

ORIGINAL RESEARCH

Exploring the Multifaceted Nature of Violence in Schizophrenia: A Comprehensive Investigation of Risk Factors

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ABSTRACT

Background: Understanding the risk factors associated with violence among patients with schizophrenia is essential for effective management and intervention strategies. This study aimed to explore various socio-demographic, psychopathological, and behavioral factors contributing to violent behavior in this population. **Methods:** A case-control study was conducted among 100 patients with schizophrenia, divided into violent (n=50) and non-violent (n=50) groups. Socio-demographic data, symptom severity (PANSS scores), and alcohol use (AUDIT scores) were assessed. Statistical analysis included chi-square tests and student's t-tests. **Result:** Significant gender disparity was observed ($\chi^2 = 12.398$, $p < 0.001$), with a higher proportion of males in the violent group. Marital status showed a significant difference ($\chi^2 = 8.20$, $p = 0.042$), with more widowed and separated individuals in the violent group. Mean PANSS scores were significantly higher in the violent group (22.46 ± 4.087) compared to the non-violent group (15.96 ± 9.320 , $p < 0.001$). AUDIT scores were also significantly higher in the violent group (10.48 ± 10.242) compared to the non-violent group (5.08 ± 6.685 , $p = 0.002$). **Conclusion:** The study highlights the complex interplay of socio-demographic, psychopathological, and behavioral factors in contributing to violence among patients with schizophrenia, emphasizing the importance of comprehensive assessment and targeted interventions.

Key words: Schizophrenia, Violence, Risk Factors, Psychopathology, Substance Abuse.

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INTRODUCTION

Violence among individuals with schizophrenia has profound implications for both affected individuals and society at large^[1]. While schizophrenia is commonly associated with symptoms such as hallucinations, delusions, and disorganized thinking, its potential link to violent behavior has garnered considerable attention and scrutiny. However, the relationship between schizophrenia and violence is complex and multifaceted, extending beyond the confines of the disorder itself^[2].

Schizophrenia, a severe and chronic mental illness characterized by disturbances in thought, emotion, and behavior, affects approximately 20 million people worldwide^[3]. Despite advances in treatment and care, individuals with schizophrenia continue to experience disproportionately high rates of violence, both as

perpetrators and victims. Understanding the underlying factors driving this phenomenon is crucial for developing effective prevention and intervention strategies^[2].

The aim of this study is to delve deeply into the various risk factors associated with violence in individuals diagnosed with schizophrenia, with a particular emphasis on factors beyond those directly related to the disorder itself. By adopting a multidimensional approach, we seek to broaden our understanding of the complex interplay between schizophrenia and violence, shedding light on nuanced factors that may influence the likelihood of aggressive or harmful behavior.

Socio-demographic factors, such as age, gender, education level, and marital status, have been shown to influence the risk of violence in individuals with

schizophrenia. For example, younger age and male gender have been consistently identified as predictors of aggressive behavior in this population. Additionally, socioeconomic factors, such as poverty and unemployment, may exacerbate stressors and increase the likelihood of violent behavior^[4].

Disorder-related variables, including the duration of illness, severity of symptoms, and history of hospitalizations, are also critical considerations. While psychotic symptoms are often cited as potential drivers of violence, the relationship between symptomatology and aggression is complex and multifaceted^[5]. Not all individuals with schizophrenia who experience hallucinations or delusions engage in violent behavior, highlighting the need to explore additional contributing factors^[4, 5].

Symptom profiles, encompassing a range of psychotic, affective, and cognitive symptoms, may vary widely among individuals with schizophrenia and may influence the propensity for violence in distinct ways^[6]. For instance, individuals experiencing command hallucinations instructing them to harm others may face a heightened risk of aggressive behavior compared to those with predominantly negative or disorganized symptoms^[6].

Alcohol and substance use represent significant risk factors for violence in individuals with schizophrenia, exacerbating symptoms and impairing judgment. Co-occurring substance use disorders are common among this population and are associated with increased rates of aggression and violence^[7].

