



**Karolinska
Institutet**

Department of Public Health Sciences

**Going unlicensed: Related behaviors and car crash
experience among young drivers**

ACADEMIC DISSERTATION

For the degree of PhD at Karolinska Institutet

The thesis will be defended in public at Rockefeller Lecture hall,
Nobels väg 11, Solna

At 9:00 on Thursday, November 22, 2012

by

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Stockholm 2012

ABSTRACT

Background: Globally road traffic injuries are a major cause of injury and mortality, not least among the young. Although unlicensed driving is prevalent in that age group, the phenomenon has not received much attention.

Aims: This thesis attempts to increase knowledge about the scope of unlicensed driving in youth and its related individual and contextual attributes.

Methods: The thesis encompasses four register-based studies, three based in the US and one in Sweden. Unlicensed drivers are any young person below, at, or above the age of licensing without a license, operating a four-wheel passenger motor vehicle on a road. Study I deals with driver characteristics and crash circumstances of fatal road traffic crashes (RTC) involving a young unlicensed driver (YUD) in the US. In Study II, attention is paid to county material deprivation and urbanicity as regards to fatal RTCs. Based on a Swedish national cohort design, Study III assessed and compares the frequency of individual young drivers who are injured in RTC at different ages and their socio-demographic characteristics. Behavior surveys of Montana high school students are used in Study IV in considering how health risks cluster in and out of the car in youth stratified by license and driving status.

Results: In the US, one of nine (10.8%) fatal crashes involved a YUD. Among those, a majority were males (74.5%), age-eligible to be licensed (72.5%), and from the southern region (49.9%). At the time of crash, dangerous driving practices like speeding (85%) and not using car restraint (53.9%) among others were noted (Article I). At the county level in the US, a positive association between material deprivation and fatal crashes involving young unlicensed drivers was observed (OR = 1.19, 95% CI 1.17, 1.21). A weak negative association between material deprivation and fatal crashes in suburban counties (OR = 0.92, 95% CI 0.90, 0.95) was found (Article II). In Sweden, crashes of unlicensed drivers increased at age 18 and remained steady through age 27. A six-fold increase in relative crash risk for unlicensed males was revealed (95% CI 5.24-8.25). Unlicensed drivers from the lowest socioeconomic families ran four times the risk (4.18, 95% CI 2.40-7.28) of a severe injury in a crash than those from the highest. Relative risk of a YUD in a crash in rural areas was 3.29 (2.47-4.39) compared to YUD in metropolitan areas (Article III). The prevalence of unlicensed driving was 5.1% of the students. Male students reported more health risk behaviors of all types than females. Both male and female YUD disclose more car driving and non-traffic health risk behaviors than their licensed peers do. (Article IV).

Discussion: Crashes involving YUD are common both in the US and Sweden. They occur primarily among those age-eligible to be licensed, males, and those from lower socio-economic status. Dangerous driving practices are common at time of crash. As is the case for young licensed drivers, health risk behaviors tend to cluster among YUD to a greater extent. Where YUD live seems to matter for their crash involvement, with urbanicity and material deprivation coming into play.

Conclusion: Studies on RTC and self-reported health risk behaviors suggest that driving unlicensed among the young is rather common especially, even past the age of licensing. It is more frequent among some socio-demographic groups of young people, is accompanied by other health risk behaviors and can be more prevalent in some types of areas. To address the issue will require multi-disciplinary targeted efforts to both discourage unlicensed driving and promote developmental opportunities with safe youth mobility options.

Key words: Unlicensed, young drivers, US, Sweden, material deprivation, road traffic crashes, health risk behaviors, socioeconomic position