



Interpersonal violence and mental illness: A literature review

ABSTRACT

There is a perception that people with a mental illness are dangerous. However, there are still arguments in the research literature as to whether the evidence supports this perception. The major aim of this paper is to review the findings of these studies in regard to the risk of violent behaviour in people with mental illness. An additional aim is to give an overview of the risk factors for violence in people with a mental illness. This systematic search of the literature resulted in good evidence that diagnoses such as schizophrenia and personality disorder are associated with an increased risk of violent behaviour. Substance abuse was the risk factor most associated with an increase in the risk of violent behaviour in people with a mental illness. However, there are substantial differences in the methods used in studies of the risk in violence in people with mental illness resulting in a large variability in the estimates of risk. One of the major causes of variation may be due to the different definitions of violence that are used. The need remains, therefore, for a meta-analysis of this literature based on clear definitions of violence in order to get a more accurate estimate of the risk of violence in people with a mental illness.

KEY WORDS

mental illness;
violence;
systematic
review,
prevalence, risk

Received 9 December 2005

Accepted 15 March 2006



DONNA GILLIES
Research Officer
Mental Health Nursing
Research Unit
Sydney West Area
Health Service
and The University of
Western Sydney
Parramatta, New
South Wales



LOUISE O'BRIEN
Associate Professor of Nursing
(Mental Health Nursing)
Mental Health Nursing
Research Unit
Sydney West Area Health
Service and The University of
Western Sydney
Parramatta, New South Wales

BACKGROUND

The perception that people with a mental illness are dangerous can arouse considerable public concern (Junginger 1996) but this belief may be based on emotion rather than fact (Mesnikoff & Lauterbach 1976). Diefenbach (1996: 496) stated the opinion that 'the public holds negative attitudes toward mental illness because the mentally ill are perceived as violent, dangerous, and unpredictable'. There are still inconsistencies in the research literature as to whether there is evidence which supports this view (Junginger 1996). Historically, there was evidence that the risk of violence was not increased in people with a psychiatric illness. This was, at least in part, based on the findings of two large studies dating back to the 1940s and 50s (Mesnikoff & Lauterbach 1976). In more recent times however, there has been a reassessment of this issue. There is an increasing amount of literature around the topic of violent behaviour in people with mental illness reflecting the increased debate in this area. In the search conducted for this review, an average of three articles per year in the 1980s was identified, rising to 11 per year in the 1990s and 16 per year between 2001 and 2004.

It is possible that an increase in the level of debate around the association between mental illness and the risk of violence is attributable to the 'changing times'. Mesnikoff and Lauterbach (1976) noted that earlier studies which showed no increase in risk were done in a time when it was less likely that offenders would be sent to psychiatric hospitals. They argued that because offenders are now more likely to be admitted to psychiatric hospitals, the incidence of violence may be increased. There is certainly some evidence to show that the number of violent incidents in psychiatric hospitals has increased in recent times. A study of a private psychiatric clinic in the US showed that the frequency of violent incidents has increased in female patients by 150% and 50% in male patients over a decade (Tardiff et al. 1997). And, a 20 year

profile of violent incidents from the Maudsley and Bethlem Royal Hospitals in the UK showed an exponential increase in the number of incidents peaking at approximately 2.6 per bed per year in 1984 (Noble 1997). This increase may also have been related to severity of illness as the authors noted that the proportion of severely ill patients had also increased over this time.

OBJECTIVES

The major aim of this paper is to review the risk of violent behaviour in people with mental illness based on a systematic search of the research literature. An additional aim is to give an overview of the risk factors for violence in people with a mental illness.

METHODS

The databases CINAHL (1982 – October 2005), EMBASE (1980 – October 2005), MEDLINE (1966 – October 2005) and PsycINFO (1967 – October 2005) were searched using the terms: (violence* or aggress* or murder) and (schizophren* or psych* or mental) and (prevalence* or occur* or incidence or risk or frequency or rate) and (hospital or patient* or diagnos*) in titles, abstracts, subject headings or keywords. Only those reviews and studies that reported numerical estimates of prevalence and risk data are covered in this review. Also, because of the limited power and the increased probability of bias in smaller studies, only studies that had over 250 participants are covered here.

