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Original Article

Risk of Psychiatric in-patient Violence: A Forensic Perspective

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ABSTRACT

***Objective*:** to assess the accuracy of Brøset violence checklist in predicting violence in psychiatric inpatients in a Pakistani setup.
Study Design: Cross-sectional study.
Place and Duration of Study: Department of Psychiatry, Mayo Hospital, Lahore Pakistan, from Mar to Sep 2021.
Methodology: One Hundred and Sixty-Seven patients from either gender, admitted to an acute psychiatric ward, were included in the study and their scoring was done. Socio-demographic information was collected from patients' files, and violence data and preventive measures were recorded on the Staff Observation Aggression Scale-Revised form by nursing staff for three days. SOAS-R score of 9 or more was declared as a violent incident.
Results: Of the one hundred and sixty-seven patients, the mean age was 34.48±10.06 years. 109(65.3%) were males, and 58(34.7%)were females. Forty-nine episodes of violence were recorded. At a cutt off point of 2, Brøset violence checklist Sensitivity and Specificity were 69.4% and 92.4%, respectively. The corresponding PPV and NPV values were 79.1% and 92.4 %, respectively. ROC characteristics yielded an area under the curve of 0.86, showing good predictive accuracy.
Conclusion: Brøset violence checklist has good predictive accuracy for the prediction of imminent violence in a psychiatric setting in Pakistan.

Keywords: Brøset violence checklist (BVC), Forensic psychiatry, violence, violent Behaviour.

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INTRODUCTION

Psychiatric inpatient aggression is a serious issue for the patients, their families and staff.[1,2] Violence in the psychiatric ward creates a suspicious and hostile environment developing anger, anxiety, Post Traumatic Stress Disorder (PTSD) and insensitive attitude in the direction of the needs of the patients.[3]

The problems above can be addressed by creating methods to prevent psychiatric inpatient aggression, such as good and reliable risk assessment tools to ensure the safety of patients and staff, minimize the risk of violence, develop preventive treatment strategies and enable the staff to counter the problem effectively.[3,4] In psychiatric wards, nurses tend to patients first, keeping an eye on them, spotting potential risks, and implementing any necessary measures. Identification of possible violent behaviour in patients and steps to avoid unforeseen situations is the primary job of psychiatric nurses.[5]

Psychiatric wards need to ensure the safety of workers and patients by taking necessary measures to prevent unforeseen events like self-harm, physical violence towards other patients/staff and suicide. Violent behaviour in psychiatric inpatients poses a huge threat to short-staffed wards all over the world.[6] According to World Health Organization (WHO) 2009 data, there are over 300 psychiatrists, 125 psychiatric nurses, 480 mental healthcare psychologists, and 600 mental healthcare social workers serving Pakistan's huge population.[7] Keeping in view of the huge population of Pakistan (Approx. 220 million) and limited resources, the burden of taking care of psychiatric inpatients is not sufficient. This results in the distress of working staff in the psychiatric ward as well as harm to the patients admitted to the facility. This may also lead to damage to property, causing monetary loss.[7]

In an inpatient psychiatric setting, a threat prediction tool must be quick and simple to use. In addition, reliable and valid tools must be empirically sound based on theory and literature, and these should be used during the decision-making process.[8] Many tools are used for assessing the risk of violence in psychiatric inpatients. These tools include The United Kingdom-700(UK-700), Brøset violence checklist, the Violence Risk Appraisal Guide (VRAG), the Historical,

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Clinical, Risk Management 20 (HCR20) and the Violence Risk Screening-10 (V-RISK-10).but because of long-term predictions and non- feasible requirements for its use, these instruments are rarely used by nurses in psychiatric wards except for Brøset violence checklist.[9] The Brøset Violence Checklist is a short-term predictor of violent behaviour within 24 hours and has been used in a variety of settings worldwide like Norway[8], Sweden[5], Denmark[1] and Portugal.[10].

Pakistan has a diverse society, and most of the Western countries' developed tools are being used in our psychiatric settings for different purposes. Moreover, our clinical setups are flooded with patients, creating further obstacles in developing and promoting locally developed tools to assess the possibility of violence in psychiatric inpatients. If a valid and reliable tool is developed in advanced countries, it must be tested in our settings before regular clinical use. Nurses and staff working in psychiatric inpatient settings in Pakistan lack a validated violence risk assessment tool, and no study has been carried out in Pakistan to assess the validity and reliability of Brøset violence checklist in Pakistan psychiatric setups. This study was carried out to study the predictive accuracy of the Brøset violence checklist in predicting violence in patients at the Acute Psychiatric Ward of Mayo Hospital, Lahore.

METHODOLOGY

The cross-sectional study was conducted at the Department of Psychiatry at Mayo Hospital, Lahore, Pakistan from March to September 2021 after approval was obtained from the Ethical Committee. Using a WHO calculator with the expected percentage of violence was 73% sample size was calculated.[11]

Inclusion Criteria: Patients of either gender aged 18-75 years, with minimum of 3 days stay in the acute psychiatry ward, were included.

