patients with mania may make them more prone to unpredictable assaultive behaviour than patients with schizophrenia, making it difficult for staff to intervene. It may be that violence among patients with mood disorders is underreported because violence by in-patients is less likely to be reported or prosecuted than violence in the community. It is also possible that there are other differences between violence carried out by patients with mood disorders compared with those with non-affective psychosis, perhaps in terms of severity, victim type or situation, and this might affect recording.

#### *Discharge studies*

A 2-year prospective discharge study (Hodgins 1999) showed that twice as many patients with mood disorders committed crimes, most of them

violent, compared with those with schizophrenia. Substance misuse and infrequent out-patient care were associated with criminality in those with mood disorders. The MacArthur study of mental disorder and violence (Monahan 2001) is an influential study that assessed 1136 male and female patients with a baseline interview in hospital and subsequent interviews every 10 weeks in the year after discharge. Patients' self-reports of violence were augmented by informant reports obtained by frequent interviews and police and hospital records. The study reported that patients with mood disorders had higher rates of violence than patients with schizophrenia (28.5% in depression, 22% in bipolar disorder and 14.8% in schizophrenia). Thus, these rates were significantly higher in patients with co-existing substance misuse.

These two discharge studies have reported a higher prevalence of violence in patients with mood disorders compared with schizophrenia when discharged into the community. They are important as they were both prospective studies, which reduces the potential bias of reviewing a patient's history after a violent incident has occurred. Furthermore, although Hodgins et al (1999) acknowledged some methodological limitations of their study, the results of a naturalistic study may be important because the complexity of diagnostic decision-making remains. The MacArthur study also emphasised the importance of substance misuse, personality disorder and broader socioeconomic issues to violence in patients with mood disorders. The importance of these issues in clinical practice is discussed below.

### *Prison studies*

Taylor & Gunn's (1984) seminal study of psychiatric morbidity in a male remand population divided functional mental illness into psychosis and neurosis, reflecting the focus of forensic psychiatry on psychosis as the indicator of need for secure psychiatric care. They demonstrated that 1.2% of the men had affective psychosis and all of these were convicted of violent offences. More recent studies have tended to continue to use a classification based primarily on the presence of psychosis, even though the major classificatory schemes have moved away from this dichotomy. This makes it difficult to assess the relationship between mood disorders and violence, as some patients with a primary mood disorder will be included under the umbrella term of 'psychosis' and so not be differentiated from those with schizophrenia. It is challenging to disentangle

whether it is solely the psychotic symptoms that are important in moderating any risk of violence or whether the mood symptoms themselves are relevant.

A large systematic review found that 10% of male prisoners and 12% of female prisoners in Western countries have major depression (Fazel 2002). Psychotic illnesses were considered separately (found in approximately 4% of prisoners) so it is not clear what part mood disorders may have played in this category. The Office for National Statistics survey of prisoners in England and Wales (Singleton 1998) also considered diagnoses under the broad categories of psychosis and neurosis and found affective psychosis in 1–2% of prisoners. Evidence of a depressive episode was found in 17% of remand and 8% of sentenced males and 21% of remand and 15% of sentenced females. There was no consideration of the severity of these depressive episodes in terms of the usual diagnostic divisions and indeed they were assessed only by lay interviewers, whereas the prisoners with psychosis were interviewed by clinicians. A further large study of remand prisoners in England also distinguished between mood disorders with and without psychosis and found that 0.7% of the prisoners had affective psychosis and 2.3% had a major mood disorder (Birmingham 1996). A US study interviewing male prisoners found that the rates of schizophrenia, major depression and mania were two to three times higher than in the general population, even after controlling for ethnicity and age (Teplin 1990).

### **Confounding by the criminal justice system**

In determining the prevalence of mental illness among those in the criminal justice system a number of factors may influence the findings. After committing an offence, those who are mentally disordered are more likely to be arrested and also more likely to be imprisoned (Robertson 1988). However, in certain situations, particularly if the offence involves assault of a mental health professional, offenders with mental disorders are actually less likely to be charged. Convictions may also be influenced by social and political pressures. Therefore, it may also be instructive to consider homicides, a serious offence for which offenders are more likely to be prosecuted. A clinical survey of 1594 people convicted of homicide in England and Wales between 1996 and 1999 (Shaw 2006) reported that 5% had a lifetime diagnosis of schizophrenia and 7% had a lifetime diagnosis of mood disorder. Shaw et al also considered symptoms at the time of the offence by assessing psychiatric court reports and

found that 5% of offenders had psychosis and 6% were depressed. It is interesting to note that most of those with psychosis at the time of the offence had been in contact with mental health services previously, whereas most of those with depressive symptoms at the time of the offence had never been in contact. This is crucial, as it indicates the presence of unrecognised depression in the community (which can, in very rare cases, lead to homicide) and thus the importance of raising awareness of this issue.