RESULTS

Types of studies

The search strategy described above resulted in the identification of 226 papers. There were three main types of study that estimated the risk of violent behaviour in people with a mental illness:

1. the prevalence or incidence of violent behaviour in psychiatric patients;
2. epidemiological surveys where the incidence of violence in conjunction with men-

- tal illness was compared with the rates of violence in the mentally 'well' proportion of the study population; and
3. the incidence of mental illness in offending populations.

Mental health data was collected from questionnaires, interviews or mental health records and data about violence was collected from self-report, questionnaires, conviction records and collateral informants such as relatives. Data were collected prospectively and retrospectively.

Studies also provided data for the frequency of violence in psychiatric patients, which types of mental illness were most associated with violent behaviour and risk factors for violent behaviour.

The definition of violence varied between studies. In a review of fourteen studies done in six countries by Eronen et al. (1998) six reported violent offences, five reported aggressive behaviour and three reported any arrests or offences. Aggressive behaviour was obtained by self-report, relatives or hospital or court records. In a review by Angermeyer (2000) of nine epidemiological studies, the measure of violence was convictions for violent crime in six studies, homicide convictions in one study and in two studies violence was measured by self-reported aggressive behaviours. And in the twenty studies reviewed by Björkly (2002a), violence was defined as violent offences in fifteen studies and as physical assault in five studies. Therefore the most common measure of violent behaviour is based on convictions for violent crime in large scale community studies.

However, in inpatients settings the definition of violent behaviour differs from studies in the community. In most inpatient studies, violence was measured by staff aggression scales which may or may not have proven reliability and usually included incidents of verbal aggression (e.g. Benjaminsen et al. 1996; Grassi et al. 2001; Krakowski & Czobor 2004; Moamai & Moamai 1994). Other measures of violence used in inpa-

tient settings were incidents of physical assault, damage to property and verbal aggression or threats (e.g. Buckley et al. 1990; Rabinowitz & Mark 1999).

Part A: Prevalence of violent behaviour in people with a mental illness

Psychiatric inpatients

There have been several studies of the prevalence of violent behaviour in psychiatric inpatients. Violent behaviour was identified in 16% of 698 schizophrenic patients treated in an Irish psychiatric hospital. The vast majority of acts were of a minor nature, and serious physical assault was noted in only 1% of cases (Buckley et al. 1990). In a one year prospective study of a Danish psychiatric hospital, 6% of the 1,130 patients behaved violently. However, only one quarter of these incidents were deemed to be serious violence (Benjaminsen et al. 1996). Among 2,946 long-stay (one year or more) psychiatric patients in Israel, an incident of physical violence was recorded at least every few months in 23% of patients (Rabinowitz & Mark 1999). There were two studies done in Italian psychiatric units. The study of 1,534 patients admitted to an acute psychiatric unit over five years (Grassi et al. 2001) and of 360 admissions to an emergency psychiatric unit over 12 months (Raja et al. 1997) resulted in estimates of prevalence of 7.5% and 6% respectively. In an acute inpatient psychiatric unit in New Zealand there were incidents of physical violence in 9% of 381 admissions over one year (Ng et al. 2001). And, in 1,487 inpatients with major psychiatric illness in two US state psychiatric hospitals, 14% of women and 12% of men engaged in one or more physical assaults during the first two months of hospitalisation (Krakowski & Czobor 2004). Based on these studies, the prevalence of violent behaviour in psychiatric inpatients ranges from 6 to 23%.

The prevalence of violent behaviour appears to be higher in involuntary patients and long-stay patients. In 331 people with psychotic or major mood disorders placed on involuntary outpatient commitment in the US, over 50% had been physically assaultive in the 4 months preceding hospitalization (Swanson et al. 1999). And, in over 383 consecutive admissions to a Canadian hospital, 83% of the involuntary admissions and 41% of the voluntary admissions manifested violent or intimidating behaviours at the time of hospitalization (Moamai & Moamai 1994).

