Prevalence of Aggressive or Violent Behaviour in Thai Patients with Schizophrenia: a Cross-Sectional Study

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Abstract

Objective: This study aimed to determine the prevalence of violence and factors associated with aggressive or violent behaviour in Thai patients with schizophrenia.

Methods: This cross-sectional study was conducted in all patients with schizophrenia aged ≥ 18 years admitted to Suan Prung Psychiatric Hospital, Thailand, between January and November 2014. Baseline interviews were conducted by a psychiatrist and psychiatric nurses. Accessibility to weapons and toxic chemicals was evaluated.

Results: Of 230 patients with schizophrenia screened, 207 (162 men and 45 women) were included. Of them, only 16 (7.7%) patients had aggressive or violent behaviour, including verbal aggression ($n = 7$), physical aggression ($n = 5$), and aggression against property ($n = 4$). Nonetheless, only 2 (12.5%) of them had been charged by the police. The weapon score was higher in violent than non-violent patients ($p < 0.05$). Binary logistic regression analysis showed that the weapon score was the only significant predictor of violence.

Conclusion: Patients with schizophrenia with greater access to weapons were more likely to have aggressive or violent behaviour. Routine screening for access to weapons in clinical settings and adequate treatment of psychotic symptoms may reduce the incidence of aggressive or violent behaviour and violent offences.

Key words: Schizophrenia; Violence

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Introduction

Patients with schizophrenia may experience distress, delusion, hallucination, and disorganised speech and behaviour. The rates of aggressive or violent behaviours and criminal offences have been reported to be higher among patients with schizophrenia than in the general population.¹⁻⁹ People with schizophrenia are 20-times more likely than the general population to commit homicide.¹⁰ Approximately 1 in 600 patients with schizophrenia commit homicide prior to treatment, and the rate of homicide after antipsychotic treatment is about one in 10 000 patients per year.¹¹

Aggressive or violent behaviour in patients with schizophrenia may be a response to psychotic delusions (especially paranoid or persecutory delusions), hallucinations, or misperceptions, and therefore a psychotic form of self-defense.¹² Factors associated with aggressive or violent behaviours in patients with schizophrenia include severity of psychotic symptoms, personality dimensions, substance abuse, and mentalising abilities,^{13,14} whereas sociodemographic risk factors include economic deprivation¹⁵ and social living status.¹⁶

There are few studies on factors associated with aggressive development, especially in Asian patients with schizophrenia. This study aimed to identify factors associated with aggressive or violent behaviour in Thai patients with schizophrenia.

Methods

The study was approved by the Ethics Committee of Faculty of Medicine, Chiang Mai University (EC/MEDCMU- PSY-2556-01814) and the Ethics Committee of Suan Prung Psychiatric Hospital (EC/SPPH-17-2556). Informed consent was obtained from each participant. This cross-sectional study was conducted in the largest mental health hospital in northern Thailand. All inpatients with schizophrenia aged ≥ 18 years admitted between January and November 2014 were screened for eligibility. Those who were diagnosed

with any type of schizophrenia and received any treatment (antipsychotic drugs, electroconvulsive therapy, and/or supportive therapies) were included. Those who did not provide informed consent, refused to cooperate, or had other psychiatric disorders (schizoaffective disorder, bipolar disorder, major depressive disorder with psychotic feature, or delusional disorder) were excluded, as were those with severe medical conditions such as severe alcohol withdrawal syndrome or temporal lobe epilepsy.

Baseline interviews were conducted by a psychiatrist and psychiatric nurses. Demographic data such as sex, age, educational level, marital status, occupation, income, duration and type of schizophrenia, and treatment were collected. Patient characteristics were collected from the patients themselves, their relatives, and medical records. The diagnosis of schizophrenia was based on the Mini-International Neuropsychiatric Interview, Thai Version 5.0.0, a short structured diagnostic interview, and the DSM IV-TR, whereas the severity of comorbidities was measured using the Charlson comorbidity index.¹⁷

Violence includes threats and verbal aggression, aggression against property, self-harming behaviour, and physical aggression.^{11,18} The psychosocial aspects potentially leading to aggressive or violent behaviour include relationships between patients and others (neighbours, co-workers, or family members), public reprimand or blame, forced treatment or medication, criticism from others (family members, relatives, friends, neighbours, or co-workers), and home and community environments.¹¹ Accessibility to weapons and toxic chemicals was evaluated; higher scores indicated higher risk of accessing weapons/toxic chemicals. History of being charged by the police with a criminal offence or convicted in a court of a criminal offence was collected.

