

Invisible wounds: Adverse posttraumatic neuropsychiatric sequelae among patients discharged from 29 emergency departments

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#### **Abstract**

**Background and Objectives:** One-third of ED visits are for an evaluation after a traumatic injury or exposure and more than 90% are discharged from the ED. EDs routinely provide advanced interventions for visible wounds from trauma, but screening and treatment for the “invisible wounds” of adverse posttraumatic neuropsychiatric sequelae (APNS) is not standard practice. As a first step towards addressing this deficit, we aimed to estimate the short-term incidence of symptoms of APNS among ED patients who sustained a traumatic injury or exposure.

**Methods:** AURORA is a longitudinal, observational study of patients from 29 US EDs who sustained a traumatic injury or exposure. Eligibility criteria are age  $\geq 18$  years, English-speaking, not pregnant, and with smart phone access for follow-up. Participants were surveyed using standardized instruments at ED enrollment and at 2 and 8 weeks post-enrollment for the presence of moderate or severe APNS:

depressive symptoms (DS, PROMIS Short Form 8b  $\geq 60$ ), posttraumatic stress symptoms (PTSS, PCL-5  $\geq 28$ ), somatic symptoms (SS,  $\geq 3$  somatic symptoms  $\geq 2$  points higher than reported baseline), and pain symptoms ( $\geq 4$  on 0-10 NRS).

Results: Of the 1,618 AURORA participants, most were female (64%), non-white (67%), and their mean age was 35.4 years (SD 13.05). 1255 (78%) experienced motor vehicle collision, 155 (10%) were physically assaulted and 1546 (95%) were discharged home after their ED evaluation. Two weeks after discharge, 88% reported one or more moderate/severe APNS symptoms, and 72% reported two or more moderate/severe APNS symptoms. The most common APNS were moderate or severe pain (79%), somatic (72%), posttraumatic stress (53%), and depressive (30%) symptoms. At 8 weeks follow up, 81% of participants continued to report one or more moderate/severe APNS and 62% reported two or more moderate/severe APNS symptoms. The most common APNS 8 weeks post-enrollment were moderate or severe pain (65%), somatic (66%), posttraumatic stress (49%), and depressive symptoms (27%).

Conclusion: Among ED patients evaluated after trauma and discharged home, symptoms of APNS are the norm two months after their ED visit. Screening and treatment for these “invisible wounds” are necessary to meet this unmet need.

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