### *Community studies*

Most people with mental illness are not admitted to hospital and most people who behave violently are not convicted of a crime or put in prison. Therefore, research using in-patients and convicted offenders underestimates the rate of mental illness and violent behaviour in the general population and potentially biases any findings about an association between mental illness and violence. For this reason studies in the community are very helpful in elucidating any association.

Swanson et al's analysis of data from the US Epidemiologic Catchment Area survey (1990) used self-report measures to examine the relationship between violence and psychiatric disorders among adults living in the community ( $n=10\,059$ ). Although self-report is a relatively blunt measure of the presence or absence of violent behaviour in association with psychiatric diagnoses, this analysis provides valuable information from a large-scale community survey. It found an equally strong association for depression, bipolar disorder and schizophrenia with reported violence. Self-reported violence was more than five times more common among respondents with depression, bipolar disorder or schizophrenia than among those who had no psychiatric disorder (11–12% v. 2%). The addition of substance misuse to either diagnosis increased the risk of violence to approximately 30%. Controlling for comorbidity suggested that a diagnosis of affective disorder alone was associated with a lower rate of violence than schizophrenia alone, although the numbers of respondents in these subcategories were small.

A large birth cohort in Denmark ( $n=358\,100$ ) followed up participants for 44 years and had access to records of all arrests and hospital admissions (Brennan 2000). People admitted to hospital for a major mental disorder were responsible for a disproportionate amount of the violence committed by members of the birth cohort: 5.2% of men and 0.5% of women with affective psychosis had a history of arrests for violent offences, compared with 11.3% of men and

2.8% of women with schizophrenia. It seemed that the presence of affective psychosis was a greater risk factor for violence in women. Compared with the base rates in the general population, the presence of affective psychosis increased the risk of violence fourfold for women, and only twofold for men. But when confounders were controlled for there was no association between affective psychosis and violence. However, the authors comment that their findings may underestimate the risk of violence in patients with mood disorders because of the design of the study and particularly the exclusion of participants who took their own life at the time of the offence, many of whom, they hypothesised, would have been depressed.

The Dunedin birth cohort ( $n=961$ ) used standardised interviews, self-reports of criminal behaviour and conviction records to examine the link between mental disorders and violence (Arsenault 2000). Both depression and manic episodes were associated with violence but not after controlling for comorbid substance misuse. In the case of patients with manic episodes, the authors felt that the numbers were too small to rule out an association. A study of self-reported violence among psychiatric patients in Israel (Steuve 1997) found that psychotic disorders and bipolar disorders were significantly associated with violence but gave no data for mood disorders as a diagnostic entity.

### *Gender and age*

Mood disorders are more common among women than men in contact with forensic services. A US study (Herjanic 1977) reported that 10% of women and 0.3% of men admitted to a forensic service over a 22-year period were diagnosed with mood disorders. Also, several studies have demonstrated a high rate of mood disorders among women in prison. A US study of the prevalence of psychiatric disorders among 1272 female prisoners (Teplin 1996) found that major depression was the most prevalent major mental disorder. They reported lifetime prevalence rates of 2.9% for a manic episode and 16.9% for an episode of major depression and also high rates of substance misuse. A UK study of women on remand identified 1% with affective psychosis and 13.9% with a major mood disorder (Parsons 2001). Of the women with a major mood disorder, nearly one-quarter were on remand for violent offences. This suggests that mood disorders may be of particular importance to violence in women.

Adolescence may also be relevant when considering mood disorders and violence. A high rate of mood disorder (42%) was found among

adolescents in a juvenile detention centre (Pliszka 2000). The high rate of mania (22%) among these adolescents was striking and far above the rate of 1% of teenagers who met criteria for bipolar disorder in a community sample. There was a strong association between mood disorder and conduct disorder; adolescents with mania had much higher rates of reported misuse of illicit substances. Severe irritability can occur in children with mania and it often leads to violence, which is less organised and goal-directed than that seen in children with conduct disorder (Weisbrot 2002).

