

Incidence of Violence in Acute Psychiatry Wards

1. Introduction

Psychiatric patients have been for a long time branded symbols of danger and shame and either left alone in dark corners or confined to institutions. Occasional violence of patients under the influence of diseases is often played up by the media and the patients are blamed. Thus far, there are no ways to predict violent behavior. It is a time bomb to the patients and makes the return of patients to the normal society more difficult. This and other difficulties in psychiatric medicine hinder the development of preventive mental health programs in the community. This study intends to understand the incidence of violence in acute psychiatric wards and its related risk factors.

2. Literature Review

Violence is defined in different ways by different authors for different study purposes. Some common synonyms are aggressive behavior, hostility, aggravated assault, etc. The term aggressive behavior is more often used in medical science or psychology to refer generally to all aggression. Selafenni⁽¹⁾ defines aggressive behavior as hurtful behavior against oneself, other individuals or objects with hurtful intentions. These sets of behavior include: 1) verbal aggression such as using offensive language, threat, ridicule and insult; 2) physical attack such as biting, hitting, kicking and spitting; 3) destroying and breaking things; 4) self-attack or suicide such as striking one's head against wall or by hurting oneself with sharp instrument.

Around 20-45% of hospitalized psychiatric patients are violent⁽²⁻⁶⁾ are 11-50% and suicidal⁽⁶⁻⁷⁾. The incidence of violence of schizophrenic patients, for differences in definitions, diagnostic requirements and detective procedures, is estimated to be around 2-45%⁽²⁻⁶⁾. Cooper and Mendonca⁽⁸⁾ indicated in their study that among geriatric patients, there would be 0.1093 aggressions per hospital care and 0.00065 aggressions per person-day. Lee YC et al.⁽⁹⁾ in their six-month statistics of the acute wards of the psychiatry department of a general hospital found that of the 362 in-patients, 121 were violent, giving an incidence of 33.4%. Myers et al.⁽¹⁰⁾ in a three-year study of violence

of patients in acute wards found that of 2,375 person-times of hospital care, 52 person-times had demonstrated aggressive behavior. Drug addicts were more likely to either commit suicide or attack others.

3. Materials and Method

Incidence of violence of males and females could be different. Therefore, both male and female samples were collected in the ten-month period between 1 July 1995 and 30 April 1996 in a public psychiatry teaching hospital from one acute ward for each sex by stratified and cluster sampling method. Field observers would fill out either a violence observation scale or a suicide scale when violence occurred. Relevant information was also collected to identify risk factors. The total person-days of hospital stay were used to calculate the incidence of violence.

4. Results

1. Characteristics of Violent Patients

In the ten months time, 81 patients had demonstrated violence: 44 males and 37 females. The average age of males was 33.5 ± 9.2 years; that of females, 31.5 ± 9.4 years; and of both sexes, 32.6 ± 9.3 years. The average age of onset for males was 25.0 ± 9.2 years; for females, 22.3 ± 6.1 years; and for both sexes, 23.8 ± 8.0 years. More patients were of senior and junior high school education: 9.4 ± 2.5 years of education for males, 8.9 ± 3.9 years for females, and 9.2 ± 3.2 years for both sexes. More were unmarried: 84.1% for males, 59.5% for females and 72.8% for both sexes. Many were unemployed: 65.9% of the males, 56.8% of the females and 61.7% of both sexes. 31.8% of the males were laborers or vendors; and 27.0% (of the females, housewives. 22.7% of the males were alcoholic. Many were diagnosed as schizophrenia, particularly of the paranoid type: 81.8% of the males, 70.3% of the females, and 76.5% of both sexes. The male patients, on average, were hospitalized 3.6 ± 2.6 times; the female patients, 3.4 ± 2.3 times; and both sexes, 3.5 ± 2.5 times. The average person-days of hospital stay were: 184.8 ± 106.5 person-days for males; 440.3 ± 699.2 person-days for females; and 300.5 ± 488.7 person-days for both sexes (Table 1).

Targets of attack differed little between male and female patients: 74.8% of males 49.0% of females and 60.7% of both sexes attacked room mates; 18.9% of males 15.0% of females and 16.8% of both sexes attacked objects. 18% of the staff particularly the nursing staff, and 4.6% of the physicians were also attacked, either individually or together with others or objects. 6.3% of males, 4.6% of females and 5.4% of both sexes either hurt themselves or attempted suicide. For one each of the male and the female patients, information was not available.