The complex interplay between schizophrenia and violence necessitates a multifaceted approach to understanding and addressing this pressing issue. By investigating a comprehensive range of risk factors, this study aims to elucidate the underlying mechanisms driving violent behavior in individuals with schizophrenia, with implications for targeted prevention, intervention, and support strategies.

MATERIALS AND METHODS

Study Setting: The study was conducted at the Institute of Mental Health, Kilpauk, Chennai, which has been a center for the treatment of psychiatric illnesses for over two centuries. Spanning across 45 acres and strategically located in Chennai for easy accessibility, this hospital caters to the mental health needs of patients from Tamil Nadu, Pondicherry, and Andhra Pradesh. On average, the institute receives over 400 outpatients and accommodates more than 1200 inpatients daily.

Study Design: This research employed a case-control study design and was conducted at the Institute of Mental Health over a period of three months, from June 2022 to August 2022.

Study Participants: The study population comprised patients diagnosed with schizophrenia, attending the outpatient department (OPD) along with their reliable informants, as well as inpatients of the Institute of Mental Health.

Inclusion Criteria: Participants meeting specific criteria were included in this study. For inclusion, subjects had to be between 20 and 50 years of age and diagnosed with schizophrenia according to the ICD-10 criteria. The study recruited individuals who provided written consent to participate. Cases were defined as those with a documented history of violence, while controls were individuals with schizophrenia but without a history of violence.

Exclusion criteria: This encompassed subjects with neurological or other medical conditions that could potentially confound the study results. Additionally, individuals with mental disorders other than schizophrenia, as per the ICD-10 criteria, were excluded, except for those with alcohol consumption disorders. Participants for whom the reliability of the attendant was questionable were also excluded from the study. These criteria were established to ensure the homogeneity of the study population and to minimize potential confounding factors that could influence the outcomes of interest.

Sample Size and Sampling Technique: The sample size for the study was set at 100, comprising 50 cases and 50 controls. Non-probability convenient sampling was employed to select participants from both the outpatient and inpatient departments of the Institute of Mental Health.

Study Methodology: After obtaining approval from the ethics committee of Madras Medical College under Dr. MGR Medical University, recruitment of patients commenced. Informed consent was obtained from all participants. The Structured Clinical Assessment in Neuropsychiatry (SCAN), based on the ICD-10 Diagnostic Criteria for Research, was utilized for diagnosing schizophrenia and subtyping. Case selection criteria were applied based on a history of violence and the Modified Overt Aggression Scale (MOAS). Data pertaining to socio-demographic details, disorder-related characteristics, symptom profiles, and other relevant variables were collected through semi-structured interviews and validated assessment tools.

Study Tools: The following tools and instruments were utilized in the study.

1. Semi-Structured Interview Schedule: Developed specifically for the study to gather data on socio-demographic details, disease-related characteristics, symptom profiles, and other pertinent variables.
2. SCAN & ICD-10 Diagnostic and Research Criteria: Utilized for diagnosing schizophrenia and its subtypes.
3. PANSS (Positive and Negative Syndrome Scale): Employed to assess symptom profiles of schizophrenia.
4. AUDIT (Alcohol Use Disorders Identification Test): Utilized to evaluate alcohol consumption patterns.

Statistical Analysis: Data were analyzed using SPSS 25 software. Statistical tests such as Student's t-test

and Chi-square test, were utilized as appropriate to examine relationships and associations between variables.

Ethical Considerations: An application was submitted to the ethics committee of Madras Medical College under Dr. MGR Medical University. Permission was obtained to conduct the research at the Institute of Mental Health. Informed consent was obtained from all participants. The study's purpose, procedures, confidentiality measures, and potential benefits were explained to participants. All ethical guidelines and regulations were strictly adhered to throughout the study.

