Medical Xpress

Survivors of firearm violence worse long-term outcomes than motor vehicle crash survivors

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In 2017, for every victim who died of a firearm injury in the U.S, three individuals survived. But the burden of firearm injuries is not limited to

death. A new study led by investigators from Brigham and Women's Hospital finds that 6-to-12 months after traumatic injury, rates of chronic pain, post-traumatic stress disorder (PTSD) and other poor physical and mental health outcomes were alarmingly high among survivors of firearm violence—even higher than among survivors who had sustained similar injuries in motor vehicle crashes. The study, which highlights the need for following survivors after discharge and providing continued care, is published in *Annals of Surgery*.

"When it comes to the public health problem posed by firearm injury, death is just one piece of the puzzle," said corresponding author Juan P. Herrera-Escobar, MD, MPH, the research director of Long-Term Outcomes in Trauma in the Center for Surgery and Public Health at the Brigham. "Mortality rates for trauma patients have been dropping significantly over the last 20 years, but this presents a new challenge: What will we do for patients whose lives we save but who continue to suffer from the repercussions of traumatic injury? Our study shows that injury, and especially firearm injury, casts a long shadow over the lives of those who survive."

As part of the Functional Outcomes and Recovery after Trauma Emergencies (FORTE) project, Herrera-Escobar and colleagues from the Center for Surgery and Public Health surveyed adults who had survived traumatic injury after being treated at one of three level-I trauma centers in Boston between 2015-2018. FORTE is intended to measure long-term outcomes that are meaningful to patients and their families, including functional status, health-related quality of life, treatment adherence, and more.

Of 177 eligible firearm injury survivors, 100 were successfully contacted and 63 completed the survey. This response rate of 35 percent was much higher than in previous studies of firearm injury survivors.

The team analyzed outcomes for people who had survived firearm injury and compared these outcomes to people who had survived similar injuries sustained in motor vehicle crashes. All survivors were surveyed as part of the FORTE project. Among survivors of firearm injury, 68 percent reported daily pain, 53 percent screened positive for PTSD, 39 percent reported a new functional limitation in an activity of daily living (such as walking, cooking, eating or going to the bathroom), and 59 percent had not returned to work. Three-out-of-four firearm injury survivors had at least one of these negative long-term outcomes.

Not only were these rates significantly higher than rates among the general population, survivors of firearm injury were significantly more likely to have daily pain or PTSD, and worse physical and mental health-related quality-of-life than survivors with similar injuries from motor vehicle crashes.

The authors note that given that their analysis was done at three urban trauma centers in Boston, their findings may or may not be generalizable to the rest of the U.S. As with all survey-based studies, the study may also be limited by selection bias and recall bias as well as a lack of baseline information about those surveyed.

According to Herrera-Escobar, he and his colleagues have just begun to scratch the surface and many more questions remain.

"We need to better understand the causes of these outcomes so that we can find opportunities for intervention," he said. "This work has profound implications for trauma systems and highlights the failure to help patients receive the proper services for a successful recovery after a traumatic, firearm-related injury."

More information: Juan Pablo Herrera-Escobar et al, Patient-reported Outcomes at 6 to 12 Months Among Survivors of Firearm Injury in the

United States, *Annals of Surgery* (2020). DOI: 10.1097/SLA.0000000000003797

Provided by Brigham and Women's Hospital

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