

# Mental health visits spike prior to burn injury, indicating opportunity for intervention

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In a new study examining the relationship between mental health and burn injury, researchers note that burn injuries may be preventable through increased access to high-quality mental health care. The study's findings also show that burn injury victims experience significantly increased rates of self-harm after their injuries. The study results are published as an "article in press" on the *Journal of the American College of Surgeons* website ahead of print publication.

Mental illness is a major reason why burn patients are readmitted after their [burn injuries](#), according to lead study author Stephanie Mason, MD, department of general surgery, University of Toronto, Canada. Prior studies have addressed both pre- and post-burn injury [mental illness](#), but this study is the first to address the connection between mental illness and burn injury within the same patient, Dr. Mason explained. The study was designed to take a deeper look at whether patients have mental health emergencies after a burn injury because of preexisting mental illness, or if the burn injury itself increases the risk of mental illness. "We didn't have a complete understanding of how burn affected the risk of mental illness," Dr. Mason said.

Two important findings emerged from this research study, according to Dr. Mason:

1. Among all patients regardless of whether or not they utilized

[mental health services](#) prior to their burn injury, the rate of self-harm doubled after injury.

2. Because mental health visits spike in the three months prior to burn injury, an opportunity for intervention exists to help prevent burn injury among these patients.

## **Mental Health Visits Before and After Burn Injury**

The researchers looked at administrative data from patients aged 16 years and older admitted for major burn injury treatment between April 1, 2003, and March 31, 2011, in Ontario, Canada. This analysis allowed Dr. Mason and fellow study authors to look at the rate of mental health visits made by individual patients both before and after burn injury.

Of the 1,530 patients included in the study, 94 percent had one or fewer mental health visits in the three years prior to burn injury, compared with the other 6 percent who had two or more visits prior to injury. Findings show the rate of mental health visits after burn injury tripled for the low-utilizers of mental health services, along with a significant increase in visits related to anxiety, mood disorders, substance abuse, self-harm, and schizophrenia. In contrast, high-utilizers of mental health services prior to burn injury showed a decreased rate of mental health illness visits after injury, along with decreased rates of mood disorder and substance abuse—a somewhat surprising finding, according to Dr. Mason. Study authors said that to the best of their knowledge, this is the first study to report self-harm rates following burn injury.

"Among preinjury low utilizers [of mental health services], we observed significantly increased rates overall and for visits related to mood and anxiety disorders, self-harm, schizophrenia, and substance abuse visits after injury," study authors noted.

An increase in self-harm emergencies after burn injury was found across

all study subgroups. The strongest association between burn injury and self-harm was found in females, individuals with higher income, and patients with a high level of pre-injury comorbidity.

## **Opportunity for Intervention**

The greatest number of mental health visits occurred in the three months leading up to a burn injury. The study authors noted mental illness is an independent risk factor for unintentional injury and injury recidivism. Given the awareness of patients' engagement with the health care system leading up to burn injury, the authors view this finding as an opportunity for intervention.

"These data suggest that the treatment of mental illness might be an important target for burn prevention efforts," study authors note. "The high rate of mental health visits in the three months immediately prior to burn injury also has implications for inpatient burn management. Patients with premorbid mental illness are more likely to experience delirium, have poor coping, and experience delayed wound healing."

In addition to prevention of burn injury, these findings also have implications for preventing suicide. The rate of intentional self-harm emergencies double after burn injury and self-harm is the most important predictor of subsequent suicide, study authors note.

"Better mental health care benefits not only the patients who might not end up injured in the first place, but we also need better mental health care after burn injury to link these patients up with the resources they need," Dr. Mason said.

The researchers said the key strength of the study is its design, allowing for comparisons of pre- and post-burn mental health rates for individuals. The use of administrative data provided the ability to

capture patient data both before and after burn injury, which guards against biases that may arise from relying on patient self-reporting of prior mental health.

Limitations of the study were acknowledged by the researchers in that administrative data limits the ability to assess the severity of mental health conditions or to fully understand treatment. Additionally, outpatient mental health visits were not included in the analysis—only patients who sought or accessed mental health treatment in an emergency setting were accounted for. The authors also noted that although increased schizophrenia was observed in pre-injury low utilizers, it is not likely that burn injury is associated with the onset of schizophrenia. Rather, it is more likely that patients received diagnosis as a result of burn injury and prolonged contact with health providers.

The results of this study are limited to patients from Ontario, Canada, but Dr. Mason believes the findings and recommendations may also be generalizable outside of Canada.

"Access to [mental health care](#) and the quality of it is an issue across the board," Dr. Mason said. "Surgeons need to be aware how great the [mental health](#) burden is among these patients. It's something we need to be asking about and making sure patients are able to access appropriate care."

**More information:** Stephanie A. Mason et al, Association Between Burn Injury and Mental Illness among Burn Survivors: A Population-Based, Self-Matched, Longitudinal Cohort Study, *Journal of the American College of Surgeons* (2017). [DOI: 10.1016/j.jamcollsurg.2017.06.004](https://doi.org/10.1016/j.jamcollsurg.2017.06.004)

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