Places of attack differed little between male and female patients. 57.4% of males,

Table 1. Characteristics of Violent Patients in Acute Ward

	Male N=44(%) Mean±SD	Female N=37(%) Mean±SD	Total N=81(%) Mean±SD	
Age	33.5±9.2 (18-61)	31.5±9.4 (18-49)	32.6±9.3 (18-61)	NS* [@]
Age at onset (year)	25.0±9.2 (15-55)	22.3±6.1 (14-34)	23.8±8.0 (14-55)	NS* [@]
Education (year)	9.2±2.5 (4-14)	8.9±3.9 (0-14)	9.2±3.2 (0-14)	p<0.05 [@]
Marital status				
no	37(84.1)	22(59.5)	59(72.8)	Yate's
yes	7(15.9)	15(40.5)	22(27.8)	correction
married	4(9.1)	11(29.7)	15(18.5)	$\chi^2=4.98$
divorced	2(4.5)	3(8.1)	5(6.2)	df=1
widowed	1(2.3)	1(2.7)	2(2.4)	p<0.05
Occupation:				
unemployed	29(65.9)	21(56.8)	50(61.7)	Yate's
employed	15(34.1)	16(33.2)	31(38.3)	correction
laborer/vendor	14(31.8)	4(10.8)	18(22.2)	$\chi^2=0.38$
housewife	0(0.0)	10(27.0)	10(12.3)	df=1
others	1(2.3)	2(5.4)	3(3.6)	NS*
Alcohol abuse:				
no	34(77.3)	37(100)	71(87.7)	Fisher's
yes	10(22.7)	0(0.0)	10(12.3)	exact test
				p<0.005
Diagnosis:				
schizophrenia	36(81.8)	26(70.3)	62(76.5)	Yate's
paranoid	8(18.2)	11(29.7)	19(23.5)	correction
others	6(59.1)	11(29.7)	37(45.7)	$\chi^2=0.92$
non-schizophrenic	2(4.5)	4(10.8)	6(7.4)	df=1
affective psychosis	8(18.2)	11(29.7)	19(23.5)	NS*
epilepsy/organic psychosis	2(4.5)	6(11.2)	8(9.9)	
alcoholic/drug psychosis	1(2.3)	2(5.4)	3(3.7)	
mental retardation with psychosis	4(9.1)	1(2.7)	5(6.2)	
others	0(0.0)	2(5.4)	2(2.5)	
others	1(2.3)	0(0.0)	1(1.2)	
No. of hospital visits ^a	3.6±2.6 (1-13)	3.4±2.3 (1-10)	3.5±2.5 (1-13)	NS* [@]
Average days of stay ^b	184.8±106.5 (16-357)	440.3±699.2 (30-3,061)	300.5±488.7 (16-3,061)	p<0.001 [@]

a. including visits to other psychiatric institutions

b. by 14 May 1996

* not significant when $\alpha=0.05$ [@] independent T test

52.4% of females and 52.1% of both sexes demonstrated violence in the living room: 17.2% of males, 24.1% of females and 20.0% of both sexes, in the ward; 14.8% of males, 6.9% of females and 10.0% of both sexes, at the nursing station; 4.9% of males, 6.9% of females and 5.7% of both sexes, in the bath rooms; and 4.9% of males, 5.5% of females and 5.0% of both sexes in the corridors (Table 2). The cumulative total of violence per day showed a relatively even distribution, though for female patients. Two significant peaks on 15-17th days and 6-8th days of a month were noted (Figure 1). On a single day, more violence occurred between 8 to 12 hours, with 31 person-times for males and 48 for females; then, 14 to 18 hours, with 31 person-times for males and 43 for females; and then, between 20 to 24 hours with 28 person-times for males and 26 for females. The least violence occurred between 12 midnight and six in the morning, with only 4 person-times for males and 3 for females (Figure 2).

