



A STUDY OF AGGRESSION IN PATIENTS SUFFERING FROM SUBSTANCE USE DISORDERS

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ABSTRACT **Background** Aggression is caused by various known and unknown factors in patients suffering from substance use disorder. Effects of aggressive behavior is multidimensional on life of patient and his loved ones. The magnitude of aggressive behavior is understated. Therefore, the aim of this study was to assess the various domains, determinant factors of aggressive behavior among persons with problematic substance use. **Methods** A hospital-based cross-sectional study was conducted from June, 2021 to December, 2022. 200 participants falling in the age group 18-65 years and with problematic substance use disorder as per DSM V were interviewed for aggressive behavior using a modified overt aggression scale and Buss and Perry Aggression Questionnaire scale. The approval of ethics committee and informed written consent from patients was taken. The data was analyzed using the IBM SPSS V 26 software. **Results** Aggressive behavior was found in 65% of study population. The mean age of the participants in our study is 37.1 years. Alcohol use disorder was the commonest followed by polysubstance use, cannabis use, opioid use and sedative use respectively. It was found that significant relationship exists between substance use and aggression. When duration, amount and problematic use of alcohol, cannabis, opioid and other substances use was correlated with MOAS (Modified Overt Aggression Scale) and Buss Perry total score. It was found to have statistically significant positive correlation. **Conclusion** The prevalence of aggressive behavior was seen to be high among problematic substance users. Therefore, screening of every individual with problematic substance use is suggested for aggressive behavior at the community level. We shall target patients suffering from substance use for intervention to avoid aggressive behavior induced due to substance use and shall come with better treatment plans of substance use disorders and prevention strategies.

KEYWORDS : Aggressive behavior; problematic, substance use, MOAS (Modified Overt Aggression Scale), and Buss Perry total score

INTRODUCTION

Morbidity due to aggressive behavior is high and substance use disorder is one of the risk factors and vice versa. Substance dependence certainly impairs judgment and increases the chances of causing violent activity^{1,2,3}. The significance of studying substance use disorders as a factor in aggressive behaviour is important as it is modifiable. The magnitude of aggressive behavior is not well stated in resource-limited settings. One study reported that the prevalence of aggressive behavior among adults with problematic substance use ranged from 2.41% -73% in India to 95% in Malaysia in some studies.¹ Aggression increases risk for mortality and morbidity and include hostility, impulsivity, violence, and irritability. Aggressive or violent behavior is responsible for 1.43 million deaths globally.¹ Previous studies observed associations between general drug misuse and violence but mostly in prisoners or psychiatric patients³ Still the relationship between substance uses and the risk of violence in patients with mental disorders is not well studied². This is also important to allow for risk stratification and giving better treatment. In addition, most existing reviews have not used standardized clinical criteria to identify drug use disorders and that could introduce bias.

The link between drug use and violent outcomes is complicated as various factors mediate this link. Violence has serious implications directly and indirectly affecting the quality of life of patients and their families. Thus, any modifiable risk factor must be addressed by psychiatrists. Also, Aggression in turn was predictive of early substance use initiation.^{3,4,5,6}

The present study aims to study different types of aggressive behaviors, of our patients suffering from substance use disorder and factors affecting it. This study aimed to assess the relationship between substance use disorder and aggression and various factors like sociodemographic and clinical factors influencing this relationship in Indian society to fill up the lacunae in previous studies done in India.

METHODS:

Study area- A cross-sectional study conducted in patients of substance use disorders in the out-patient Department of Psychiatry of an urban tertiary care teaching hospital.

Duration of study- June 2021 to December 2022

Sampling- Consecutive (universal) sampling

Sample size:

After judging the inclusion and exclusion criteria, calculated sample size was about 192 rounded off to 200 participants

Methodology-

Thus 200 consecutive patients falling in the age group 18-65 years, and fulfilling criteria for substance use disorder as per DSM V, those accompanied by close relative to provide objective data and those understanding English, Hindi, Marathi and fulfilling selection criteria were enrolled from OPD/IPD of De-addiction center of Psychiatry department of a tertiary care teaching institute.

Study was conducted after taking permission from institutional ethics committee and written informed consent of the patients and relatives. Study was conducted over a period of 18 months. Semi structured proforma, modified overt aggression scale and Buss Perry aggression questionnaire scales were applied. Data collected was tabulated.

Statistical Methods

All the data collected from patients and their relatives was compiled in a Microsoft office Excel spreadsheet and analyzed. Results were displayed in Tabular or graphical format. For discrete data, proportion and percentages were computed and for continuous data, mean and standard deviation were computed. A 'P' value less than 0.05 was taken to denote significant relationship.