In a previous study, the prevalence of aggressive or violent behaviour in patients with schizophrenia admitted to remand prison was 6.1% (166/2743).³ The sample size required to make calculations with a 95% confidence interval was calculated as 88 patients; therefore, we planned to recruit 200 patients. To identify factors associated with aggressive or violent behaviour, violent and non-violent patients were compared using *t*-test or the Mann-Whitney *U* test (for continuous variables) and Fisher's exact test or χ^2 test (for categorical variables). A binary logistic regression model was applied to identify predictors of aggressive or violent behaviour. Significant independent variables ($p < 0.05$) and covariates ($p < 0.20$) at the bivariate level were included. All statistical analyses were carried out using SPSS (Windows version 22; IBM Corp, Armonk [NY], US)

Results

Of the 230 patients with schizophrenia screened, 23 were excluded owing to incomplete data, and 207 (162 men and 45 women) with a mean age of 38.7 ± 10.3 years were included (Figure). Of the 207 patients, 67.6% were single; they had a mean of 7.7 ± 3.8 years of education; 36.7%

were unemployed; and therefore, their income was low. 142 (68.6 %) had been diagnosed with paranoid schizophrenia and had the condition for a mean of 7.0 ± 7.7 years; 63 (30.4%) were treated with electroconvulsive therapy; and 35 (16.9%) had suicidal risk. Only 16 (7.7%) of patients had aggressive or violent behaviour, including verbal aggression ($n = 7$), physical aggression ($n = 5$), and aggression against property ($n = 4$). Nonetheless, only 2 (12.5%) of them had been charged by the police.

Violent and non-violent patients were comparable in terms of sex, age, years of schooling, marital status, occupation, personal and household income, and duration and type of schizophrenia. However, the weapon score was higher in violent patients ($p < 0.05$, Table 1). The binary logistic regression analysis showed that the weapon score was the only significant predictor of violence (adjusted $R^2 = 0.172$, standard error of the estimate = 0.034, Wald = 4.197, Table 2).

Discussion

In the present study, only 16 (7.7%) patients with schizophrenia had aggressive or violent behaviour, mostly verbal aggression. Of them, only 2 (12.5%) were charged by the police for violent offenses. However, neither of those was convicted in court. The risk of aggressive or violent behaviour was significantly higher in patients with higher access to weapons.

The prevalence of violent offences is greater in patients with schizophrenia than in normal populations. A case-control study reported that the lifetime and 5-year prevalence of violent offence in patients with schizophrenia after the first admission was 8.2% and 3.0%, respectively, compared with 1.8% and 0.4% in controls.¹ Similarly, a meta-analysis found that 9.9% of patients with schizophrenia and other psychotic conditions were violent, compared with 1.6% of the general population.¹⁰

Figure. Flow diagram of enrollment and completion of participants.

Table 1. Demographic data of patients with schizophrenia.

