

Health consequences of bicycle crashes

Marcus Skyum Myhrmann and Mette Møller

Keywords: road traffic injury, cyclist crash consequences, long-term consequences, health impact

Background: When evaluating the health consequences or burden of diseases and injuries, it is often done using disease-adjusted life years (DALYs). This measure is constituted of a combination of mortality and disability. It has the advantage of being easily applicable through a set of generalised "weights" of different injuries and diseases. A problem with generalised weights related to the burden of a given road traffic injury however, is that the burden of an injury could be perceived differently by individuals preferring different modes of transportation. This is not taken into account when using generalised weights.

Aim: We intend to distribute a self-report survey with the aim of increasing the knowledge regarding the health consequences of cyclist crashes.

Method: We apply the "Late Effect of Accidental Injury Questionnaire" (LEAIQ) as the main building block of this survey. The survey is extended with questions about quality of life and satisfaction with ones own health, bicycling habits and socio-demographics. The survey will be distributed using social media and other forums. In this regard a repeated survey is not possible, to protect the anonymity of the respondents. Respondents for the LEAIQ are selected based on the condition that they have been implicated in bicycle crash in the previous two years, to ensure that respondents can reliably describe the crash.

Results and expected results: In a pilot-test amongst N = 117 PhD students at the Technical University of Denmark, 37 reported to have been implicated in a crash in the past two years, 13 (35%) of whom had been involved in several. 84% of the crashes were reported to result in superficial injuries and contusions and 75% of the respondents experienced ailments from the injuries for three weeks or fewer. When asked about experiencing distress symptoms in the past 6 months, 22 (59%) reported several, nine (24%) of whom reported fear of being in situations similar to that of the accident. When further asked about their overall psychological health nine respondents (24%) reported worsened psychological health since the accident. Eight (22%) of whom indicate that this is connected to the crash. This contrasts the bodily health, which was reported as unchanged compared to before the crash by all respondents. In the full study we expect to be able to perform statistical analysis, linking crash and injury characteristics to health consequences and assess correlations and significance thereof.

Conclusion: Increased understanding of bicycle crash consequences has the potential to reveal what crash types would benefit from mitigating actions. The results of a pilot-test indicate that the psychological consequences linger, even after bodily health is reported to be the same as prior to a crash. This is evidenced by all respondents reporting similar bodily health as prior to the crash, while 22% report overall worsened psychological health and that it is connected to the crash. If such consequences lead crashed cyclists to cycle less, the consequences and future impact are not only related to the psychological health but also to that reduced physical activity. Therefore mode-specific health consequence assessment should receive more attention and be regarded as utmost important, when evaluating the health burden and consequences of road traffic injuries.