



FACTORS ASSOCIATED WITH AGGRESSION IN SCHIZOPHRENIA- A CROSS-SECTIONAL STUDY

Psychiatry

Dr. M. Bhavana Post Graduate, Department of Psychiatry, Andhra Medical College, Visakhapatnam

Dr. G. Vydyanath Associate Professor, Department of Psychiatry, Andhra Medical College, Visakhapatnam

Dr. D. Vijaya Lakshmi Professor, Department of Psychiatry, Andhra Medical College, Visakhapatnam

ABSTRACT

Background: Schizophrenia is one of the most common and serious mental disorder that influences various aspects of life. Aggression is one of the five domains of schizophrenia. Numerous studies have been conducted to identify and explore risk factors associated with aggression in schizophrenia, however, factors linked to the socio-demographic and clinical variables have remained still unclear. The objective of this study to determine the socio-demographic and clinical risk factors associated with aggressive behavior in schizophrenia patients. **Aim:** To determine the socio-demographic and clinical risk factors associated with aggressive behavior in schizophrenia patients. **Methods:** A cross-sectional study was conducted in a tertiary care hospital, fifty participants were recruited in this study who met inclusion criteria. Socio-demographic details and clinical variables were collected using semi-structured proforma and a Modified Overt Aggression Scale (MOAS) was applied in schizophrenia patients. Data were analyzed using SPSS 25 version. **Results:** In a total of 50 participants, the aggressive patients were 34 (68%) and the remaining 16(32%) were non-aggressive. on bivariate correlation analysis, patients belonging to lower SES ($R=-0.374$, $P=0.007$) and being unmarried ($R=-0.375$, $P=0.007$) were statistically significant. **Conclusion:** Prevalence of aggressive behavior is high among schizophrenia patients who are attending at Government Hospital of Mental Care, Visakhapatnam. Patients who belonged to the lower socio-economic group and being unmarried were found significantly associated with aggression. However, various studies were conducted to predict risk factors for aggressive behavior in schizophrenia and other psychotic related disorders, but the clear association was not clarified to date. Psychiatrists have to identify reliable clinical and illness predictors for aggression in Schizophrenia patients aimed at reducing aggressive behavior and their adverse outcomes.

KEYWORDS

INTRODUCTION

Schizophrenia is one of the most common and serious mental disorder that influences various aspects of life. The 5 domains of schizophrenia are 1. Aggression 2. Cognition 3. Positive symptoms 4. Negative symptoms and 5. Affective symptoms.

Aggression has been defined variously in different studies. It ranges from irritability and anger to verbal aggression and physical act. In this study, the definition of aggression is "threatening behavior, (verbal and physical) directed towards on self/others or property is taken". Aggression is one of the common reasons for psychiatric emergency care, which is due to various mental illnesses.

According to a study conducted by Volavka & Citrome in 2008², aggression in schizophrenia is due to various reasons including positive psychotic symptoms, impulsivity, personality disorder, comorbid substance use. Some studies were found that aggressive behavior is associated with social factors, such as male, unmarried³, having physical disease⁴, and clinical factors like positive symptoms⁵ and medication nonadherence⁶. Various studies were conducted to predict risk factors for aggression in schizophrenia. (Swanson et al., 2006⁷; Spallet et al., 2010⁸) but no variable has been explained, hence understanding the factors associated with aggression helps in treating and preventing aggression in patients with schizophrenia.

AIM

To determine the socio-demographic and clinical risk factors associated with aggressive behavior in schizophrenia patients.

MATERIAL AND METHODOLOGY

This study was carried out in a tertiary care hospital, Government Hospital for Mental Care, Visakhapatnam. Fifty consecutive patients diagnosed as suffering from Schizophrenia according to ICD-10 diagnostic criteria for research, who were attending the Out Patient Department and inpatients were selected.