Box 1 summarises the research evidence connecting mood disorders and violence.

### Mood disorders and violence in clinical practice

Patients who present to psychiatric services with a risk of violence tend to pose a challenge for psychiatric diagnosis, treatment and systems for delivering treatment. The following example is a fictional case based on our experience of receiving referrals for a forensic opinion from general psychiatric services.

#### A fictional case study

A 34-year-old man was referred to the forensic psychiatric service for an opinion and advice on his further management. He had been admitted to the psychiatric intensive care unit 10 days before, complaining of hearing voices telling him to kill people. He was being treated for psychosis under the terms of section 2 of the Mental Health Act 1983. The referrer also considered that he had a personality disorder and sought advice on his risk to others.

He had initially presented at the local accident and emergency department 5 days before admission, having injured himself while drunk. A psychiatric assessment was arranged in view of his voices. This concluded that he had a personality disorder and no evidence of mental illness so he was discharged. On the day of admission he was arrested on suspicion of threatening to kill the partner of his ex-girlfriend. There was also some vague suggestion that he had recently threatened an acquaintance with a bladed weapon. A second psychiatric assessment noted the presence of command auditory hallucinations to harm others and arranged admission with a provisional diagnosis of schizophrenia.

He had a history of conduct disorder and poly-substance misuse in his youth, but reported that in recent years his use of illegal drugs had declined, although he continued to drink alcohol to excess at times. He had spent a significant amount of time in prison, mostly for drug-related and violent offences, but it had been several years since he was last in custody and his frequency of offending had reduced significantly. He worked as a labourer on a building site and lived alone in a privately rented flat, receiving support from his father, who lived

nearby. Since his admission he had presented as intermittently irritable and hostile, feeling his detention unwarranted. There was little objective evidence of ongoing psychosis.

On assessment, the patient reported that since adolescence he had experienced occasional repeated thoughts of violence that would come into his mind unbidden. These were not necessarily associated with anger or antipathy and could occur quite unpredictably, for example while he was engaged in friendly conversation. He reported that he had never acted on these thoughts and that they had always caused him some distress. However, during the 3 months before admission they had become more frequent and intrusive, until sometimes it almost seemed like he was hearing a voice. He described no other symptoms spontaneously, but reported that he just hadn't been himself for these 3 months. On direct questioning he endorsed a wide range of depressive symptoms, including lack of energy, loss of interest in life, social withdrawal, loss of appetite and weight, reduced libido, irritability and poor concentration. He said that he had not been low in mood or depressed, but on further questioning described becoming tearful for no reason on a number of occasions, in a way that he had never experienced before.

Below we discuss the three major factors that might collectively lead to particular difficulty in diagnosing mood disorders in patients such as this man: diagnostic bias, atypical presentation and risk-related anxiety.

#### A diagnostic bias

The tendency of the research literature to concentrate on schizophrenia (and personality disorder) and violence might lead psychiatrists to consider that these two diagnoses are associated with violence, but that mood disorders are not. When extrapolated to individual people, this

#### BOX 1 Summary of research evidence

- Mood disorders have received much less attention than schizophrenia in relation to risk of violence but the evidence is equivocal
- In particular, prospective and community-based studies support an association between violence and mood disorders comparable to that with schizophrenia
- Further clarification of this relationship is hampered by methodological variation and a preoccupation with psychosis
- Patients with mania may be more likely to be violent as in-patients than those with schizophrenia
- Affective psychosis is present in 1–2% of prisoners
- Most of those with psychosis at the time of a homicide offence have been in contact with mental health services previously, whereas most of those with depressive symptoms have not
- Mood disorders are particularly prevalent in female offenders
- There is some evidence to suggest that mania is an important cause of violence in adolescents

might lead to an assumption that violence and mood disorders are unlikely to coexist, so that where a risk of violence is evident, schizophrenia or personality disorder are more likely diagnoses. There is evidence of just such a diagnostic bias. In a vignette-based study of diagnostic decision-making, Clark & Rowe (2006) demonstrated that psychiatrists are more likely to diagnose schizophrenia than bipolar disorder in a patient with a diagnostically non-specific psychosis if that person has a history of violence than if they do not. This diagnostic bias will be liable to lead to underreporting of mood disorders in violent populations, perpetuating this erroneous assumption.