Patients in community settings

The prevalence of violent behavior in community psychiatric patients appears to be markedly higher compared to psychiatric inpatients. Several US studies have reported the prevalence of violent behaviour in community psychiatric patients. Four per cent of 430 people reported that they had acted violently towards another person within just two weeks after discharge from a private psychiatric hospital (Tardiff et al. 1997). A follow-up of 812 patients attending an emergency psychiatric service, showed that 45% of patients engaged in violence within six months (Newhill et al. 1995). After discharge from inpatient facilities, 18% of 1,136 people with a major mental disorder acted violently in the following year (Steadman et al. 1998). And, the prevalence of serious assaultive behaviour was 13% over one year in 802 adults with psychotic or major mood disorders receiving inpatient or outpatient public mental health services in four US states (Swanson et al. 2002). In Canada, 12% of 397 patients from inpatient, outpatient, and emergency departments of a psychiatric facility were responsible for 133 attempted or actual physical assaults (Tam et al. 1996). And, in two UK studies, over two years, 19% of 670 community-dwelling patients with psychosis (Moran et al. 2003) and 25% of 271 patients with schizophrenia (Walsh et al. 2004) committed a physical assault. The overall history of assault was 21% in the large WHO study of

1,017 patients with schizophrenia, in 10 countries across five continents, who had their first-in-lifetime contact with a helping agency as a result of their psychotic symptoms (Volavka et al. 1997).

Risk of violent behaviour in people with a mental illness

There were two reviews that gave data for the risk of violent behaviour in people with a mental illness compared to a control group. Data for the risk of violent behaviour was given in eight studies reviewed by Eronen et al. (1998). These were Modestin and Ammann (1995, 1996) which were done in Switzerland; Hodgins 1992; Hodgins et al. 1996; and Lindqvist and Allbeck 1990, all Swedish studies; Swanson et al. (1990), a US study; Stueve & Link (1997), an Israeli study; and Tiihonen et al. (1997), which was done in Finland. Angermeyer (2000) reviewed the epidemiological studies of the risk of violence in people with schizophrenia, or major mental disorder that had been published since 1990. This review reported the results from nine studies, two each in Sweden (Lindqvist & Allbeck 1990; Hodgins 1992) and Finland (Tiihonen et al. 1997; Eronen et al. 1996), and one each in Australia (Wallace et al. 1998), Denmark (Hodgins et al. 1996), Israel (Stueve & Link 1997), Switzerland (Modestin & Ammann 1996), and the US (Swanson et al. 1990). Of the eight studies in the review by Eronen et al. (1998) and nine studies in the review by Angermeyer (2000), seven studies were covered by both reviews.

There were five studies that investigated the relative risk of violence in people with schizophrenia in the review by Eronen et al. (1998). These studies gave an increase in the risk of violence in people with schizophrenia of between three and seven fold. The association between major mental disorder and violence was investigated in three studies. There was an increase in the risk of violent behaviour in people with a major mental disorder which ranged from three to 27 fold. There was no significant increase in

the risk of violence in patients with affective disorder.

In the review by Angermeyer (2000) the increase in risk ranged from 4–8 in the six studies that reported the risk of violence for people with schizophrenia, although the majority of studies reported an approximate increase in risk of four fold. However the data around the risk of violent behaviour in people with major mental disorder was considerably more varied, ranging from a three to 27 fold increase in risk in three studies.

While comprehensive, these reviews only covered the literature up to 1998 and a number of large studies have been published since this time. Individuals meeting diagnostic criteria for schizophrenia-spectrum disorder in a total city birth cohort of 1,000 young adults in New Zealand were 2.5 times more likely than control subjects to be violent (Arseneault et al. 2000). In a birth cohort of 335,990 individuals born between 1944 and 1947 in Denmark, the risk of violent behaviour for men and women with schizophrenia was increased by a factor of 5 and 23 respectively and up to 9 and 17 fold for men and women with psychoses (Brennan 2000). In the US National Comorbidity Survey of 15–54 year olds in 48 US states 5,865 answered additional items that were indicators of violent behaviour. Respondents with anxiety disorders, dysthymia, depression and bipolar disorder were more likely to report violent behaviour than the control group with an increase in risk of 3, 5, 4 and 10 fold respectively (Corrigan and Watson 2005).

