ORIGINAL ARTICLE

Prevalence and Risk Factors of Violence in Schizophrenic In patients of Psychiatry Department, Services Hospital Lahore

HAFIZ MUHAMMAD IMTIAZ AFZAL[1], ANJUM BASHIR[1], NAUMAN MAZHAR[3], MUHAMMAD ALI AWAB SARWAR[3], MARIA ISHTIAQ[1], SIDRA AFZAL[1], TAGWA SALAH AHMAD MOHAMMAD ALI[2], SONIA YOUNAS[4], KASHAF JUNAID[2]
[1]Pak Red Crescent Medical and Dental College Dina Nath Lahore Pakistan.
[2]Department of Clinical Laboratory Sciences, College of Applied Medical Sciences, Jouf University, Al Jouf, Saudi Arabia.
[3]Services Institute of Medical Sciences/Services Hospital, Lahore Pakistan.
[4]Department of Pathology, Tehsil Headquarter Hospital Kamoke, District Gujranwala, Kamoke 50661, Pakistan.
Correspondence to: Dr. Kashaf Junaid, Email: kjunaid@ju.edu.sa, Tel: +966 53 3268576

ABSTRACT

Aim: To determine the frequency and risk factors of violence in inpatients who have schizophrenia.
Methods: A cross-sectional study was designed in which 115 Schizophrenia patients were enrolled admitted to the Department of Psychiatry Services Hospital. Patients were evaluated for the act of violence among patients of schizophrenia by using DSM IV criteria. The acts of violence were recorded on a self-devised Performa. The serum lipid profile for all the patients was evaluated by the enzymatic method. The obtained data were coded and analyzed using SPSS version 24 (IBM). Descriptive and inferential statistical analysis was applied to calculate percentages, mean with standard deviation, and relationship with the violence.
Results: Results of this study indicate that the mean age of patients was 26.28±6.02years. There were 54(47%) males and 61 (53%) females. There were 40(35%) illiterate, 44(38%) were middle pass, while 31 (27%) had education matric or above, and 50% patients who belonged to low socioeconomic status. The mean level of cholesterol was high in these patients, and the act of violence was observed in 41(35.7%) cases. The most common act was psychomotor agitation followed by rage and damaged furniture. There is no association of age, gender, socioeconomic status, and education with the act of violence in these patients. The only significant association was found with the paranoid type of disease (p = 0.001) and low cholesterol level (p = 0.01).
Conclusion: The frequency of violence is high in patients with schizophrenia in the local population. The risk factor associated with act of violence is paranoid schizophrenia and biological marker like low cholesterol level.
Keywords: Violence, Schizophrenia, Psychiatry, DSM IV.

INTRODUCTION

Schizophrenia is a neurological disorder that is likely to have multiple etiologies. Psychosis, such as auditory hallucinations (voices) and delusions, is the hallmark characteristic of schizophrenia[1]. Impaired cognition, or a disturbance in information processing, is an underappreciated symptom that interferes with day-to-day life[2]. People with schizophrenia have lower rates of employment, marriage, and independent living compared with other people[3]. In the pathophysiology of schizophrenia, anatomical, neurotransmitter and immune system disorders have been implicated [4, 5].

Violence is a dynamic social behavior and is often linked with schizophrenia. However, only a minority of patients who have schizophrenia are violent, but it significantly negatively affects the entire group of patients[6]. The violence poses substantial threats of injury or death to assailants and their victims. Also, psychiatric attacks in patients contribute significantly to the stigma of mental illness. Schizophrenia individuals are 4 to 7 times more likely to commit violent acts, such as assault and murder, and 4 to 6 times more likely to display general offensive behavior, such as verbal and physical threats, relative to the general population[7]. Studies indicate that a patient has assaulted 75-100% of doctors and nurses in acute psychiatric units at some point in their careers[8,9].

A significant association between low concentrations of cholesterol and violence has been reported in several types of studies[10-12]. Low cholesterol was associated with increased criminal activity in a health-screening project. Studies in psychiatric settings have provided similar trends. In suicidal attempts, serum cholesterol was lower than in non-attempters and in violent patients relative to non-violent[13].

To our knowledge, there is a paucity of data regarding this issue. Therefore, it is essential to study the frequency of violence amongst patients with schizophrenia as it could lead to difficulty in managing such patients. It is also tricky for the caregiver to deal with this risky behavior.

There is no detail on this topic to our knowledge. The level of aggression in schizophrenia patients should also be observed because it can solve patients' problems. This research aims to determine the frequency of violence in patients who have schizophrenia and see whether there are differences in the lipid profile between violent and non-violent patients.

METHODS

A cross-sectional study was designed in which 115 schizophrenic patients were recruited from the Department of Psychiatry, Services Hospital Lahore, Punjab, Pakistan. The sample size of 115 cases was calculated with a 95% confidence level, 7% margin of error, and taking an expected percentage of violence (17%).