### *Atypical presentation*

Research into the relationship between mental illness and violence consistently demonstrates the importance of mediating factors, particularly personality disorder, psychopathy and substance misuse. Violent patients may be reluctant to engage with psychiatric services and may have a variety of other psychosocial pathologies such as high levels of impulsivity or irritability, poor educational attainment, pro-criminal or antisocial attitudes and a tendency to distrust statutory services. Therefore, violent patients often present with multiple pathologies, leading to atypical presentations. Around one-third of people with bipolar disorder have a comorbid diagnosis of at

least one personality disorder, most commonly borderline personality disorder, and this may have a significant effect on misdiagnosis and prognosis, as described in this journal by Smith & Ghaemi (2006). Alexithymia is also likely to be prevalent among violent patients (Box 2), leading to atypical presentations of mood disorders. These complicating factors tend to have a greater impact on the diagnosis of mood disorders (which tends to require a dimensional judgement) than of psychosis (which is perhaps conceptualised more categorically).

The difficulty of diagnosing mood disorders in prison is well-known. It can be difficult to distinguish a depressive episode from the low mood and associated neurotic symptoms that frequently accompany incarceration and prosecution. The biological symptoms of depression are less reliably detected in an environment where sleep is never easy, food is poor and regimented, and there is limited opportunity for activities that provide interest, enjoyment and an outlet for discharging energy. A negative preoccupation with oneself and one's future is almost inevitable. Mania, particularly when associated with alcohol misuse, may lead to a 'revolving-door prisoner', who is repeatedly remanded or briefly sentenced for relatively minor offences, but who never remains in prison long enough to be properly assessed.

### *Risk-related anxiety*

Assessing people who present in a way that suggests they pose a risk to others is an anxiety-provoking situation for a psychiatrist. Often such patients present in a chaotic or uncontrolled situation. It might be difficult to gain collateral information and there may be pressure, from the police perhaps, to make prompt decisions. Under such circumstances, decisions that reduce the clinician's anxiety may be more attractive than those that sustain it. There are two low-anxiety responses or decisions:

- to decide that the patient does not have a mental illness. In this case, regardless of the level of risk posed, it is not the concern of the psychiatrist;
- to decide that the patient poses a high risk and has a very severe mental illness. In this case the presence of mental illness enables intervention and the high level of risk justifies it. The clinician's anxiety is lessened by admitting the patient to hospital, probably compulsorily.

This situation leads to a tendency to make extreme dichotomous judgements about diagnosis and risk. The first response above will tend to promote a diagnosis of personality disorder

## **BOX 2 Alexithymia**

Alexithymia (literally an absence of words for feelings) refers to an incapacity to be aware of one's emotions and feelings and to share these with other people. Important features of alexithymia include:

- difficulty identifying and describing subjective feelings
- difficulty distinguishing between feelings and bodily sensations
- constricted imaginative capacity
- an externally oriented cognitive style.

Alexithymia was first described in the 1970s as a feature of patients with psychosomatic illness, the broad hypothesis being that the inability to recognise and articulate psychic pain might lead to an alternative somatic expression of that pain. Subsequent research has demonstrated that alexithymia is a common concomitant of masked or atypical depression, as well as occurring in association with a variety of other

disorders that may be considered to lie within a broad psychosomatic collective. These include functional gastrointestinal disorders, somatoform disorders, panic disorder and eating disorders. An alternative and currently expanding strand of research has demonstrated that alexithymia is common among prisoner populations and it has been associated with aggression, substance misuse, antisocial behaviour, antisocial personality disorder, psychopathy and narcissism, as well as a variety of criminogenic psychosocial variables. In particular, the association with a tendency to uncontrolled and sometimes violent outbursts of emotion is long established, often with an inability to connect these outbursts to those underlying feelings.

See Taylor (2000) and Bermond et al (2006) for further discussion of alexithymia and its correlates.

or no mental illness. For the second response, schizophrenia may be seen as the mental illness that enables the greatest intervention and, being associated with violence, it justifies the greatest intervention. A diagnosis of a mood disorder, with its dimensional nature, uncertain relationship with risk and varying required level of intervention, may not have the same capacity to lessen the clinician's anxiety.