Exclusion Criteria: Patients with significant co-morbidities who had to leave the Psychiatric ward during the first three days of admission, requiring treatment in another department without being monitored by staff of the Psychiatry ward and patients who expired within three days of admission were excluded from the study.

Non-probability consecutive sampling technique was used. A total of 167 patients admitted to the acute psychiatric ward of Mayo Hospital, Lahore were selected. A written informed consent was taken from every patient or their relatives. Nurses in the acute psychiatric ward of Mayo Hospital Lahore were trained regarding the use of Brøset violence checklist and SOAS-R forms. Brøset violence checklist proforma and SOAS-R proforma were given to the nurses in an acute psychiatric ward. A Socio-demographic form (information about the patient) was also given to the nurses to be filled. Brøset violence checklist proforma was filled by the on-duty nurse two and a half hours after observing the patient. The patient and their close relatives provided socio-demographic information. Violent incidents were recorded by on-duty nurses on SOAS-R proforma during their shifts. Brøset violence checklist determined the violence risk score of the patient,[12] and SOAS-R was used to monitor, assess and record the frequency and type of violence for the next 24 hours after filling Brøset violence checklist proforma. Specific research proforma of the patient was filled from the information gathered from Brøset violence checklist and SOAS-R proforma of that specific patient. Complete data of all the patients were compiled and analyzed at the end of the study period.

Collected data was analyzed using the software Statistical Package for Social Sciences 23.0 (SPSS-IBM USA). Quantitative variables with normal distribution were expressed as mean±SD and qualitative variables were expressed as frequency and percentages. The predictive accuracy of the violence assessment tool was measured using ROC analysis. Sensitivity, Specificity, Positive Predictive Value and Negative Predictive Value were calculated. The Chi-Square test was employed for the test of significance, taking the value ≤0.05 as significant.

RESULTS

A total of 167 patients with ages ranging from 18 to 75 years with a mean age of 34.48±10.70 years were selected, out of which 109(65.3%) were males, and 58(34.7 %) were females. Out of 167 patients 49(29.34%) patients had violent behaviour, and 29(59.2%) of these patients were diagnosed with bipolar disorder with a *p*-value of 0.008. The behavioural outcomes of variables are shown in Table-I. A total of 49 violent incidents were recorded and revealed at a cut-off point of 2 on the Brøset violence checklist form. The sensitivity of Brøset violence checklist was found to be 69.4%, whereas specificity was 92.4%. The Positive Predictive Value and Negative Predictive Value were recorded as 79.1 % and 92.4 %, respectively. The cross-tabulation between Brøset violence checklist prediction and SOAS-R outcome is shown in Table-II. ROC of the

Brøset violence checklist score for violent incidents was 0.86 (95 % CI: 0.80-0.91), as shown in Figure.

Table-I: Behavioral Outcomes of the Study Participants (n=167)

Variables		Violent (n=49) n(%)	Non-violent (n=118) n(%)	*p*-value
Age in years Mean±S.D		33.92±10.44	34.71±10.84	0.664
Gender	Male	30(61.2%)	79(66.9%)	0.479
	Female	19(38.8%)	39(33.1%)	
Socioeconomic Status	Low	19(38.8%)	42(35.6%)	0.182
	Middle	19(38.8%)	61(51.7%)	
	High	11(22.4%)	15(12.7%)	
Level Of Education	Nil	10(20.4%)	34(28.8%)	0.848
	Primary	06(12.2%)	14(11.9%)	
	Middle	08(16.3%)	18(15.3%)	
	Matric	18(36.7%)	35(29.7%)	
	Bachelors	04(8.2%)	07(5.9%)	
	Masters	03(6.1%)	10(8.5%)	
Diagnosis	Bipolar Disorder	29(59.2%)	38(32.2%)	0.006
	Depression	04(8.2%)	31(26.3%)	
	Personality Disorder	03(6.1%)	08(6.8%)	
	Schizophrenia	13(26.5%)	41(34.7%)	

Table-II: Brøset Violence Checklist Prediction and SOAS-R Outcome (n=167)

	Positive Outcome (Violent)	Negative Outcome (Non-violent)	*p*-value
Positive prediction (Violent)	34(69.4%)	09(7.6%)	<0.001
Negative prediction (Non-violent)	15(30.6%)	109(92.4%)	

Sensitivity: 69.4%, Specificity: 92.4%, Positive Predictive Value (PPV): 79.1%, Negative Predictive Value (NPV): 92.4%, Diagnostic Accuracy: 85.63%