Only those patients diagnosed with DSM IV criteria of schizophrenia were included in this study. Patients were

admitted to the psychiatry ward for more than one week with age 18 to 40 years, and both genders were included. However, patients found with other comorbidities, including cardiovascular problems, epilepsy, tuberculosis, encephalitis, and viral infections such as hepatitis B, C and HIV, were excluded.

One hundred fifteen patients were enrolled from the Department of Psychiatry, Services Hospital Lahore, who fulfilled the inclusion and exclusion criteria. The nature of study was explained to each patient, and informed consent was taken. Each patient was interviewed in a comfortable setting, ensuring privacy. A detailed questionnaire was asked from each patient, including age, socioeconomic status, and education.

Demographic details and acts of violence were recorded on a self-devised Performa attached herewith. Patients were classified into three different types of schizophrenia according to DSM-IV criteria. For the lipid profile, a fasting serum sample was taken from all the participants. Total cholesterol, High-density lipoprotein (HDL), and Low-density lipoprotein (LDL) were estimated using the enzymatic method.

Data was entered & analyzed by using Statistical Package for Social Sciences (SPSS) 24.0 version. Age was presented as mean and standard deviation. Gender, violence were presented by using frequency and percentage. Data was stratified for age, gender, education, and socioeconomic status to deal with effect modifiers. Post-stratification, chi-square test was applied taking p-value ≤0.05 as significant

RESULTS

A total of 115 patients with schizophrenic disorder were included in this study. The mean age of the patients was 26.28 ± 6.02 years. There were more female patients (53%), and it was observed that 40 (35%) patients were illiterate, 44 (38%) were middle pass, while 31 (27%) had education matric or above. Based on the socioeconomic status, patients were divided into three groups; results of this study indicate the majority of the patients, 57 (50%), belonged to low socioeconomic status while 52 (45%) patients belonged to moderate socioeconomic status, and only 6 (5%) patients belonged to high socioeconomic status. The socio-demographic characteristics of these patients are presented in Table-I.

According to the criteria of DSM IV, it was observed that out of 115 schizophrenia patients, the majority of them have the paranoid type (47.8%) followed by disorganized and undifferentiated, 32.2% and 20%, respectively. The act of violence was observed in 41 (35.7%) cases (Table-I).

Patients were divided into two groups, one group with the act of violence and the other without violence. The data analysis indicates no significant difference in the mean age of the patients with or without violence (p = 0.64). When the data was stratified according to gender, it was observed that female patients have more common acts of violence; however, it was not statistically significant (p = 0.62) as presented in Table-II.

According to the study findings and considering the type of schizophrenia, most of the patients with violence were paranoid type 33 (60%), and 96% of patients without

violence have the undifferentiated type of schizophrenia (p = 0.01).

Table-I: Demographic and clinical characteristics of the patients (n=115)

Characteristics		Mean±s.d./ n (%)
Age		26.28±6.02
Sex	Male	54 (47%)
	Female	61 (53%)
Education	Illiterate	40 (35%)
	Middle	44 (38%)
	Matric or above	31 (27%)
Socioeconomic status	Poor	57 (50%)
	Moderate	52 (45%)
	High	6 (5%)
Type of Schizophrenia	Paranoid	55 (47.8%)
	Disorganized	37 (32.2%)
	Undifferentiated	23 (20%)
Lipid Profile	Total Cholesterol (mmol/L)	4.78±1.10
	HDL (mmol/L)	1.64±0.90
	LDL (mmol/L)	1.02±0.99
Violence	Yes	41 (35.7%)
	No	74 (64.3%)

In 41 patients who had an act of violence, the most common action was psychomotor agitation (51%) followed by rage (32%) and damaging furniture (17%), as presented in Figure-I.

Figure-I: Type of Violence observed in Schizophrenia patients (n=41)
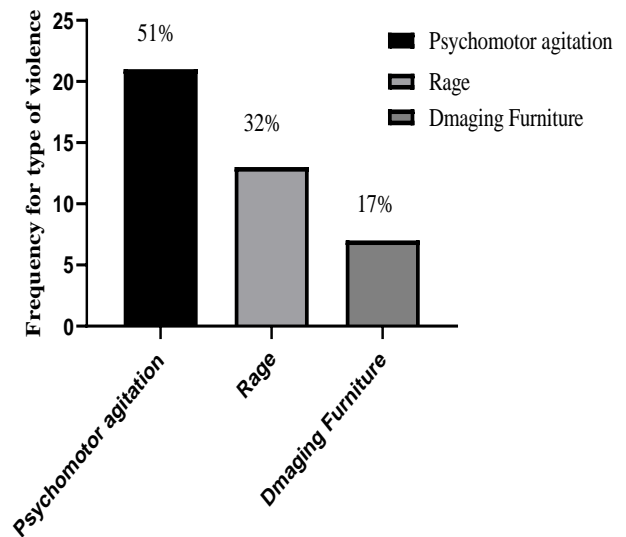
This study indicates that patients with violence have a low serum cholesterol level compared with patients without violence. And this association was found statistically significant with violence (p = 0.01). The mean levels of serum cholesterol (mmol/L) are presented in Figure-II.

