

## Self-Inflicted Major Trauma: Inpatient Mental Health Management and Patient Outcomes

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**Abstract :** Introduction: Self-inflicted injury is a recognised cause of major trauma in adults and is an independent indicator of a reduced functional outcome compared to non-intentional major trauma. There is little literature available on the inpatient mental health (MH) management of this vulnerable group. A retrospective review was conducted of inpatient MH management of major trauma patients admitted to a UK regional Major Trauma Centre (MTC). Their outcomes were compared to all major trauma patients. This group of patients required multiple MH interventions whilst on the Major Trauma Ward (MTW) and had a worse functional outcome compared to non-intentional trauma. Method: The national TARN (Trauma Audit and Research Network) database was used to identify patients admitted to a regional MTC over a 2-year period from June 2018 to July 2020. Patients with an ISS (Injury Severity Score) of greater than 15 with a mechanism of either self-harm or high-risk behavior were included for further analysis. Inpatient medical notes were reviewed for MH interventions on the MTW. Further outcomes, including mortality, length of stay (LOS) and Glasgow Outcome Score (GOS) were compared with all major trauma patients for the same time period. Results: A total of 60 patients were identified in the time period and of those, 27 spent time on the MTW. A total of 23 (85%) had a prior MH diagnosis, with 11 (41%) under the care of secondary MH services. Adequate inpatient records for review were available for 24 patients. During their inpatient stay, 8 (33%) were reviewed on the ward by the inpatient MH team. There were 10 interventions required for 6 (25%) patients on the MTW including, sections under the Mental Health Act, transfer to specialist MH facility, pharmacological sedation and security being called to the MTW. When compared to all major trauma patients, those admitted due to self-harm or high-risk behavior had a statistically significantly higher ISS (31.43 vs 24.22,  $p=0.0001$ ) and LOS (23.51d vs 16.06d,  $p=0.002$ ). Functional outcomes using the GOS were reduced in this group of patients, GOS 5 (low disability) (51.66% vs. 61.01%) and they additionally had a higher level of mortality, GOS 1 (15.00% vs 11.67%). Discussion: Intentional self-harm is a recognised cause of major trauma in adults and this patient group sustains more severe injuries, requiring a longer hospital stay with worse outcomes compared to all major trauma patients. Inpatient MH interventions are required for a significant proportion of these patients and therefore, there needs to be a close relationship with MH services. There is limited available evidence for how this patient group is best managed as an inpatient to aid their recovery and further work is needed on how outcomes in this vulnerable group can be improved.

**Keywords :** adult major trauma, attempted suicide, self-inflicted major trauma, inpatient management

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