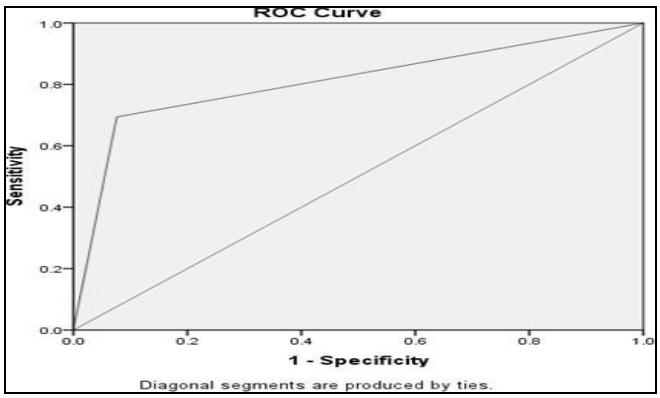

Figure: ROC curve for Brøset Violence Checklist Score

DISCUSSION

Aggressive behaviour and violence in mental health settings are major workplace problems that have an impact on both patients and staff. In psychiatric inpatient units, staff might not be able to monitor for possible violent acts regularly. Therefore, Brøset violence checklist might assist in addressing such issues in psychiatric wards. One of the main advantages of using Brøset violence checklist in clinical practice is that it takes only a few minutes, even in a crowded clinical ward environment.

The aim of the Brøset violence checklist is to identify and prevent violence in healthcare in a way that is beneficial to clinicians, managers and service users/patients. Implementation is short and easy, with no burden on service users or patients, and its simplicity makes Brøset violence checklist cost-effective, with training taking minutes instead of hours or days.[12,13] Researchers proposed the following criteria for evaluating risk assessment tool suitability.[14]

In Pakistan, there is a shortage of psychiatric nurses and mental health care psychologists. Clinicians and nurses always rely on clinical skills and intuition rather than using a valid and reliable risk assessment tool to predict violence in psychiatric inpatients. This study was conducted to determine the predictive accuracy of Brøset Violence Checklist for the prediction of violence in acute psychiatric wards in Pakistan. In this study, a total of 167 patients were considered, which satisfied the inclusion criteria for the study. The mean age from the study sample was 34.48±10.70 years, and the majority of the patients were between 18 to 40 years of age. Out of 167 patients, 109 were male (65.2%) while the remaining 58 were females (34.7 %.). Out of the total patients (n=167) included in the study, Brøset Violence Checklist predicted 42 patients to be violent. However, 49 patients showed actual aggressive behaviour and violent acts according to the SOAS-R form.

In this study, the Brøset violence checklist cutoff was taken as 2 for violence prediction and the SOAS – R cutoff point was taken as 9 for violent outcome on SOAS-R form. With these cutoff points on Brøset violence checklist and SOAS-R, the sensitivity for Brøset violence checklist was 69.4%, and specificity was 92.4 %. The PPV and NPV were recorded as 79.1 % and 92.4 % respectively. Research in China on 296 psychiatric inpatients showed that at a cutoff point of Brøset Violence Checklist 2 or more, the sensitivity was 62.8%, and specificity was 96.2%, with 58.0% of PPV and 96.8 % of NPV, the ROC of the Brøset violence checklist score for violent incidence was 0.85.[11] A cutoff point of 2 was declared sufficient to predict violent behaviour using the Brøset violence

checklist when the validity and reliability study for Brøset violence checklist was carried out by the original developers of Brøset violence checklist in Norway.[15] Originally, it was suggested that a Brøset violence checklist score of one or two indicated a moderate risk of violence, and a score equal to or greater than three indicated a high risk of violence. All these studies are in agreement with our findings.[15]

It was followed for many years. However, different Brøset violence checklist cut-off scores are taken to predict violence among psychiatric inpatients. Hvidhjelm and colleagues studied a total of 156 patients with Brøset violence checklist for 24 months.[16] Out of a total of 139,579 Brøset violence checklist registrations, 1999 scores were above 0, and 419 violent incidents occurred during the period, indicating Brøset violence checklist was a strong predictor for violence.16 In another study carried out in Australia, Brøset violence checklist sensitivity was 45.7%, and specificity was 99.4%, with a cut-off point of 3.[17] A study carried out in Sweden using the Brøset violence checklist with a cutoff point of 1 showed a sixfold increase in the risk of violence.[5]

In this study, the area under the ROC curve was 0.86. At these cut-off points for Brøset violence checklist and SOAS-R, the results were consistent with other studies with the same cut-off points.[10,15,18]

LIMITATIONS OF STUDY

The study was conducted only at a single centre, including people from a single region. The effects of different therapies on violent behaviour were not recorded. A multicenter study with people from different regions and races is required for more reliable results.

CONCLUSION

This study concluded that Brøset violence checklist has good predictive accuracy for the prediction of imminent violence in psychiatric settings in Pakistan.

Conflict of Interest: None.

Authors Contribution

Following authors have made substantial contributions to the manuscript as under:

SI & MA: Data acquisition, critical review, approval of the final version to be published.

ARM: Study design, data interpretation, drafting the manuscript, critical review, approval of the final version to be published.

SS: Conception, data acquisition, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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