Based on the identified reviews and studies outlined above the increase in the risk of violent behaviour in people with a mental illness is increased by a factor of between four and ten fold although there were some studies that estimated a higher risk.

Part B: Risk factors for violence in psychiatric patients

The following section lists the main factors

which are associated with an increased risk of violence in people with a mental illness.

Delusions and hallucinations

There have been two comprehensive reviews of the literature investigating the link between delusions and violence, and hallucinations and violence (Björkly 2002a, 2002b). These were based on searches of the English language literature in the MEDLINE and PsycLIT databases up to 2000. There were 20 identified studies that looked at the impact of delusions on violence (Björkly 2002a). The number of participants ranged from 19 to 10,066 with a majority of males. In nine studies, the participants were forensic patients, eight were general psychiatry, one community psychiatry patients and two general community. In 17 of these 20 studies there was a positive association between delusions and violence as defined by the review authors. Also, there was a positive association between persecutory delusions and violence in the 14 of 15 studies that investigated this link.

Findings from the review of hallucinations and violence were less clear cut (Björkly 2002b). The sample numbers in the 12 studies identified for this review ranged from 30 to 10,066 with most participants being male. Four studies reported findings in forensic populations, six in general psychiatry patients, one in community psychiatry patients and one in the general community.

Björkly concluded that the positive association between delusions and violence was, in the main, attributable to persecutory delusions but that the data regarding hallucinations was less strong. However, in both reviews (Björkly 2002a, 2002b) it was noted that the paucity of controlled studies and the low number of prospective studies meant that even the seemingly strong link between delusions and violence should be viewed with caution.

Drug and alcohol abuse

There is strong evidence that drug and/or alco-

hol abuse markedly increases the risk of violent behaviour in people with a mental illness. In the review of the literature by Angermeyer (2000) the effect of substance use disorder was reported in six identified studies. Across these studies the risk of violent behaviour was increased by a factor of 7 to 55 with substance use disorder. In Eronen's review (Eronen et al. 1998) data for substance abuse was available for five studies. The increase in risk of violent behaviours due to substance abuse also ranged from between 7 and 55 fold.

Other studies in this area have consistently shown an increase in the risk of violence due to substance abuse. People with a history of alcohol problems as well as schizophrenia were twice as likely to have a history of assault compared to people with schizophrenia alone in the WHO study of people with first contact schizophrenia in ten countries (Volavka et al. 1997). In the 1991 follow up of the large Danish birth cohort by Brennan (2000), substance abuse increased the likelihood of violence by a factor of between two to five in people with a mental illness. In a one year follow-up of 1,136 inpatients discharged from three US psychiatric facilities the prevalence of violence was nearly twice as high in patients with a major mental disorder and substance abuse compared to people with a major mental disorder but not substance abuse (Steadman et al. 1998). When the incidence of assault in 271 patients with schizophrenia in the UK was measured from multiple data sources over two years, the risk of assault was four times higher in patients that abused alcohol (Walsh et al. 2004).

Based on the data from these reviews and studies the increase in risk due to substance abuse appears to be between two and 15 fold although some studies estimate an even greater risk due to substance abuse.

Personality disorder

In Angermeyer's review (2000) the effect of personality disorder was reported in three stud-

ies. There was a significant increase in the risk of violent behaviour with a diagnosis of personality disorder ranging from a factor of 7 to 50. Other studies have shown evidence of an increased risk of violent behaviour in people with personality disorder. The risk of violence associated with antisocial personality disorder was 7 fold in males and 12 fold in females in a Danish cohort of over 300,000 (Hodgins et al. 1996). People with a diagnosis of personality disorder were four times more likely to be violent after discharge from a private US psychiatric hospital (Tardiff et al. 1997). A coexisting diagnosis of personality disorder with another mental illness appears to further increase the risk of violent behavior compared to a mental illness alone. In the follow up of the Danish birth cohort of over 300,000, the coexistence of personality disorder with a psychiatric diagnosis increased the risk of violence by a factor of 1.4 to 4.6 (Brennan 2000). And, in community-dwelling patients with psychosis in the UK, a co-existing diagnosis of personality disorder increased the likelihood of physical assault by a factor of two (Moran et al. 2003).