Study Tool

- * Semi-Structured proforma to assess socio-demographic data and clinical variables
- * Modified overt aggression scale⁹: Developed by E. Coccaro & collaboration in 1991. MOAS has a total of 16 items with 4 categories that assess aggression namely. Verbal aggression (with 4 items), Aggression against property (with 4 items), Auto-

aggression (with 4 items), and Physical aggression (with 4 items). The severity of aggressive behavior ranges from 0 (no aggression) to 4 points (maximum aggression) for each category. Aggressive behavior is defined as a score of 3 or more in any of a MOAS subscribes. This scale is widely used due to its data on reliability and validity – high correlation (70-91) and moderate test-retest reliability (0.46-0.54)

Inclusion Criteria

- Patients aged between 18-55 years
- Patients who are willing to give informed consent
- Patients who met ICD-10 Diagnostic criteria for schizophrenia

Exclusion Criteria

- Patients with other co-morbid psychiatric illness
- Patients with a history of severe medical illness
- Patients who are unable to give informed consent.

Operational Procedure

Patients fulfilling the inclusion criteria were taken up for the study. Modified Overt Aggression Scale MOAS and a semi-structured proforma was used to collect the socio-demographic details of the participants which included, age, gender, marital status, occupational history, and educational history. Information on diagnosis, previous hospital admissions, age at onset of illness, co-morbid substance abuse, presenting problems, and management were obtained.

Ethical Issues: Informed consent was taken from the caregiver. All were explained regarding the details of the study.

Statistical Analysis

Data were analyzed using statistical software SPSS version 25.0. Correlation between socio-demographic variables, clinical variables, and aggression was analyzed using the Pearson and Spearman rank correlation analysis. P-value <0.05 was considered significant.

RESULTS

A total of 50 participants were recruited in this study who met ICD-10 Diagnostic criteria for schizophrenia.

A) Socio-demographic Variables

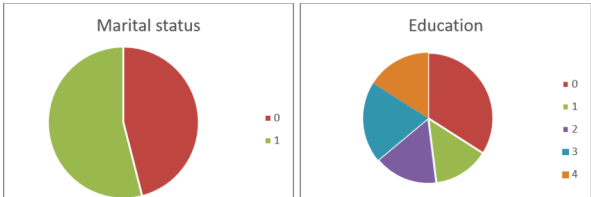
The mean age of the study sample was found to be 30.64 +/- 9.302. Ranges from 20 to 40 years. 32% (n=16) were females and 68% (n=34) were males. The majority of the patients were illiterate 34% (n=17) and the remaining were primary 14% (n=7), secondary 16% (n=8),

intermediate 20% (n=10), and graduates 16% (n=8).

The majority of the patients were married(27%) and belonged to the lower socio-economic group, About 66% (n=33) were unemployed, and the remaining 34% (n=17) were employed.

Table 1: Socio-demographic Profile Of The Sample Population (n=50)

	Variable	Number	Percentage
Age		30.64 +/- 9.302	
Sex	Male	34	68
	Female	16	32
Marital status	Married	27	54
	Unmarried	23	46
	Widowed	0	0
	Separated	0	0
Employment	Unemployed	33	66
	Employed	17	34
Socio-economic status	Upper	0	0
	Upper middle	0	0
	Middle	12	24
	Lower middle	0	0
	Lower	38	76
Domicile	Urban	36	72
	Rural	14	28



B) Clinical Characteristics

The aggressive patients were 34 (68%) and the remaining were non-aggressive patients.

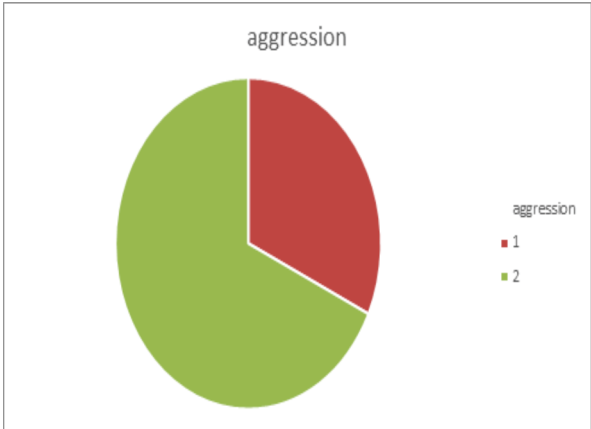


Table:2 Clinical Variables

Illness	Variables	N	SD	%
Mean Duration of illness in years		3.66	4.092	
Mean duration of untreated illness in months		9.50	13.703	
Past h/o aggression	Yes	38		76
	No	12		24
No. Of previous admissions	0	12		24
	1	21		42
	>1	17		34
Regular medication	Yes	17		34
	No	33		66
Comorbid substance use	Yes	23		46
	No	27		54

