

Original Article

Prevalence of Aggression and its correlation to psychopathology of first episode of Schizophrenia Spectrum Disorder: Study of 100 cases

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ABSTRACT

Background: Persons with mental illness especially psychosis are considered aggressive.

Objective: Present study aims to explore the prevalence of aggression and its correlation with the psychopathology in patients with first episode of schizophrenia spectrum disorders.

Material & Method: Sample consist 100 patients in first episode with a diagnosis of schizophrenia spectrum disorders according to DSM-IV TR. Case Record Form, Positive And Negative Syndrome Scale(PANSS), Modified Overt Aggression Scale(MOAS), Buss Perry Aggression Questionnaire (BPAS) were administered.

Result: 68% of male and 51% of female patients showed some type of aggression. Aggression positively correlated with positive symptoms and general psychopathology scale of PANSS. Aggression correlated with psychopathology more than aggressive personality traits.

Conclusion: In present study, aggression was prevalent in schizophrenia and its spectrum disorders. It directly has a positive correlation with positive symptoms scale of PANSS.. However, larger community based studies are needed to replicate our findings.

Key words: Prevalence, Aggression, Psychopathology, Schizophrenia

INTRODUCTION

Aggression and violence happens around us in day to day life. Since, long there has been increasing interest in the prediction of aggressive behavior [1]. However the challenge being, having no universally accepted definition of aggression [2]. Many studies have considered only physical violence to others [3], while others included verbal aggressive behavior like verbal abuse or threatening behavior [4]. Some studies have also taken account of self-injury or damage to the property [5].

There is little evidence showing increased aggression in patients with psychosis [6] However, literature suggests that patients with major mental disorders are at a higher risk of committing aggressive acts as

compared to general population [7,8]. This is especially true in case of schizophrenia [9,10].

Other characteristics of schizophrenia that are likely to influence aggressiveness are positive and negative symptoms. Some studies indicate relationship between positive symptoms and aggression [4,11], others relate it with affective symptoms, but not with positive symptoms [12,13]. Cheung et al. found that aggression was a function of the tone and content of the hallucinations or delusions, the patient's emotional reaction to these symptoms and his ability to cope with these symptoms [14].

AIMS: There is an association between aggression and psychosis so present study was conducted with the aim of - to study the prevalence of aggression in first episode of schizophrenia spectrum disorder. The

relationship of aggression and psychopathology in these patients.

MATERIAL AND METHODS

A. Inclusion Criteria

- i. Adults between ages 15 years to 55 years.
- ii. Patients with first episode of schizophrenia spectrum disorder.
- iii. Both male and female patients.

B. Exclusion Criteria

- i. Other Axis-I mental disorders like affective disorders.
- ii. Mental retardation
- iii. History of unstable cardiovascular, respiratory, neurologic, renal, hepatic disease and other organic conditions.
- iv. Any significant history of substance use or substance induced psychotic or mood features.
- v. Patients who were not cooperative and not willing to participate, and if patient's relative deny for patient's participation.

TOOLS USED IN THE STUDY

Case record form for patients.

Prasad's modified classification for socio-economic class based on AICPI-2012.

DSM IV-TR diagnostic criteria for schizophrenia spectrum disorder.

Informed consent form in English, Gujarati and Hindi format.

Positive and negative syndrome scale-(PANSS) [25].

Modified Overt Aggression Scale- (MOAS) [26].

Buss-Perry Aggression Questionnaire (BPAS) [27].

Study was approved by Institutional Ethical Committee. Data was collected from Out Patient Department (OPD) of Psychiatry department, M.P.Shah Govt. Medical College & G.G. Hospital, Jamnagar, Gujarat. Patients were screened as per inclusion and exclusion criteria. DSM-IV-TR was used for the Diagnosis of first episode of schizophrenia spectrum disorder and confirmed by senior consultants. The patients and attendants were explained about the aims, methods and voluntary nature of participation in the study. After informing the patient, written informed consent was taken. Above mentioned tools were applied. For statistical analysis like Pearson's correlation SPSS 20.0 was used.

RESULTS

100 patients with a diagnosis of schizophrenia spectrum disorder were included in the study. There were 45 males and 55 females. 18% of patients were illiterate. In literate, majority was educated up to primary level (63%). 67% patients were married, 30% were unmarried, two were divorced and one was separated. Majority patients were from rural population (60%). 45% patients were from age group 25-35 years while 24% & 22% were from 35-45 and 15-25 years of age group respectively. Most of the patients were from socio-economic class III 51%, while class IV 26%, class II 18%, class I 2% and class V 3%. 80% of patients were from nuclear family while only 20% of patients were living in joint family. It shows that there is an increased trend towards nuclear family.

Out of total 100 patients 34 patients had a diagnosis of Schizophrenia Paranoid type, 29 with Schizophrenia Undifferentiated type, 10 with Schizoaffective Disorder and 20 with Schizophreniform Disorder while seven with Brief Psychotic Disorder.

59% of patients showed some type of aggression. Males showing higher prevalence than females (TABLE-1).