Previous violent behaviour

Unsurprisingly, a history of violence seems to be strongly associated with future violence. In a follow-up of 763 patients from a US private university psychiatric hospital, people who were violent one month before admission were 9 times more likely to be violent in the two weeks after discharge, compared with people who were not violent before admission (Tardiff et al. 1997). When the incidence of assault in 271 patients with schizophrenia was measured from multiple data sources over the following two years the risk of violent behaviour was twice as high in people with a history of recent assault (Walsh et al. 2004).

Age

Younger age has been significantly associated with violence in a number of studies. In inpa-

tient studies violent behaviour was significantly more likely to occur when the patient was younger in three UK hospitals (Fottrell 1980), in a private psychiatric clinic in the US (Tardiff et al. 1997), and in an acute psychiatric unit (Grassi et al. 2001) and emergency psychiatric unit (Raja et al. 1997) in Italy. Similarly, in community studies the incidence of violent behaviour is associated with younger age. When responses from the US Epidemiologic Catchment Area survey were used to examine the relationship between violence and psychiatric disorders, those that reported violent behaviour were significantly younger (Swanson et al. 1990). And, in a follow-up of involuntarily hospitalised patients with psychotic or major mood disorders, younger age was significantly associated with violence (Swanson et al. 1999, 2000).

Self-harm

There is some evidence that psychiatric patients who self-harm are more likely to behave violently. Among schizophrenic patients who had been treated in an Irish general psychiatric hospital, a higher proportion of those who had self-harmed (22%) behaved violently compared to the overall rate of 16% (Buckley et al. 1990). Male forensic inpatients who had demonstrated self-destructive behaviour over three years in a US study were also more likely to act aggressively against others (Hillbrand 1995).

Gender

There is no clear pattern as to whether male or female psychiatric patients are more likely to act violently. Some studies reported that female patients were more likely to act violently. In a study of violent behaviour among psychiatric inpatients in three hospitals in the UK, violent behaviour was more likely to occur when the patient was female (Fottrell 1980). And, in a Finnish state forensic psychiatric hospital over 1992 to 1996, female patients were more likely to act violently than male patients (Weizmann-Henelius & Suutala 2000).

Other studies reported no difference between genders. In a six month follow-up of psychiatric patients recruited from the emergency service of an urban psychiatric hospital in the US there was no difference between male and female patients in the frequency and seriousness of violence. However, there were gender differences in those towards whom the violence was directed (Newhill et al. 1995). When patients from acute psychiatric wards were followed up over the year following their discharge to the community the prevalence of violence was found to be similar for males and females (Robbins et al. 2003).

Yet other studies have shown that violent behaviour is more frequent in males. Males with a mental disorder were more likely to report violent behaviour within the preceding year in the US Epidemiologic Catchment Area survey (Swanson et al. 1990). And, in a study of 23,037 psychiatric patients admitted to a major German District Hospital over six years, approximately 75% of the patients who acted aggressively were males (Finzel 2003).

However, it is possible that gender differences are more likely to be observed when the severity of violence is more clearly delineated. In severely and persistently mentally ill involuntary patients, serious violence was more prevalent in males but there was no gender difference on the more inclusive measure of aggression such as threats and fights (Hiday et al. 1998). Gender differences may also be more likely in the community. In 1,487 inpatients with major psychiatric illness in two US state psychiatric hospitals, men and women were equally likely to engage in physical assault during hospitalisation. However, in a community follow up of inpatients who had committed a physical assault while in hospital, the frequency of assaults in the community was nearly twice as common in males (41%) compared to 25% of females (Krakowski & Czobor 2004).

Nature of the violence

There is strong evidence that nurses are the

most frequent victims of patient violence in the hospital setting. Several studies of hospital inpatients in the UK, Canada, Australia, Finland and Germany, have shown that nursing staff are the most frequent targets of violent behaviours from psychiatric inpatients (Fottrell 1980; Tam et al. 1996; Eastwood & Pugh 1998; Owen et al. 1998; Weizmann-Henelius & Suutala 2000; Finzel 2003). Surveys of mental health professionals in the UK, Denmark and Sweden about their experiences of violence from patients have reflected these findings (Benjaminsen & Kjaerbo 1997; Eastwood & Pugh 1998; Soares et al. 2000). Based on the results of these studies the proportion of nurses that have experienced violence from patients ranges from 36% to 85%.