RESULTS:

In our study the frequency of aggressive behavior was found to be 65%. The mean age of the participants is 37.1 years. There were only 4 females compared to 196 males and ninety percent were unskilled and semiskilled workers.

Married formed the majority in participants. Majority belong to lower socioeconomic class. Alcohol use disorder was the commonest followed by polysubstance use, cannabis use. Opioid use and sedative use respectively. More than ninety percent participants were daily consumers among alcohol, cannabis and opioid use disorder patients. Even the problematic way of use was minimum six months in case of opioid, cannabis and other substances while it was one year in alcohol users. It was observed that quantity of substance use was much larger in more than 80% of participants.

Table No 1 Substance of use, Mean of Age of onset, Amount & Duration of use

Substance	Mean of		
	Age at onset (In years)	Amount In L/GM/Packs/No	Duration of Use (Months)
Alcohol	23.5	1600	177.3
Cannabis	20.4	3.4	105
Opioid	26.2	4.5	54.5
Other substances	10.2	4.6	43
Tobacco	20.7	6	179.6

65% participants first time approached health care facility for deaddiction. Only 20.5% patients accepted substance addiction as their problem and only ten percent considered addiction as a mental disorder, 54% patients accepted that they were more aggressive under the influence of substance and 32.5% patients suffering from substance use were more aggressive when craving for substance. Even relatives of those patients confirmed their aggressive behavior under the influence of substances and also when they were craving for substance but the proportion was little higher compared to reported by patients.

Table No 2 Diagnosis as per DSM 5 in study population -

DSM 5 Diagnosis	No Of patients	Percentage
Alcohol use disorder	122	61.0
Cannabis use disorder	11	5.5
Opioid use disorder	14	7.0
Polysubstance use disorder	51	25.5
Other Substance	2	1.0
Total	200	100.0

Table 3 Aggression scores on MOAS and Buss-Perry scales

Aggression	MOAS SCALE		BUSS-PERRY SCALE	
	No of Patients	Percentage	No of Patients	Percentage
No Aggression	70	35.0	93	46.5
Mild	105	52.5	64	32.0
Moderate	20	10	41	20.5
Severe	5	2.5	2	1.0
Total	200	100	200	100

Table 4 Aggression Scores on subscales of MOAS and Buss-Perry

	Minimum	Maximum	Mean	Standard Deviation
MOAS Verbal aggression score	1	6	2.2	+1.23
MOAS Property aggression score	2	12	5.4	+2.64
MOAS Auto aggression score	3	12	7.8	+2.46
MOAS physical aggression score	4	20	8.3	+3.26
MOAS total weighted score	1	35	12.5	+9.50
Buss-Perry Physical aggression score	12	39	20	+6.60
Buss-Perry Verbal aggression score	5	23	13.7	+4.43
Buss-Perry Anger score	8	31	16.2	+5.44
Buss-Perry Hostility score	8	35	15.8	+6.92
Buss-Perry Total score	34	118	65.7	+21.20

130 (65%) patients were verbally aggressive. Of them 54 were mildly aggressive and 76 patients showed moderate to severe verbal aggression. 75(37.5%) patients exhibited aggression against property. Of these 75 patients that exhibited aggression against property, 32 patients showed mild aggression and 43 patients were more aggressive (moderate to severe). 34(17%) patients were aggressive towards self. Of these 34 patients 15 were mild while 19 patients showed moderate to severe self-harm. 72(36%) patients showed physical aggression. Of these 72 patients 54 were mild aggressive towards others while 18 patients showed moderate to severe aggression. 130(65%) patients were aggressive as per MOAS total score, of these 105 patients showed mild aggression while 25 patients showed moderate to severe aggression on total score of MOAS.

On Buss Perry scale, 94(47%) participants showed physical aggression. 58 patients showed mild physical aggression. 35 patients showed moderate physical aggression while only one patient showed severe physical aggression. 154(77%) patients exhibited verbal aggression on Buss-Perry scale which is more than seen on MOAS scale. 81 patients showed mild aggression while 65 patients showed moderate and only 8 patients exhibited severe verbal aggression.

102(51%) patients showed anger under influence of substance use or when craving for it which shows that substance use causes aggression 62 patients were mild, 37 patients were moderate while only 3 patients were severe on anger subscale.

Hostility was seen in 82(41%) patients. 107(53.5%) patients were aggressive as per Buss Perry scale similar to MOAS scale results. 64 patients showed mild aggression while 41 and 2 patients showed moderate and severe aggression respectively on total score of Buss Perry aggression questionnaire.