RESULT

Table 1 presents the socio-demographic variables among the study participants. In terms of age distribution, the majority of individuals in both groups were aged between 31 to 40 years, with no significant difference observed between the violent and non-violent groups ($\chi^2 = 1.965$, $p = 0.913$). However, a

significant gender disparity was noted, with a higher proportion of males in the violent group compared to the non-violent group ($\chi^2 = 12.398$, $p < 0.001$). Regarding marital status, there was a statistically significant difference observed ($\chi^2 = 8.20$, $p = 0.042$), with a higher prevalence of widowed and separated individuals in the violent group. No significant differences were found in educational attainment ($\chi^2 = 2.944$, $p = 0.567$), socioeconomic status ($\chi^2 = 0.932$, $p = 0.334$), or area of residence ($\chi^2 = 2.115$, $p = 0.347$). However, a significant difference in occupation was noted, with a higher proportion of unemployed individuals in the non-violent group compared to the violent group ($\chi^2 = 10.333$, $p = 0.006$).

Table 1: Socio-demographic variables among the study participants

Variable	Violent Group (N=50)	Non-Violent Group (N=50)	Total (N=100)	χ^2 (p value)
Age Distribution	21-30 years: 15 (30%)	21-30 years: 13 (26%)	28 (28%)	$\chi^2 = 1.965$ ($p = 0.913$)
	31-40 years: 26 (52%)	31-40 years: 28 (56%)	54 (54%)	
	41-50 years: 9 (18%)	41-50 years: 9 (18%)	18 (18%)	
Gender Distribution	Male: 40 (80%)	Male: 23 (46%)	63 (63%)	$\chi^2 = 12.398$ ($p < 0.001$)
	Female: 10 (20%)	Female: 27 (54%)	37 (37%)	
Marital Status	Never Married: 20 (40%)	Never Married: 21 (42%)	41 (41%)	$\chi^2 = 8.20$ ($p = 0.042$)
	Married: 15 (30%)	Married: 23 (46%)	38 (38%)	
	Separated: 9 (18%)	Separated: 1 (2%)	10 (10%)	
	Widowed: 6 (12%)	Widowed: 5 (10%)	11 (11%)	
Education	Illiterate: 14 (28%)	Illiterate: 19 (38%)	33 (33%)	$\chi^2 = 2.944$ ($p = 0.567$)
	Below High School: 16 (32%)	Below High School: 15 (30%)	31 (31%)	
	High School: 14 (28%)	High School: 12 (24%)	26 (26%)	
	Graduate & Above: 6 (12%)	Graduate & Above: 4 (8%)	10 (10%)	
Occupation	Unemployed: 23 (46%)	Unemployed: 38 (76%)	61 (61%)	$\chi^2 = 10.333$ ($p = 0.006$)
	Semi-Skilled: 22 (44%)	Semi-Skilled: 8 (16%)	30 (30%)	
	Skilled: 5 (10%)	Skilled: 4 (8%)	9 (9%)	
Socioeconomic Status	Low SES: 37 (74%)	Low SES: 41 (82%)	78 (78%)	$\chi^2 = 0.932$ ($p = 0.334$)
	Middle SES: 13 (26%)	Middle SES: 9 (18%)	22 (22%)	
Area of Residence	Rural: 20 (40%)	Rural: 27 (54%)	47 (47%)	$\chi^2 = 2.115$ ($p = 0.347$)
	Semi-Urban: 18 (36%)	Semi-Urban: 15 (30%)	33 (33%)	
	Urban: 12 (24%)	Urban: 8 (16%)	20 (20%)	

Comparison of PANSS scores between the two groups revealed a significantly higher mean PANSS score in the violent group (22.46 ± 4.087) compared to the non-violent group (15.96 ± 9.320), with a mean difference of 6.50 ($p < 0.001$) (Table 2).

Table 2: Comparison of PANSS score among the study participants.

Group	Mean PANSS score	Standard deviation	Mean difference	p value
Violent group	22.46	4.087	6.50	<0.001
Non-Violent group	15.96	9.320		

Analysis of AUDIT scores showed a statistically significant difference between the violent and non-violent groups ($p = 0.002$), with individuals in the violent group exhibiting a higher mean AUDIT score (10.48 ± 10.242) compared to the non-violent group (5.08 ± 6.685), indicating a greater severity of alcohol use among violent individuals (Table 3).

Table 3: Comparison of AUDIT score among the study participants

Group	Mean AUDIT score	Standard deviation	Mean difference	p value
Violent group	10.48	10.242	5.40	0.002
Non-Violent group	5.08	6.685		

DISCUSSION

Understanding the risk factors associated with violence in individuals with schizophrenia is crucial for effective management and intervention strategies. This study aimed to explore various socio-demographic, disorder-related, and behavioral factors contributing to violent behavior among patients diagnosed with schizophrenia.

