

Witnessing violence affects kids' health

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School-aged children who witness violence in urban communities show symptoms of post-traumatic stress. They also suffer physiological effects with a disruption to their normal cortisol production pattern during the day, which may have long-term negative effects on their health.

According to Dr. Shakira Franco Suglia, from the Harvard School of Public Health, and her team lead by Dr. Rosalind J. Wright from Brigham and Women's Hospital, Harvard Medical School in Boston, USA, because these children are not diagnosed with post-traumatic stress disorder, these abnormal physiological symptoms are unlikely to be picked up by their doctors. The study¹ has just been published online in Springer's *International Journal of Behavioral Medicine*.

Young people living in urban communities in the US experience and witness high levels of serious and lethal violence. Such traumatic experiences can have lasting negative effects on their health. Although the mechanisms are yet to be confirmed, one plausible explanation is that the body's stress-response system is involved. Cortisol is a hormone regulated by the stress-response system. Cortisol levels are typically highest in the morning and fall gradually throughout the day. Stress-induced changes to how cortisol is produced and regulated can lead to a weaker immune system, and increased fat storage in the abdominal region linked to cardiovascular disease and diabetes.

Dr. Suglia and her team examined the impact of exposure to community violence on physiological markers of [stress response](#) in children. More specifically, they looked at the influence of post-traumatic stress symptoms (e.g. difficulty with attention or sleep, intrusive thoughts,

flashbacks, worries) on the daily cortisol response among 28 girls and 15 boys aged 7-13 years old. Mothers rated their child's exposure to community violence (e.g. hearing gunshots, witnessing or experiencing shoving, hitting, punching, knife attacks, shootings) and the resulting post-traumatic stress symptoms. The researchers also collected saliva samples from the children four times a day over three days to measure cortisol production over the course of the day.

They found a link between exposure to community violence and a disruption to the stress pathways in the body. In particular, the higher children scored on the stress symptoms, the greater the disruption to their cortisol production pattern and the higher their cortisol levels over the course of the day, especially in the afternoon and evening.

Dr. Shakira Franco Suglia concludes: "Our study indicates that important biological effects occur in children living in high-crime neighborhoods, although with less severe distress symptoms than those experienced by children diagnosed with post-traumatic stress disorder. As a result, they may not come to the attention of healthcare providers and a large number of [children](#) may be impacted with broad adverse health effects."

More information: Suglia SF et al (2009). Posttraumatic stress symptoms related to community violence and children's diurnal cortisol response in an urban community-dwelling sample. *International Journal of Behavioral Medicine* DOI 10.1007/s12529-009-9044-6

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