The fictional but representative patient described above illustrates some of these issues. The patient has a history of offending behaviour from a young age and there is evidence of a dispositional vulnerability to neurosis. The patient's history marks him out as a 'forensic' patient, as someone who may pose a risk to others, although the information about his current level of risk is inadequate. The initial assessments were made under difficult circumstances (in an accident and emergency department and in a police station) with sketchy information. It is of note that despite little change in the psychopathology, the provisional diagnosis changed from personality disorder to schizophrenia. Careful questioning uncovered a clear depressive syndrome but although the patient seemed able to intellectually acknowledge his tearfulness, somehow he did not spontaneously recognise his low mood. He tended to act out his psychological distress in a way analogous to the somatisation of other patients with alexithymia. The voices, which were considered to be indicative of psychosis, actually represented a long-standing neurotic symptom of a type seen commonly among prisoners. The worsening of such a dispositional neurosis with the onset of a depressive episode would be expected, but the atypical presentation of his depression led to a dichotomous distinction between either personality disorder or schizophrenia.

## Conclusions

The relationship between mood disorders and violence has been relatively overlooked compared with schizophrenia. Our review suggests that the evidence about this relationship may be more equivocal than many clinicians realise. It may be that comorbid substance misuse has a more significant impact on risk of violence in mood disorders than in schizophrenia, which explains why in some studies the association between mood disorders and violence did not continue when comorbidity was controlled for. However, comorbidity is almost ever-present in day-to-day clinical practice. It might not be appropriate to consider diagnoses in isolation, as is the case in research. In clinical practice this focus on

schizophrenia, combined with a tendency to atypical presentation among potentially violent patients and attempts to resolve risk-related anxiety in clinicians may lead to a bias in diagnostic decision-making and an underdiagnosis of mood disorders in violent patients.

Categorical diagnoses increase the vulnerability of clinical psychiatry to these complications, and this chimes with the current nosological debate about the relationship between schizophrenia, schizoaffective disorder and mood disorders, which has been revived from a genetic base (Craddock 2005) and which is perhaps supported by the limited research into clinical practice (Rowe 2008). Psychiatrists should be aware of these potential theoretical and clinical problems, not just in relation to homicide-suicide and infanticide, but also in relation to less catastrophic violence and broader antisocial behaviour.

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### MCQ answers

1	2	3	4	5
a f	a f	a f	a f	a t
b f	b f	b t	b f	b f
c t	c f	c f	c f	c f
d f	d t	d f	d t	d f
e f	e f	e f	e f	e f

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## MCQs

### 1 The estimated percentage of homicides that are homicide–suicides is:

- a 0.1%
- b 0.5%
- c 1%
- d 2%
- e 5%.

### 2 In relation to the MacArthur study:

- a the presence of substance misuse did not affect the rate of violence
- b there was no relationship between mental illness and violence
- c the highest rates of violence were found in people with schizophrenia
- d people with affective disorders had higher rates of violence than those with schizophrenia
- e it considered only self-reported violence.

### 3 In relation to community studies of violence and mental illness:

- a they are of little value when considering any association between mood disorders and violence
- b they can provide a more accurate estimate of the true rates of violence and mental illness
- c the Epidemiologic Catchment Area survey used very detailed descriptions of types of violence
- d they usually study only small numbers of people
- e cohort studies are not an appropriate study design.

### 4 Regarding affective psychosis:

- a it is present in 0.1% of prisoners
- b it is readily detected and treated in prisoners
- c it has attracted comparable research interest to schizophrenia
- d there is some evidence that clinicians are more likely to make a diagnosis of schizophrenia than

bipolar disorder in a non-specific psychosis in a patient with a history of violence

- e the nature of any relationship to violence is clearly elucidated.

### 5 Regarding the difficulties of diagnosing mood disorders in patients who are violent:

- a a diagnostic bias may result from the known association of schizophrenia and violence
- b alexithymia is a rare cause of masked depression
- c diagnosing a mood disorder reduces risk-related anxiety
- d violent patients are more likely to have a typical presentation
- e diagnosing psychosis may be considered to be more qualitative than diagnosing mood disorders.