Table 1: Prevalence of aggression in schizophrenia spectrum disorder (MOAS)

Type of aggression	Male (%) (n=45)	Female (%) (n=55)	Total (%) (n=100)
Verbal	31(68)	28(51)	59(59)
Against Property	23(51)	16(29)	39(39)
Auto	12(26)	08(15)	20(20)
Physical	21(46)	12(22)	33(33)

Positive symptoms and general psychopathology symptoms correlated positively with aggressive behavior (TABLE-2).

Table 4 and 5 shows correlation of aggression with negative symptom scale and general psychopathology scale respectively.

Aggressive behavior does not correlate with aggressive personality traits in schizophrenia patients (TABLE-6).

Table 2: Correlation between Aggression Scores on Modified Overt Aggression Scale (MOAS) and Psychopathology Scores on Positive and Negative Syndrome Scale (PANSS)

MOAS PANSS	Positive	Negative	GPS	Total
Verbal	0.754**	-0.111	.0632**	0.743**
Against property	0.665**	-0.113	0.351**	0.541**
Auto	0.578**	0.056	0.270**	0.487**
Physical	0.602**	-0.121	0.303**	0.477**
Total	0.773**	-0.087	0.418**	0.645**

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed)

Table 3: Correlation between Items of Positive Subscale (PSS) of Positive and Negative Syndrome Scale (PANSS) and Aggression Scores on Modified Overt Aggression Scale(MOAS)

MOAS PSS	Verbal	Property	Auto	Physical	Total
Delusion	0.629**	0.494**	0.374**	0.450**	0.567**
Conceptual Disorganization	0.665**	0.485**	0.376**	0.448**	0.568**
HallucinatoryBehavior	0.382**	0.512**	0.456**	0.340**	0.513**
Excitement	0.382**	0.401**	0.551**	0.473**	0.579**
Grandiosity	0.325**	0.377**	0.593**	0.457**	0.572**
Suspiciousness	0.611**	0.477**	0.364**	0.450**	0.556**
Hostility	0.908**	0.784**	0.564**	0.665**	0.852**
Total	0.754**	0.665**	0.578**	0.602**	0.773**

**Correlation is significant at the 0.01 level (2-tailed)

Table 4: Correlation between Items of Negative Subscale(NSS) of Positive and Negative Syndrome Scale (PANSS) and Aggression Scores on Modified Overt Aggression Scale

MOAS NSS	Verbal	Property	Auto	Physical	Total
Blunted affect	-0.647**	-0.539**	-0.463**	-0.455**	-0.613**
EmotionalWithdrawn	-0.542**	-0.441**	-0.238*	-0.402**	-0.471**
PoorRapport	0.441**	0.359**	0.328**	0.416**	0.473**
Passive socialWithdrawal	0.297**	0.160	0.337**	0.056	0.222*
Difficulty in Abstract thinking	0.165	0.068	0.109	0.058	0.106
Lack ofSpontaneity	0.096	0.102	0.060	0.014	0.067
StereotypedThinking	0.358**	0.336**	0.400**	0.306**	0.425**
Total	-0.111	-0.113	0.056	-0.121	-0.087

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed)

Table 5: Correlation between Items of General Psychopathology Subscale(GPS) of Positive And Negative Syndrome Scale (PANSS) and Aggression Scores on Modified Overt Aggression Scale(MOAS)

MOAS GPS	Verbal	Object	Auto	Physical	Total
SomaticConcern	0.025	-0.181	-0.069	-0.178	-0.160
Anxiety	0.291**	-0.114	-0.047	0.020	0.001
GuiltFeeling	0.473**	0.035	0.112	0.073	0.143
Tension	0.344**	-0.017	-0.013	0.037	0.053
Mannerism & Posturing	0.023	0.017	-0.032	-0.015	-0.008
Depression	0.127	-0.197	-0.115	-0.156	-0.155
MotorRetardation	-0.623**	-0.368**	-0.339**	-0.469**	-0.527**
Uncooperativeness	0.599**	0.478**	0.448**	0.498**	0.606**
Unusual Thought content	0.489**	0.494**	0.325**	0.482**	0.547**
Disorientation	0.220*	0.228*	0.225*	0.302**	0.317**
Poor attention	0.511**	0.466**	0.299**	0.425**	0.506**
Lack of judgment & Insight	0.429**	0.341**	0.176	0.154	0.283**
DisturbanceOf Volition	-0.476**	-0.368**	-0.316**	-0.424**	-0.481**
Poor ImpulseControl	0.865**	0.665**	0.548**	0.630**	0.792**
Preoccupation	0.644**	0.684**	0.477**	0.505**	0.683**
Active social Avoidance	0.488**	0.429**	0.232*	0.402**	0.455**
Total	0.632**	0.351**	0.270**	0.303**	0.418**

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed)

Table 6: Correlation between Aggression Scores on Buss-Perry Aggression Questionnaire (BPAQ) and Psychopathology Scores on Positive and Negative Syndrome Scale (PANSS)