There is evidence that violence is most likely to occur early in the admission. In the psychiatric facility of a general hospital in Canada physical assault was most likely to occur during the first week of admission (Tam et al. 1996). Data from the UK Maudsley/Bethlem register of Violent Incidents showed that violence by psychotic patients was particularly likely to occur in the period leading up to and immediately following admission, when the patient was acutely disturbed (Noble 1997). And, in the Italian study by Grassi over five years in an acute psychiatric unit, 54% of incidents occurred during the first week of admission (Grassi et al. 2001).

Violence from psychiatric patients in the community setting is most frequently directed at relatives or close contacts. In a two-week follow-up of patients after discharge from a private psychiatric hospital in the US the targets of violence were most frequently family members or other intimate contacts (Tardiff et al. 1997). In another US study of psychiatric patients following discharge from three inpatient psychiatric facilities, violent behaviour was most frequently targeted at family members (51%) and friends or acquaintances (35%) and took place at home in 43% of cases (Steadman et al. 1998).

There is some data around which types of issues lead to patient violence. In a prospective

study of inpatient violence in a Danish psychiatric hospital from 1991 to 1992, data was available for antecedent incidents in 70% of violent incidents (Benjaminsen et al. 1996). The most frequent provoking factors were demands on patients and/or the staff's refusal to comply with patient wishes (52%) followed by attempts to have patients take medication (10%) and by disputes with other patients (5%). Data from the Maudsley/Bethlem register of Violent Incidents showed that the most common sources of friction with psychotic patients was the patient wanting to leave the ward and disputes over medication (Noble 1997).

DISCUSSION

There were two good reviews of the research literature identified in the search used for this paper. However, these reviews tended to use the same studies and only covered the literature to 1998. Based on the data from these reviews and some additional studies there does appear to be good evidence for an increase in the risk of violence in people with major mental disorders, and schizophrenia in particular. There was also a strong association between a diagnosis of personality disorder and violent behaviour and good evidence that substance abuse substantially increases the risk of violence in people with a mental illness.

However, although there is good evidence for an increase in the risk of violence in people with mental illness, conclusions around the size of that increase are limited by the large differences in the estimate of risk. There is a need for a good meta-analysis of the data to identify a better estimate of risk that is not biased by small sample sizes and can account for the differences in participants, setting, control groups and outcome measures.

References

- Angermeyer MC (2000) Schizophrenia and violence, *Acta Psychiatrica Scandinavica* 102 (Suppl. 407): 63–67.
- Arseneault L, Moffitt T E, Caspi A, Taylor P J and Silva, P A (2000) Mental disorders and violence in a total