Aggressive behavior was prevalent in unmarried compared to married and in younger population with substance use. We found that statistically significant relationship exists between substance use and aggression. When duration, amount and problematic use of alcohol, cannabis, opioid and other substances use was correlated with MOAS and Buss Perry total score it was found that it is significantly correlated with aggression scores.

From our present study, it is seen that patients suffering from alcohol use disorder were more in numbers still the addictive potential and proportion of aggression is less compared to cannabis and opioid that shows that alcohol is lesser evil than those substances.

DISCUSSION

This study examined the association between drug use disorders and violence. The prevalence of aggressive behavior was found to be 65%. We found that significant relationship exists between substance use and aggression. When duration, amount and problematic use of alcohol, cannabis, opioid and other substances use was correlated with MOAS and Buss Perry total score it was found that it is significantly correlated with aggression scores.

Cavalera C prospective cohort study compared patients with severe mental disorders and with different substance use behaviors in terms of sociodemographic and clinical characteristics, hostility, impulsivity and aggressive behaviors and to assess differences in violent behaviors during a 1-year monitoring follow-up in total of 378 participants with severe mental disorders. The study shows a significantly higher risk of violence for patients with severe mental disorders. Persons with Current Substance Use had irritability, negativism and verbal assault compared to Persons with Non-Substance Use and the relationship was statistically significant². Our study also shows similar results.

Mauri MC study aimed to assess the impact of substance abuse and the therapeutic approaches in aggressive vs non-aggressive outpatients over a 3-year period in 400 subjects. Modified Overt Aggression Scale (MOAS) was used to assess any aggressive/violent behavior. The study showed that violent behaviors were significantly higher in alcohol and substance abusers compared to non-abusers except for heroin abusers. Mean weighted MOAS score was significantly higher in patients taking antipsychotics and it was statistically significant.⁶

Lyngdoh cross-sectional study used modified version of Buss and Perry Aggression Questionnaire. The proportion of adolescents using alcohol, tobacco, cigarettes, and Ganja was found to be 4.6%, 9.5%, 5.7%, and 1.6%, respectively. The prevalence of aggressive behavior was 35.3%.⁸ The results obtained in present study are similar to this reference study but much higher than that in it. Parrota Dominic et al study, it is observed that understand the effects of alcohol on aggression rests in its interactional framework. It suggests that we may enhance predictions of whether a given social interchange will result in aggression if we can discern the strength and patterning of instigation and inhibition/disinhibition factors at the time of alcohol use. Many times, person shows aggression on some instigation when he/she has consumed alcohol as it leads to some disinhibition of controls.⁷ Our study results about alcohol use in participants are comparable to this earlier study.

Fatma Dilek Şeker analytical cross-sectional study study, 85.5% of

convicts had used cannabis more than three times in their entire lifetime. Also, there was a significant difference between the total score obtained from the aggression scale and the number of substance types used.⁹ In Lewis Alan et al study they found that after adjusting for demographics, psychiatric disorders, and SUDs, daily cigarette smoking at NESARC Wave 1 compared to non-smokers is predictive of both self- and other-directed violence increasing the odds by 2.1, 2.5.¹⁰ Here our result is different from this earlier study may be because of under or non-reporting by participants or their relative. Dellazizzo Laura et al study also shows positive associations between cannabis use and violence which have also emerged in more recent studies following meta-analyses.¹¹ Our study has similar results to the reference.

CONCLUSION:

Our study showed that statistically significant relationship exists between substance use and aggression. It is concluded from the present study that substance use significantly leads to aggressive behavior. Various sociodemographic factors influenced substance use which in turn influenced aggressive behavior. Factors related to substance use like type of substance, amount of substance, duration of use, age at onset, plays statistically significant role in aggressive behavior of patients suffering from substance. An individual with problematic substance use must be screened for aggressive behavior. Also, the role of education to effectively deal with aggressive behavior among subjects at risk should be emphasized. Multidisciplinary approach in the field of addiction can help in solving the problem. Further research is needed to identify the modifiable risk factors or predictors of aggression. Understanding these factors and appropriately developing a risk management plan to address those factors will definitely help to achieve a good quality of life.

Limitations:

- 1) It is a hospital-based study with a small sample size of cases registered in drug treatment center during the period of only one year. The study limits and could not be generalized.
- 2) Detailed exploration regarding role of stimulants, their amount of use and effect on various types of aggression need to be assessed in detail as these patients were very less in number in our study.

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