Table 2. Targets and Places of Attack

	Male N=127(%)	Female N=153(%)	Total N=280(%)	
Targets:				
objects	22(17.3)	21(13.7)	43(15.4)	$\chi^2=19.14$ df=12
self	8(6.3)	7(4.6)	15(5.4)	
room mates	91(71.6)	69(45.4)	160(57.1)	NS
physicians	1(0.8)	3(2.0)	4(1.4)	
nurses	16(12.6)	18(11.8)	34(12.1)	
family members	0(0.0)	1(0.7)	1(0.4)	
others	1(0.8)	0(0.0)	1(0.4)	
object and room mate	0(0.0)	2(1.3)	2(0.7)	
object and physician	1(0.8)	0(0.0)	1(0.4)	
object and nurse	1(0.8)	0(0.0)	1(0.4)	
room mate and physician	0(0.0)	1(0.7)	1(0.4)	
room mate and nurse	4(3.1)	3(2.0)	7(2.5)	
physician and nurse	3(2.4)	4(2.6)	7(2.5)	
others/unspecified	5(3.9)	7(4.6)	12(4.3)	
Places:				
ward	21(16.5)	35(22.9)	56(20.2)	$\chi^2=12.34$ df=5
living room	70(55.1)	76(49.7)	146(52.1)	
corridor	6(4.7)	8(5.2)	14(5.0)	NS
bathroom	6(4.7)	10(6.5)	16(5.7)	
nursing station	18(14.2)	10(6.5)	28(10.0)	
others/unspecified	6(4.7)	18(11.8)	24(8.6)	

Note: one attack could have more than one targets or places.

Figure 1. No. of Violent Incidents by Day

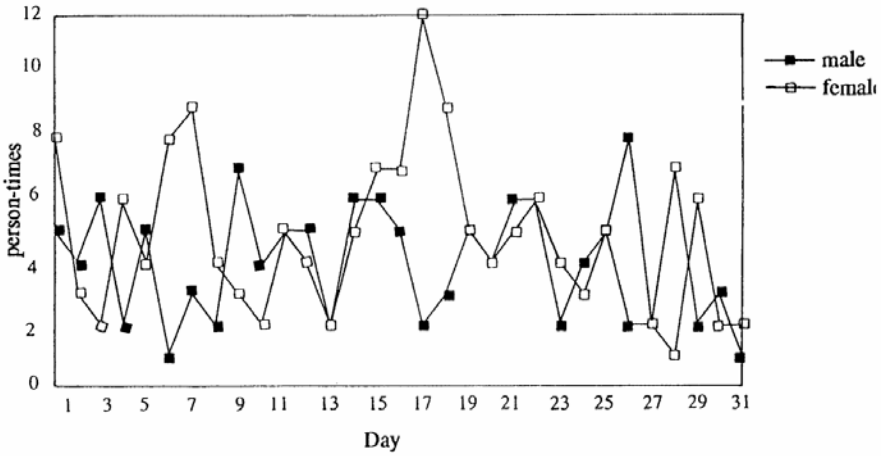
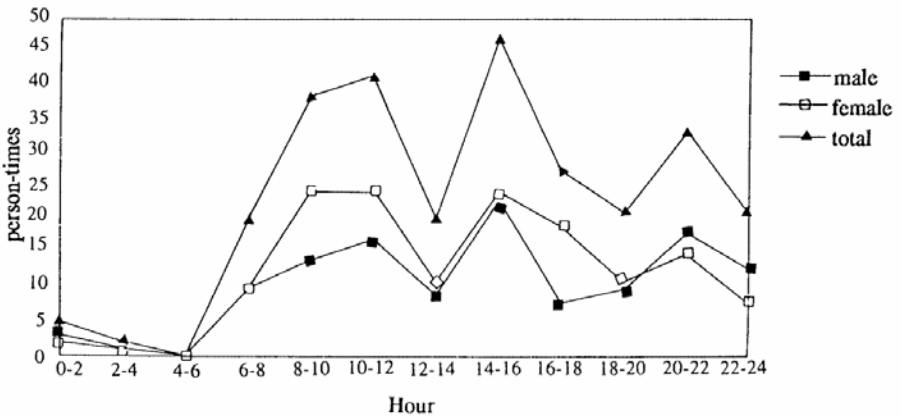


Figure 2. No. of Violent Incidents by Hour



In the study period, the 81 patients had 280 violent incidents: 127 by males and 153 by females. During the hospital care period, each male patient had an average of 3.0 ± 1.9 violent incidents; the female patients, 6.8 ± 6.9 ; and for both sexes, 4.7 ± 5.1 . In the study period, each male patient had an average of 2.9 ± 1.7 violent incidents; the female patients, 4.4 ± 3.3 ; and for both sexes, 3.6 ± 2.7 (Table 3).