- birth cohort: Results from the Dunedin study, *Archives of General Psychiatry* 57(10): 979–986.
- Benjaminsen S, Gotzsche-Larsen K, Norrie B, Harder L and Luxhøi A (1996) Patient violence in a psychiatric hospital in Denmark: Rate of violence and relation to diagnosis, *Nordic Journal of Psychiatry* 50(3): 233–242.
- Benjaminsen SE and Kjaerbo T (1997) The staff's experience of patient violence in a psychiatric department, *Ugeskrift for Læger* 159(12): 1768–73.
- Björkly S (2002a) Psychotic symptoms and violence towards others – A literature review of some preliminary findings: Part 1. *Hallucinations, Aggression and Violent Behavior* 7(6): 617–631.
- Björkly S (2002b) Psychotic symptoms and violence towards others – A literature review of some preliminary findings: Part 2. *Hallucinations, Aggression and Violent Behavior* 7(6): 605–615.
- Brennan P A, Mednick S A and Hodgins S (2000) Major mental disorders and criminal violence in a Danish birth cohort, *Archives of General Psychiatry* 57(5): 494–500.
- Buckley P, Walshe D, Colohan H A, O'Callaghan E, Mulvany F, Gibson T, Waddington J L and Larkin C (1990) Violence and schizophrenia: A study of the occurrence and clinical correlates of violence among schizophrenic patients, *Irish Journal of Psychological Medicine* 7(2): 102–108.
- Corrigan P W and Watson A C (2005) Findings from the National Comorbidity Survey on the frequency of violent behavior in individuals with psychiatric disorders, *Psychiatry Research* 136(2–3): 153–162.
- Diefenbach D L (1996) The creation of a reality: The portrayal of mental illness and violent crime on television, *Dissertation Abstracts International Section A: Humanities and Social Sciences* 57(2-A): 496.
- Eastwood N and Pugh R (1998) Violence in the community: Study of community mental health teams, *Psychiatric Bulletin* 22(9): 531–533.
- Eronen M, Hakola P and Tiihonen J (1996) Mental disorders and homicidal behavior in Finland, *Archives of General Psychiatry* 53(6): 497–501.
- Eronen M, Angermeyer M and Schulze B (1998) The psychiatric epidemiology of violent behaviour, *Social Psychiatry and Psychiatric Epidemiology* 33 (Suppl. 1): S13–S23.
- Finzel M, Schmidmeier R, Fric M, Widauer M and Laux G (2003) Violence by psychiatric in-patients of the BZK Gabersee – First results of a standardized documentation, *Psychiatrische Praxis* 30 (Suppl. 2): 196–199.
- Fottrell E (1980) A study of violent behaviour among patients in psychiatric hospitals, *British Journal of Psychiatry* 136: 216–221.
- Grassi L, Peron L, Marangoni C, Zanchi P, and Vanni A (2001) Characteristics of violent behaviour in acute psychiatric in-patients: A 5-year Italian study, *Acta Psychiatrica Scandinavica* 104(4): 273–279.
- Hiday V, Swartz M, Swanson J, Borum R and Wagner H (1998) Male–female differences in the setting and construction of violence among people with severe mental illness, *Social Psychiatry and Psychiatric Epidemiology* 33 (Suppl 1): 68–74.
- Hillbrand M (1995) Aggression against self and aggression against others in violent psychiatric patients, *Journal of Consulting and Clinical Psychology* 63(4): 668–671.
- Hodgins S (1992) Mental disorder intellectual deficiency and crime: Evidence from a birth cohort, *Archives of General Psychiatry* 49(6): 476–83.
- Hodgins S, Mednick S A, Brennan P A, Schulsinger F and Engberg M (1996) Mental disorder and crime: Evidence from a Danish birth cohort, *Archives of General Psychiatry* 53(6): 489–496.
- Junginger J (1996) Psychosis and violence: the case for a content analysis of psychotic experience, *Schizophrenia Bulletin* 22(1): 91–103.
- Krakowski M and Czobor P (2004) Gender Differences in Violent Behaviors: Relationship to Clinical Symptoms and Psychosocial Factors, *American Journal of Psychiatry* 161(3): 459–465.
- Lindqvist P and Allebeck P (1990) Schizophrenia and crime: A longitudinal follow-up of 644 schizophrenics in Stockholm, *British Journal of Psychiatry* 157: 345–50.
- Mesnikoff A M and Lauterbach C G (1976) The association of violent dangerous behavior with psychiatric disorders: A review of the research literature, *Journal of Psychiatry & Law* 3(4): 415–445.
- Moamai J and Moamai N (1994) Violent and intimidating behaviors in psychiatric patient at the time of admission to hospital, *Revue Canadienne de Psychiatrie* 39(4): 233–235.
- Modestin J and Ammann R (1995) Mental disorders and criminal behaviour, *British Journal of Psychiatry* 166: 667–75.
- Modestin J and Ammann R (1996) Mental disorder and criminality: male schizophrenia, *Schizophrenia Bulletin* 22(1): 69–82.
- Moran P, Walsh E, Tyrer P, Burns T, Creed F and Fahy T (2003) Impact of comorbid personality disorder on violence in psychosis: Report from the UK 700 trial, *British Journal of Psychiatry* 182: 129–134.
- Newhill C E, Mulvey E P and Lidz C W (1995) Characteristics of violence in the community by

