

Factors associated to cycling accidents in the elderly population

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ABSTRACT

Cycling supports the health, mobility and independency of the aging population. However, elderly cyclists have an increased injury risk. On average, the risk of older people to sustain an injury in a cycling accident is 3.2 times higher per cycling kilometre than for non-elderly [1] and it is increasing with age. In comparison with younger adults (<65 years), the risk of hospitalization is more than 4 times higher for the older adults (>65 years) [2]. The aim of this study was exploring which demographic, bicycle or personal factors are associated with cycling accidents and whether such factors can predict a bicycle fall. Therefore, 760 cyclists aged 65 years and older were requested to fill out a questionnaire which included questions on, among others: age, gender and living environment (demographics); bicycle type, model and engine position (bicycle specifications); physical and mental impairments and confidence (personal characteristics). A univariate model was used to study the relationship between topics from the completed questionnaires and falling off a bicycle. The univariate model showed that age, physical and mental impairments, bicycle model, living environment, uncertainty of the cyclist and adjustment of cycling behaviour were associated with falling of a bicycle. Multivariate analyses were used to build a predictive model. The following factors stayed in the model: age (odds ratio (OR)=1.068; 95% confidence interval (CI): 1.037-1.100; $P=0.00$), mental impairments (OR=2.985; CI=2.168-4.111; $P=0.00$) and living environment (OR=2.044; CI= 1.4727-2.927; $P=0.00$). In conclusion, several factors were associated with falling off a bicycle and might increase the fall risk by a factor 2 to 3 in the elderly population. This has to be taken into account when implementing new cycling related safety measures or material.

Keywords: elderly, falling, cycling accidents, questionnaire

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