Table-II: Factors associated with violence in Schizophrenic patients (n=115)

| Characteristics		Patients with Violence (n=41)	Patients without Violence (n=74)	p-value
Age		26.91 ± 4.72	26.26 ± 8.39	0.64
Gender	Male (n=54)	18 (33%)	36 (67%)	0.62
	Female (n=61)	23 (38%)	38 (62%)	
Education	Illiterate (n=40)	13 (32%)	27 (36%)	0.08
	Middle (n=44)	12 (29%)	32 (43%)	
	Matric or above (n=31)	16 (39%)	15 (20%)	
Socioeconomic status	Poor (n=57)	18 (32%)	39 (68%)	0.30
	Moderate (n=52)	22 (42%)	30 (58%)	
	High (n=6)	1 (17%)	5 (83%)	
Type of Schizophrenia	Paranoid (n=55)	33 (60%)	22 (40%)	0.001
	Disorganized (n=37)	10 (27%)	27 (73%)	
	Undifferentiated (n=23)	1 (4%)	22 (96%)	
Lipid Profile	Total Cholesterol (mmol/L)	4.0±0.27	4.89 ± 0.15	0.01
	HDL (mmol/L)	1.65 ± 0.93	1.67 ± 1.11	0.92
	LDL (mmol/L)	1.02 ± 0.31	1.03 ± 0.34	0.67
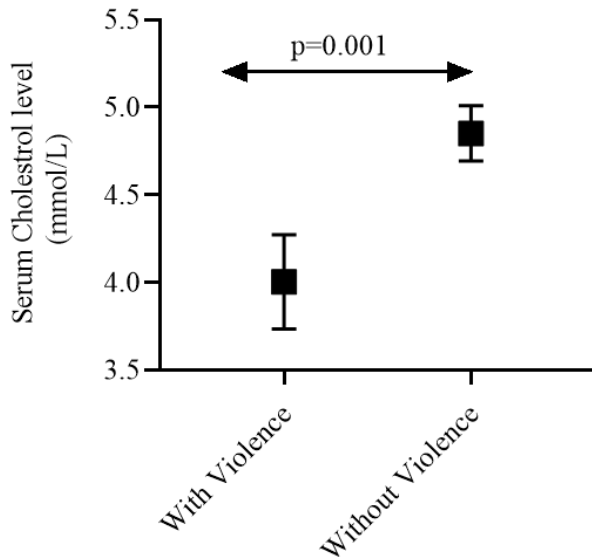
Figure-II: Comparison of serum cholesterol level (mmol/L) in Schizophrenia patients with and without violence (mean±s.d.)

DISCUSSION

A variety of studies have examined particular groups of patients with mental disorders to understand the associations between violent activity and socio-demographic and psychopathologic factors. Schizophrenia is a heterogeneous psychiatric condition, and violent behavior features can differ widely among people with this disorder. Consequently, some studies aimed to identify socio-demographic factors, gentic aspects, and different biomarkers that serve as the risk of violence in psychotic patients[1].

In our study, the act of violence was observed in 41 (35.7%) cases. The proportion of violence in these patients is higher than in previous reports. A systematic meta-analysis included 35 studies from different regions and suggested the combined ratio of patients who committed at least one act of violence was 17% (95% confidence interval (CI) 14-20%) of the 23,972 hospitalized patients identified in 35 studies[14]. A study from Pakistan in 2018 reported that 25.33% of schizophrenic patients have suicidal ideation and indicate a high rate of suicidal attempts in these patients[15]. In acute psychiatric hospitals, physical abuse can pose a serious challenge, not only because patients and workers are likely to be injured but also because the clinical side effects of aggression and violence can reduce the prevention strategies[8].

There was no significant association of age and gender with the violent act in these patients. However, we reported a high trend of violence in female patients, which agrees with previous reports. Other studies also reported the risk of violence had a comparatively more significant effect on violence in women than male schizophrenia patients[16,17].

According to this study's findings, violence in schizophrenic patients is not linked with the patients' socioeconomic status and education. In contrast, some other researchers reported a higher odd of violence in patients from low socioeconomic status[18]. This may be due to the low number of patients from the higher socioeconomic status that affected our study results.

Our finding that paranoid type is a significant risk factor of violence in schizophrenia patients is consistent with previous reports. A study from the Uk reported more severe violent events in which injuries were inflicted, repetitive abuse, and police incidents were directly linked with paranoid ideation[19].

This study suggests that low serum levels of cholesterol are associated with violence in schizophrenia patients. Several studies also reported low serum levels of cholesterol in schizophrenia patients and its significant association with violence and suicidal attempts[20, 21]. It is assumed that low serum cholesterol is associated with the lipid microviscosity in the membrane of brain cells, which led to the decreased function of serotogenic markers resulting in inadequate suppression of aggressive and impulsive behavior.

CONCLUSION

Schizophrenia patients have a high risk of violence. Some potential risk factors, including genetics, biomarkers, and

sociodemographics, are strongly linked to increased risk of violence in people with schizophrenia. Their role in risk evaluation and management needs further review. Studies like this can help in making policies for the better management of such cases.

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