- female patients seen in a psychiatric emergency service, *Psychiatric Services* 46(8): 785–789.
- Ng B, Kumar S, Ranclaud M and Robinson E (2001) Ward crowding and incidents of violence on an acute psychiatric inpatient unit, *Psychiatric Services* 52(4): 521–5.
- Noble P (1997) Violence in psychiatric in-patients: Review and clinical implications, *International Review of Psychiatry* 9(2–3): 207–216.
- Owen C, Tarantello C, Jones M and Tennant C (1998) Violence and aggression in psychiatric units, *Psychiatric Services* 49(11): 1452–1457.
- Rabinowitz J and Mark M (1999) Risk factors for violence among long-stay psychiatric patients: National study, *Acta Psychiatrica Scandinavica* 99(5): 341–347.
- Raja M, Azzoni A and Lubich L (1997) Aggressive and violent behavior in a population of psychiatric inpatients, *Social Psychiatry and Psychiatric Epidemiology* 32(7): 428–434.
- Robbins P C, Monahan J and Silver E (2003) *Mental Disorder Violence and Gender*, *Law and Human Behavior* 27(6): 561–571.
- Soares J J F, Lawoko S and Nolan P (2000) The nature, extent and determinants of violence against psychiatric personnel, *Work & Stress* 14(2): 105–120.
- Steadman H J, Mulvey E P, Monahan J, Robbins P C, Appelbaum P S, Grisso T, Roth L H and Silver E (1998) Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods, *Archives of General Psychiatry* 55(5): 393–401.
- Stueve A and Link B G (1997) Violence and psychiatric disorders: results from an epidemiological study of young adults in Israel, *Psychiatric Quarterly* 68(4): 327–42.
- Swanson J W, Holzer C E iii, Ganju V K and Jono R T (1990) Violence and psychiatric disorder in the community: Evidence from the Epidemiologic Catchment Area surveys, *Hospital & Community Psychiatry* 41(7): 761–70.
- Swanson J, Borum R, Swartz M and Hiday V (1999) Violent behavior preceding hospitalization among persons with severe mental illness, *Law and Human Behavior* 23(2): 185–204.
- Swanson J W, Swartz M S, Borum R, Hiday V A, Wagner H R and Burns B J (2000) Involuntary outpatient commitment and reduction of violent behaviour in persons with severe mental illness, *British Journal of Psychiatry* 176: 324–331.
- Swanson J W, Swartz M S, Essock S M, Osher F C, Wagner H R, Goodman L A, Rosenberg S D and Meador K G (2002) The social-environmental context of violent behavior in persons treated for severe mental illness, *American Journal of Public Health* 92(9): 1523–1531.
- Tam E, Engelsmann F and Fugere R (1996) Patterns of violent incidents by patients in a general hospital psychiatric facility, *Psychiatric Services* 47(1): 86–88.
- Tardiff K, Marzuk P M, Leon A C and Portera L (1997) A prospective study of violence by psychiatric patients after hospital discharge, *Psychiatric Services* 48(5): 678–681.
- Tiihonen J, Isohanni M, Rasanen P, Koiranen M and Moring J (1997) Specific major mental disorders and criminality: a 26-year prospective study of the 1966 northern Finland birth cohort, *American Journal of Psychiatry* 154(6): 840–5.
- Volavka J, Laska E, Baker S and Meisner M (1997) History of violent behaviour and schizophrenia in different cultures: Analyses based on the WHO study on determinants of outcome of severe mental disorders, *British Journal of Psychiatry* 171: 9–14.
- Wallace C, Mullen P, Burgess P, Palmer S, Ruschena D and Browne C (1998) Serious criminal offending and mental disorder: Case linkage study, *British Journal of Psychiatry* 172: 477–484.
- Walsh E, Gilvarry C, Samele C, Harvey K, Manley C, Tattan T, Tyrer P, Creed F, Murray R and Fahy T (2004) Predicting violence in schizophrenia: A prospective study, *Schizophrenia Research* 67(2–3): 247–252.
- Weizmann-Henelius G and Suutala H J (2000) Violence in a Finnish forensic psychiatric hospital, *Nordic Journal of Psychiatry* 54(4): 269–273.

CONTEMPORARY NURSE accepts **CLINICAL PRACTICE** papers
Please see the Author Guidelines on www.contemporarynurse.com
for details of how to submit your work.