Table 3. No. of Violent Incidents

	Male N=44(%) (range)	Female N=37(%) (range)	Total N=81(%) (range)	
Person-times of violence	127(45.4)	153(54.6)	280(100.0)	
During hospital stay	3.0 ± 1.9	6.8 ± 6.9	4.7 ± 5.1	p=0.000*
Average no. of incidents	(1-8)	(1-31)	(1-31)	
During study period	2.9 ± 1.7	4.4 ± 3.3	3.6 ± 2.7	p=0.003*
Average no. of incidents	(1-8)	(1-16)	(1-16)	

* Independent T test

In the study period in the two acute wards, there was a total of 31,287 person-days of hospital stay: 15,324 for males and 15,963 for females. The density of violence, the person-days of hospital stay by the number of violent incidents, was 8.7 incidents per 1,000 person-days of hospital stay: 7.8 for males and 9.6 for females, with females significantly higher than males. Both sexes had the highest violence density in July: 12.6 for males and 12.21 for females. Males had the least incidents of 2.78 in February; females had the least of 3.13 in April.

5. Discussion

Different definitions of violence bring about different incidence of violence. In the present study, aggressive behavior included also verbal threat, self-injury and suicide. 81 of the patients met the definition. Their average age was 32.6 years. 54.3% of them were males and 45.7%, females. This sex ratio was close to that of the hospitalized patients in the Kaihsuan Hospital⁽¹¹⁾. Male patients were more likely to demonstrate violent behavior. However, in terms of the person-times of violence, in the study period, the female patients had a total of 153 violent incidents, significantly higher than the 127 incidents of the male patients. This finding corresponded to the findings of Larkin et al. (12). Men often are of higher educational level than women. The educational distribution of the violent patients, however, was not much different from that of the

entire patient population of the hospital. More male patients were unmarried. This was true for the entire patient population of the hospital, and also similar to the findings of Chang SJ et al.⁽¹¹⁾. Unmarried males seemed to be more violent. This hospital also cares for drug addicts. One female patient was cared in the acute general ward before she was diagnosed drug addict. She demonstrated violence in the ward. More males were alcoholic than females. More patients were schizophrenic. This finding was close to findings of Lee YC et al.⁽¹¹⁾, Cooper and Mendonca⁽¹⁴⁾ and Pearson⁽¹⁵⁾. In this hospital, simple alcoholic psychiatric patients were kept in the addict cessation wards. By diseases, the number of alcoholic or organic (including alcohol addicts) psychiatric patients would be higher than that of schizophrenic patients (almost 100%). However, Cooper and Mendonca⁽¹⁴⁾ maintained that of hospitalized patients, more were organic psychiatric such as patients of dementia or mental retardation. This was perhaps due to differences in the sources of patients and diagnoses. Schizophrenic patients combined with alcohol abuse would have significantly higher risk of violence. This finding was similar to that of Swanson et al.⁽¹⁶⁾. Female patients seemed to have significantly longer person-days of hospital stay. Even when the three female patients who had stayed for more than 1,000 days each were removed, the average person-days of hospital stay of female patients were still higher than the male patients. For the lack of information, whether the female patients stayed in hospital longer for treatment or for other reasons was unknown. This longer stay, however, led to a higher number of violent incidence.

Targets of attack, primarily room mates, differed little between male and female patients. The time and place of attack often were in daytime in the living room. Objects were the next target of attack. 17% of nurses had also been attacked. Lee YC et al.⁽⁹⁾ in their study in an acute psychiatric ward of a general hospital gave a different finding: more objects than individuals were attacked. Larkin⁽¹²⁾ et al. on the other hand, gave a strikingly different finding: nurses were attacked three times more than room mates. The different finding of the present study could have been that the hospital studied was then under renovation, and the rehabilitation ward was temporarily used as acute ward. The smaller space of the ward increased the physical contacts and thus conflicts of patients. With more physical contacts, patients were more prone to attack as well. That crowdedness often leads to violence was supported by a study by Chang SC et al.⁽¹¹⁾ In their study of the same hospital for one and a half year before the renovation, the number of serious violence was only twice as many (147 incidents) as that of the present study. In the present study, 70 incidents were serious violence of the second degree and more. By estimation, the number of serious violent incidents should have increased by 75% for the total population. This corresponded to the findings of Shah et al.⁽¹⁷⁾ and Slater et al.⁽¹⁸⁾ that crowdedness was related to violence. The violence density, 8.7 incidents per 1,000 person-days of hospital stay in the present study, was found to be higher than that of the hospital before renovation and was also higher than that of other local and foreign hospitals⁽¹¹⁾. By sex, although more male patients were violent, female patients had more person-times of violence. This finding corresponded to that of Larkin et al.⁽¹²⁾.