BPAQ PANSS	Positive	Negative	GPS	Total
Physical aggression	0.364**	-0.025	0.184	0.302**
Verbal Aggression	0.056	-0.003	0.098	0.084
Anger	0.290**	-0.005	0.125	0.231*
Hostility	0.252*	0.019	0.070	0.185
Total	0.422**	-0.010	0.208	0.350**

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed)

DISCUSSION

In our study 59% patients showed some type of aggression. Males were more aggressive than females in our study. Study got support from Jones et al [15] who studied a sample of 136 males and 44

females with schizophrenia. 52% verbal aggression in male patients (46% in females), 39% aggression against objects (25% in females), 23% against self (9% in females), and 39% against other people (34% in females) as measured by OAS. Steinert et al [5] examined 138 patients (77 men and 61 women) with a first episode of schizophrenia or schizoaffective

disorder. 75% men and 53% women in the sample exhibited some type of aggressive behavior.

All subscales of MOAS have significant positive correlation with the total scores of the PANSS. The patients having more scores on PANSS were more violent as found in other studies done previously [16,17]. According to Ellouze et al psychotic decompensation and rich symptomatology increases the violent potential among the patients with schizophrenia [17].

The positive subscale of PANSS significantly and positively correlates with physical aggression, anger and total scores of BPAQ. Total score of PANSS significantly and positively correlates with physical aggression and total score of BPAQ. Therefore, findings of the correlation of scores obtained on Overt Aggression Scale with PANSS and BPAQ are suggestive of psychopathology being a stronger determinant of the aggressive behavior than the aggressive traits in patients with schizophrenia.

All forms of aggression were significantly and positively correlating with all positive symptoms in PANSS. The patient may act out on the hallucination and paranoid symptoms like grandiosity and suspiciousness which impair their capacity for reality testing. As a result, even neutral environmental stimuli may be misinterpreted and a threat may be perceived. Shouting, abusing and other forms of verbal aggression are frequently encountered in the patients with symptoms of auditory hallucinations [18]. In order to escape from the threatening environment the person may be violent towards inanimate objects too which might be interpreted as a part of a hostile community. The delusional psychopathology especially the somatic delusion may lead to self mutilatory behavior in the patients with schizophrenia.

Patients having auditory hallucinations can develop secondary delusions like somebody is against them therefore may become aggressively as found in our study. "Command hallucinations" may lead to aggressive behavior [19] Hellerstein et al [20] found that 38.4% patients with auditory hallucinations hear commands to behave in a particular manner, often violently or self destructively. An association between aggression and symptoms referred as "threat-control override" has been observed [21] Amore et al [22] & Volavaka et al [23] also found significant association between violent behavior and positive psychotic symptoms.

Patients with blunted affect and emotional withdrawal are less likely to respond to the environmental and the endogenous stimuli, so they are less aggressive. Repetition of same kind of thought process, such as thoughts related to aggression in a patient with schizophrenia may lead to aggression. Poor rapport may be due to the precox feelings of psychiatrist in aggressive patients. Family members frequently coax, persuade and criticize the passive family member with schizophrenia which is likely to develop in aggression and escape tendencies in the patient.

Total score of MOAS did not correlate significantly with total score of negative subscale of PANSS. So, it is evident from our study that positive symptoms are correlate more with aggression than negative symptoms.

It is quite expected that the anxiety and depression may induce the idea of incapacity and helplessness. Such thoughts may turn the person to be aggressive when provoked. Patient may become verbally aggressive and may abuse or threaten others and this may lead to guilt feeling in the patient.

If a person is contradicted for unusual thoughts may be uncooperative and when he is asked to socialize when he prefers to be aloof; all such behaviors might make the person behave aggressively. Person whose orientation is impaired may behave aggressively. Yasavage [10] too found an association between aggression and unusual thought content.

Due to the lack of insight and judgment, patient may deny treatment while family may be forcing him to comply for treatment or faith healing. Patient may find this absurd and become aggressive. Yasavage [4] also found positive correlation between poor impulse control and aggression. A patient with schizophrenia may be unable to judge clearly with proper attention to the surroundings, who is preoccupied with violent thoughts resulting in aggressive behavior. Patient with schizophrenia is criticized by family members for avoiding society and interpersonal relationships who may force him to socialize leading to aggression. Stigma associated with mental illness may lead a person to actively avoid society and the attitude and behavior of society towards mentally ill person may also lead the patient to aggression.

Patient feeling lack of energy may show symptoms of motor retardation. Disturbance of volition may also make patient to be having less energy and he may not wish to involve in aggressive acts. However disturbance in volition may also lead to aggressive symptoms.

According to Arango et al [24] violent patients had significantly higher scores on the PANSS general psychopathology scale. Ellouze et al [17] on comparison of PANSS scores revealed that violent patients are characterized by the existence of more general symptoms.

CONCLUSION

There is high prevalence of aggression in schizophrenia spectrum disorder. Aggression is correlated more to psychopathology than aggressive personality trait. Positive symptoms are more positively correlated to aggression than negative symptoms. General psychopathology symptoms were also correlated to aggression. However larger community based studies are needed to generalize these findings.

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