C) Relationship Between Socio-demographic Variables, Clinical Variables, And Aggression

In this study, on Bivariate correlation analysis significant association was found in marital status ($R= -0.375$, $P= 0.007$) and socio-economic status ($R= -0.374$, $P=0.007$)

Socio-economic Status

Symmetric Measures					
	Value	Asymp-totic Stan- dard Errors	Appro- ximate Tb	Appro- ximate Signifi- cance	
Interval by Interval	Pearson's R	-0.374	0.088	-2.797	.007c
Ordinal by Ordinal	Spearman Correlation	-0.361	0.108	-2.685	.010c
N of Valid Cases	50				
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

Marital Status

Symmetric Measures					
	Value	Asymp-totic Stan- dard Errors	Appro- ximate Tb	Appro- ximate Signifi- cance	
Interval by Interval	Pearson's R	-0.375	0.122	-2.803	.007c
Ordinal by Ordinal	Spearman Correlation	-0.375	0.122	-2.803	.007c
N of Valid Cases	50				
a. Not assuming the null hypothesis.					
b. Using the asymptotic standard error assuming the null hypothesis.					
c. Based on normal approximation.					

DISCUSSION

In our study, the main objective is to determine the socio-demographic and clinical variables associated with aggression in schizophrenia patients, however, various studies were conducted at different places to predict risk factors for aggression in schizophrenia and other psychotic related disorders, but a single variable is not explained clearly.

In our study, being unmarried was found to have a higher risk of aggressive behavior than married participants, probably due to less family support or their caregiver's support. This is in contrast to the findings by coqueo-Urizar et. Al¹⁰ which suggested that being unmarried has no impact on aggressive behavior in schizophrenia. This finding corresponds to the other study¹¹ conducted outside in which they found that being unmarried is a risk factor for aggression (OR-1.62 P-0.035). Also in this study, a higher risk of aggressive behavior among patients from lower SES was found, which is in contrast to findings of a study conducted in ethopia¹² which reported that there is no association between SES and aggressive behavior in schizophrenia. This finding is in line with another study conducted by coquette et al¹⁰ in which a higher risk of aggressive behavior was significantly associated with low SES. No association between genders, education, and occupation was found. Our findings find similarities with studies¹⁰ conducted. There is no association between clinical variables i.e., duration of illness, history of aggression, number of previous hospitalization¹³, duration of untreated illness¹⁰, comorbid substance abuse¹⁴.

The factors related to this study were based on a review of the literature and taking account of feasibility. Some factors are not included in this study such as personality disorder, physical disease, social support, and current medical adherence. These findings need to be evaluated further to have a better understanding of aggressive behavior in schizophrenia patients. Further research is recommended based on complete data to clarify the association between risk factors and aggressive behavior.

Limitations

This study is a cross-sectional design, temporal cause-effect association between factors and aggression was not established. A prospective study would have been more useful. A larger sample would have more clinical implications. As the study conducted in a tertiary care hospital, it cannot be generalized to the community. Several

variables that may have helped to know association with aggression was not included in the study, such as personality disorder, psychotic symptomology, physical disease, current medication adherence, social support.

CONCLUSION

Prevalence of aggressive behavior is high among schizophrenia patients who are attending at Government Hospital of Mental Care, Visakhapatnam. Patients who belonged to the lower socio-economic group and being unmarried were found significantly associated with aggression. However, various studies were conducted to predict risk factors for aggressive behaviour in schizophrenia and other psychotic related disorders, but the clear association was not clarified to date. Psychiatrists have to identify reliable clinical and illness predictors for aggression in Schizophrenia patients aimed at reducing aggressive behavior and their adverse outcomes.

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Conflicts of Interest: There were no conflicts of interest among the authors.

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