6. Conclusion

Generally speaking, though more male patients were violent, more female patients repeated violent behavior. Their attacks, however, were more moderate. Psychiatric patients combined with alcohol abuse were more likely to demonstrate violence. This point was not confirmed in the present study as no attempt was made to collect information for the control group. Several particular female patients seemed to demonstrate violence around certain days of the month. Whether this was associated with menstrual cycle remains to be studied.

Prepared by: HC Chou¹, FW Lung², YF Shih¹, HL Yang¹, TH Chiang³, PH Wu³, KT Chen³

1. Kaohsiung Municipal Kaihsung Hospital

2. Army 802 General Hospital

3. FETP, National Institute of Preventive Medicine, DOH

Reported by: Kaohsiung Municipal Kaihsung Hospital; FETP, National Institute of Preventive Medicine, DOH

References:

1. Selafenni M. Violence and behavior control. *J Psychsoc Nurs Mental Health Service* 1986; 24(11): 8-12.
2. Cooper AJ, Mendonca JD. A prospective study of patient assaults on nurses in a provincial psychiatric hospital in Canada. *Acta Psychiatri Scand* 1991; 84(2): 163-166.
3. Eastley R, Mian I. Physical assaults by psychogeriatric patients: Patient characteristics and implications for placement. *mt j Geriatric Psychiatry* 1993; 8(6): 515-520.
4. Kalunian DA, Binder RL, McNiel DE. Violence by geriatric patients who need psychiatric hospitalization. *J Clin Psychiatry* 1990; 51(8): 340-343.
5. Patricia EB, Susan L. *Managing the violent patient*. New York, Unner/Mazel, Inc 1993; pp5-20.
6. Lin H. *Suicide and Its Prevention*. Buffalo Publications, Taipei, 1986; 40-57.
7. Miles P. Conditions predisposing to suicide: a review. *J Nerv Ment Dis* 1977; 164: 231-246.
8. Cooper AJ, Mendonca JD. A prospective study of patient assaults on nursing staff in a psychogeriatric unit. *Can J Psychiatry* 1989; 34(5): 399-404.
9. Lee YC, Fan SH, Tsai KC. A retrospective study of the violent behavior of hospitalized psychiatric patients. *J of Chi Med Assoc* 1987; 39: 323-332.
10. Myers KM, Dunner DL. Self and other directed violence on a closed acute care ward. *Psychiatry Q* 1984; 56(3): 178-188.
11. Chang SC, Lin HK, Shih YF et al. A study of factors related to the violence of hospitalized patients in the Kaohsiung Municipal Kaihsung Hospital. (unpublished)

- research project subsidized by the Kaohsiung City Health Department, 1993.
12. Larking EP, Murtagh S, Jones SJ. A preliminary study of violent incidents in a Special Hospital (Rampton). *Br J Psychiatry* 1988; 153: 226-231.
 13. Fairley NA, Siebert, Simpson A, et al. Psychiatric disorder and disability in New Zealand long-stay psychiatric patients. *Aust Z J Psychiatry* 1993; 27(4): 590-594.
 14. Cooper AJ, Mendonca JD. A prospective study of patient assaults on nurses in a provincial psychiatric hospital in Canada. *Acta Psychiatri Scand* 1991; 84(2): 163-166.
 15. Pearson M, Wilmot E, Padi M. A study of violent behavior among in-patients in a psychiatric hospital. *Br J Psychiatry* 1986; 149: 232-235.
 16. Swanson JW. Alcohol abuse, mental disorder, and violent behavior: An epidemiologic inquiry. Special Issue: Alcohol, aggression and injury. *Alcohol Health Res World* 1993; 17(2): 123-132.
 17. Shah AK, Fineberg NA, James DV. Violent among psychiatric in-patients. *Acta Psychiatri Scand* 1991; 84(4): 305-309.
 18. Slater RG. Psychiatric intervention in an atmosphere of terror. *Am J Forensic Psychiatry* 1986; 7(1): 5-12.