The socio-demographic profile of individuals with schizophrenia provides valuable insights into their susceptibility to violent behavior. In our study, we observed a significant gender disparity, with a higher proportion of males exhibiting violent tendencies compared to females. This finding is consistent with previous research suggesting that male gender is a significant risk factor for violence among schizophrenia patients^[8]. The higher prevalence of violence among males may be attributed to various factors, including biological differences, societal expectations, and cultural norms. Additionally, our study revealed a notable association between marital status and violence, with widowed and separated individuals exhibiting a higher propensity for violent behavior. This finding highlights the importance of considering psychosocial stressors, such as marital discord and bereavement, in assessing the risk of violence among schizophrenia patients^[9].

While educational attainment and occupational status did not emerge as significant predictors of violence in our study, the prevalence of unemployment was notably higher among individuals in the non-violent group. This finding contradicts previous research suggesting a link between unemployment and violence in schizophrenia patients. However, it is essential to interpret these results cautiously, considering the complex interplay of socio-economic factors and mental health outcomes^[10]. Future studies exploring the relationship between employment status, financial stability, and violent behavior among schizophrenia patients are warranted to elucidate this association further.

Psychopathological factors play a crucial role in shaping the risk of violence among individuals with schizophrenia. In our study, we observed a significantly higher mean PANSS score among the violent group compared to the non-violent group. This finding suggests a strong association between symptom severity and violent behavior in schizophrenia patients. Specifically, positive symptoms such as hallucinations and delusions have

been implicated in the perpetration of violence^[11]. Similarly, our analysis of AUDIT scores revealed a higher prevalence of alcohol use among individuals in the violent group, indicating a potential link between substance abuse and violent behavior in schizophrenia patients^[12]. These findings emphasize the importance of comprehensive psychiatric assessments and targeted interventions to address symptomatology and substance use disorders in mitigating the risk of violence among schizophrenia patients^[12].

The findings of this study have several implications for clinical practice and intervention strategies in the management of violence among individuals with schizophrenia. Firstly, clinicians should prioritize the early identification and assessment of risk factors for violence, including socio-demographic variables, symptom severity, and substance use patterns. Comprehensive psychiatric evaluations should incorporate validated assessment tools such as the PANSS and AUDIT to capture the multidimensional nature of violent behavior in schizophrenia patients. Additionally, integrated treatment approaches combining pharmacological interventions, psychotherapy, and psychosocial support are essential for addressing the complex needs of schizophrenia patients at risk of violence. Collaborative care models involving multidisciplinary teams comprising psychiatrists, psychologists, social workers, and community support services can facilitate holistic care delivery and promote long-term recovery outcomes.

Despite its contributions, this study has several limitations that warrant acknowledgment. Firstly, the cross-sectional design limits causal inferences about the observed associations between risk factors and violent behavior in schizophrenia patients. Longitudinal studies tracking individuals over time are needed to elucidate the temporal dynamics of violence and its determinants in this population. Additionally, the reliance on self-report measures and retrospective data collection may introduce recall bias and social desirability effects, potentially influencing the validity of study findings. Future research incorporating objective measures and prospective data collection methodologies can enhance the robustness and generalizability of study findings. Furthermore, the sample size and composition may limit the generalizability of study findings to broader populations of schizophrenia patients. Future studies with larger, more diverse samples are needed to validate the observed associations and explore

potential moderating factors influencing the risk of violence in schizophrenia patients.

CONCLUSION

This study provides valuable insights into the socio-demographic, psychopathological, and behavioral factors associated with violence among individuals with schizophrenia. By elucidating the determinants of violent behavior, clinicians and policymakers can develop targeted interventions aimed at reducing the burden of violence and promoting the well-being of schizophrenia patients. Collaborative efforts involving stakeholders across healthcare, social services, and community organizations are essential for implementing evidence-based practices and addressing the multifaceted needs of individuals with schizophrenia at risk of violence.

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