# New-onset psychiatric disorders among traumatic brain injury phenotypes

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## The Problem

Traumatic brain injury (TBI) patients constitute a highly heterogeneous population, with varying risks for New-onset Psychiatric Disorders (NPDs). The occurrence of NPDs after TBI constitutes a significant public health concern, given the potential long-term impact on individuals' mental health.

## Objective

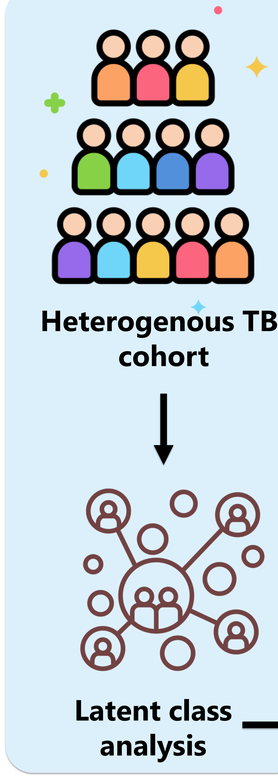
The objective of this study was to identify TBI phenotypes and determine how NPDs differ among these phenotypes.

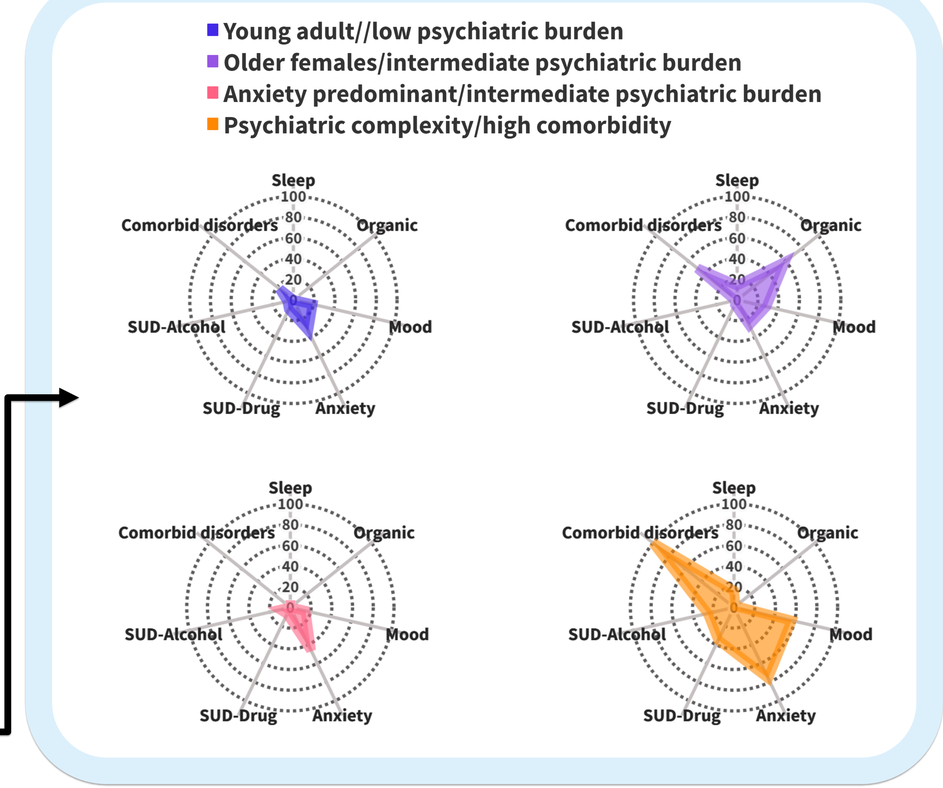
## Methods

Latent class analysis-based clustering was applied. Age, sex, medical comorbidities, pre-injury psychiatric diagnoses, injury severity, mechanism, discharge destination and length of stay were identified covariates. The outcome of interest was NPD in the two years post-TBI. The effect of classes on NPDs was assessed using log binomial regression.

## Results

| Cohort | Phenotypes | Risk of NPDs |
|---|---|---|
| 1,244 TBI patients From the trauma registry | 4 phenotypes with significant differencs across all covariates | 28% higher risk of NPDs in psychiatric complexity/high comorbidity phenotype |




## Conclusions

There are clinically distinguishable phenotypes with different patterns of NPD risk among TBI patients. These findings highlight the significance of incorporating psychiatric preventive screening for individuals following a TBI. Classifying individuals with respect to their phenotype may improve risk stratification of TBI patients, allowing for the early identification of NPDs.

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