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CYCLING SAFETY IN AN ADOLESCENT POPULATION

JEF VANPARIJS

Thursday, February 20th 2020 at 18:00

Room D2.01 Promotion Room, campus Etterbeek

Please confirm your presence before February 13th to jef.vanparijs@vub.be

EXAM COMMISSION
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ABSTRACT OF THE RESEARCH

The potential of cycling as a mode of transport to increase physical activity, reduce traffic jams and reduce traffic related air pollution is increasingly recognized but so are the risks related to cycling. Improving traffic safety, especially for a vulnerable population such as cycling adolescents, is a challenge.

A thorough literature search was conducted to reveal the gaps in research on cycling safety. This review pointed out that studies including cycling exposure are scarce, especially for an adolescent population.

To improve cycling safety in this vulnerable population, we set up several studies combining a prospective and a retrospective design. We wanted to find an answer to 4 main questions:

1) On what roads and how much are adolescents cycling?
2) What is the role of the infrastructure on the odds of commuter cycling?
3) Where do the bicycle crashes in an adolescent population occur?
4) How do the bicycle crashes in an adolescent population occur and what is the role for the infrastructure?

Our studies demonstrated that 27% of the adolescents are commuting by bicycle on a daily basis. They have a high cycling exposure on roads with low traffic density without bicycle specific infrastructure. Besides the distance, the presence of quiet roads is the main factor increasing the odds of daily bicycle commuting to school. The presence of dedicated cycling infrastructure has no effects on the odds of commuting by bicycle on a daily basis.

In addition, we found that 64% of the bicycle crashes in an adolescent population are on roads without bicycle specific infrastructure and 17% of the crashes occurred at intersections.

When looking at the bicycle crash etiology, 79% of the crashes were caused by human failure (distraction or traffic rule infringement), whereas 21% of the crashes were directly caused by the infrastructure.

Overall, these results suggests that perceived safety on roads with low traffic densities increases cycling exposure but these roads are known to increase the injury risk. We advise to increase adolescents awareness towards the safety of bicycle paths compared to rural roads with low traffic density. We should promote to use bicycle paths on busy roads instead of using rural roads. Further, we found that insurance companies have the potential to increase our knowledge on bicycle crash etiology and we suggest that policy makers take initiatives to make use of this data source and to put more emphasis on the etiology of the crashes instead of the infrastructure.

CURRICULUM VITAE

In 2006 Jef Vanparis (born 13 Augustus 1986 in Lier, Belgium) started to study Sport science at the Vrije Universiteit Brussel. After graduating in 2011, Jef started as a researcher at the Vrije Universiteit Brussel. In 2013, he started his PhD research and presented his work on multiple national and international conferences. In 2017, he combined his research with the coordination of two European projects. Currently Jef has authored and co-authored 7 peer reviewed articles that were published in Accident Analysis and Prevention, Journal of Transport and Health, Medicine and Science in Sports and Exercise, Cells, International Journal of Sports Physiology and Performance and Angiogenesis.