

Children injured in traffic from a medical and psychosocial perspective - causes and consequences

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Aim: To examine the causes and consequences of road traffic injuries in children from a physical and psychosocial perspective, and to identify unfavourable circumstances and children who are at risk of injury and disability.

Methods: Study I was a systematic review of the literature on posttraumatic stress disorder (PTSD) and PTSD symptoms (PTSS) in children injured in road traffic accidents. Study II and III were follow-up studies investigating residual physical (II), psychological and psychosocial problems (III) in a sample of children (< 16 years), registered with a traffic injury at the A&E department of the children's hospital in Gothenburg in year 2000. Study II included 341 children and Study III 292 children. Data from a questionnaire were linked to the accident and injury data obtained from the hospital. Study IV, including 4 246 cyclists injured in 1993-2006, investigated the use and protective effect of helmets and changes in injury patterns during a period of increased helmet use. The injury severity was classified according to the Abbreviated Injury Scale (AIS).

Results: One third of the children fulfilled the diagnostic criteria of PTSD or PTSS after one month and about half of that group after 3–6 months. A perceived threat and high levels of distress was associated with PTSD/PTSS, especially in girls. Physical problems were reported for 16% of the children and psychological and psychosocial problems for 22% of the children in the follow-up studies (Study II and III). Residual problems were not associated with the injury severity. Severe physical problems were rare and most often reported by moped riders. Age and neck injuries were associated with residual physical problems. Residual physical problems, foreign extraction, treated as an inpatient, collision with a motor vehicle, injured as pedestrian, and skull/brain injuries were all associated with residual psychological problems. Children with residual problems reported limitations in daily living activities after the accident more often than those without residual problems. In study IV, helmets were used by 40% of the injured cyclists at the beginning of the study period (1993-2006) and by 80% at the end, much less frequently by teenagers, especially girls. Helmets had a considerable and significant protective effect against head injuries. The proportion of children with skull/brain injuries of any severity did not change significantly during the study period. The proportion with facial injuries decreased, and the proportion with non-negligible injuries to the upper extremities increased. The ratio between the number of children with head injuries and those with limb injuries decreased during the period.

Conclusions: Trauma care should include procedures that can identify children at risk of posttraumatic stress and other residual psychological and psychosocial problems, which may otherwise be overlooked as it is not related to the injury severity. The risk of residual physical problems should be recognised in older children after moped crashes, and in children with neck problems. Teenagers must be informed about the high risk of severe skull/brain injuries in cycle crashes without a helmet. Injuries to the upper extremities in cycle crashes merits attention.

Keywords: Posttraumatic stress, PTSD, PTSS, trauma care, road traffic accidents, children, follow-up, risk factors, disability, injury, physical consequences, sequel, bicycle accident, helmet, injury severity, upper extremity injury, head injury, psychological problems, psychosocial problems.

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- I. Olofsson E, Bunketorp O, Andersson A L. Children and adolescents injured in traffic - associated psychological consequences: a literature review. Acta Paediatr 2009;98:17-22.
- II. Olofsson E, Bunketorp O, Andersson A L. Children at risk of residual physical problems after public road traffic injuries – a one-year follow-up study. Injury 2012;43:84-90.
- III. Olofsson E, Bunketorp O, Andersson A L. Trafikskadade barn och ungdomar riskerar kvarstående psykiska och psykosociala problem - möjliga riskfaktorer. Socialmedicinsk tidskrift. 2012;6:500-12.
- IV. Olofsson E, Bunketorp O, Andersson A L. Helmet use and injuries in children's cycle crashes in the Gothenburg region. Manuscript.