Factor	Non-violent (n = 191)*	Violent (n = 16)*	p Value
Sex			
Male	151 (72.9)	12 (5.8)	0.751
Female	40 (19.4)	4 (1.9)	
Age, y	38.4 ± 10.2	42.3 ± 11.2	0.201
Years of schooling	7.7 ± 3.7	7.0 ± 4.7	0.571
Educational level			0.118
Uneducated	16 (7.7)	3 (1.4)	
1-6 years	81 (39.1)	6 (2.9)	
7-9 years	51 (24.6)	1 (0.5)	
10-12 years	29 (14.0)	4 (1.9)	
≥13 years	14 (6.8)	2 (1.0)	
Marital status			0.619
Married	31 (15.0)	3 (1.4)	
Single	130 (62.8)	10 (4.8)	
Divorced/separated	25 (12.1)	2 (1.0)	
Widow	5 (2.4)	1 (0.5)	
Occupation			0.885
Unemployed	68 (32.9)	8 (3.9)	
Employee	74 (35.7)	5 (2.4)	
Owner	11 (5.3)	1 (0.5)	
Government officer	1 (0.5)	0 (0)	
Agriculture	29 (14.0)	2 (1.0)	
Monk	7 (3.4)	0 (0)	
Student	1 (0.5)	0 (0)	
Annual personal income, US\$	1643 ± 3092	1616 ± 1765	0.715
Annual household income, US\$	3320 ± 4556	2443 ± 2873	0.314
Duration of schizophrenia, y	7.2 ± 7.7	5.3 ± 6.7	0.350
Received electroconvulsive therapy	61 (29.5)	2 (1.0)	0.156
Having suicidal risk	34 (16.4)	1 (0.5)	0.318
Type of schizophrenia			0.463
Paranoid	133 (64.3)	9 (4.3)	
Disorganized	2 (1.0)	0 (0)	
Catatonic	1 (0.5)	0 (0)	
Undifferentiated	54 (26.1)	7 (3.4)	
Unspecified	1 (0.5)	0 (0)	
Charlson comorbidity index score	0.1 ± 1.5	0.3 ± 1.0	0.190
Nicotine use	71 (34.3)	5 (2.4)	0.637
Alcohol use	17 (8.2)	0 (0)	0.372
Amphetamine use	6 (2.9)	2 (1.0)	0.119
Poor relationships with neighborhood(s) or workmate(s)	46 (22.2)	7 (3.4)	0.131
Poor relationships with family member(s)	39 (18.8)	2 (1.0)	0.744
Patients reprimanded or blamed in public	37 (17.9)	3 (1.4)	1.000

* Data are presented as mean ± standard deviation or No. (%) of participants.

Table 1. (cont'd)

Factor	Non-violent (n = 191)*	Violent (n = 16)*	p Value
Patients often subjected to forced treatment	52 (25.1)	7 (3.4)	0.162
Patients subjected to forced medication	54 (26.1)	7 (3.4)	0.252
Patients criticised by family member(s) or others	39 (18.8)	5 (2.4)	0.341
Poor housing and home conditions	31 (15.0)	3 (1.4)	0.731
Improper environmental conditions	29 (14.0)	4 (1.9)	0.293
Weapon score	18.0 ± 8.7	23.6 ± 8.1	0.021

Substance use disorder is associated with aggressive or violent behaviour in patients with schizophrenia,^{1,10,19-23} as are personality co-morbidities, particularly antisocial personality trait or disorder.^{24,25} However, in Japanese patients with schizophrenia, violent behaviour is related to schizophrenic symptoms rather than antisocial traits or substance use disorder.¹³ Similarly, the present study showed no association of substance use disorder or personality traits or disorders with schizophrenia in our patients. Rather, aggressive or violent behaviour may be caused by several factors before, during, and after periods of active illness and may be affected by cultural and racial diversity.^{1,13}

The present study had some limitations. The sample size was small; a larger sample is needed to confirm these findings. All patients with schizophrenia were hospitalised, and their factors for developing aggressive or violent behaviour may differ from those of other non-hospitalised patients or patients with other psychotic conditions. Thus, the findings should only be generalised with caution. Cultural differences may influence the development of aggressive or violent behaviour in Thai patients with schizophrenia, and the findings may not be generalisable to other populations. Some patients who had committed acts of severe violence or homicide were imprisoned, and this may have also affected the prevalence of aggressive or violent behaviour that we found.

Conclusion

Thai patients with schizophrenia who had higher access to weapons were more likely to have aggressive or violent behaviour. Routine screening for access to weapons in clinical settings and adequate treatment of psychotic symptoms may reduce the incidence of aggressive or violent behaviour and violent offences.

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Table 2. Binary logistic regression analysis of predictors for aggression/violence in patients with schizophrenia.

Co-variable	β	Standard error	Wald	Odds ratio (95% confidence interval)	p Value
Uneducated	0.761	0.745	1.044	2.140 (0.497-9.211)	0.307
Electroconvulsive therapy	-1.002	0.804	1.554	0.367 (0.076-1.774)	0.213
Charlson comorbidity index	0.078	0.139	0.316	1.081 (0.824-1.419)	0.574
Amphetamine use	1.394	0.964	2.093	4.032 (0.610-26.670)	0.148
Poor relationships	0.980	0.613	2.553	2.664 (0.801-8.858)	0.110
Patients with forced treatment	0.486	0.599	0.659	1.626 (0.503-5.256)	0.417
Weapon score	0.070	0.034	4.197	1.073 (1.003-1.148)	0.041
Constant	-4.451	0.923	23.258	0.012	0.000

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Declaration

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