

## **Driver perceptions of the system-wide factors contributing to driving while fatigued**

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### **Abstract**

Fatigued driving is a well-known road safety issue. While fatigued driving is usually investigated from an individual perspective, this study used a novel approach to identify the system-wide factors influencing this issue. An online survey methodology was used to gather the perceptions of 150 Queensland drivers about the factors that contribute to fatigued driving, and recommendations for reducing its prevalence. The results suggested that drivers perceive individual factors to be the predominant cause of fatigued driving. However, some wider system-level factors and recommendations were identified. Implications for practical countermeasures to reduce the incidence of fatigued driving are discussed.

### **Background**

Driver fatigue is estimated to be a contributing factor in 20-30% of deaths on Australian roads (Australian Transport Council, 2011). The effects of fatigue on driving performance are well-known yet few countermeasures are available to reduce its incidence beyond driver education and emerging fatigue detection systems.

Research into fatigued driving has tended to focus on individual factors such as the effects of fatigue on driving performance (e.g. Jackson, Croft, Kennedy, Owens & Howard, 2013), driver awareness of fatigue (e.g. Williamson, Friswell, Olivier & Grzebieta, 2014) and motivations and decision-making around fatigued driving (e.g. Watlin, Armstrong, Obst, & Smith, 2014). However, to date the problem of driver fatigue has not been explored from a systems perspective, an approach recently advocated as a means of taking into account the complex nature of road transport and road safety (e.g. Salmon, McClure & Stanton, 2012).

Consequently, the aim of this study was to consider fatigued driving from a systems thinking perspective to uncover the factors across the road transport system that contribute to fatigued driving.

### **Method**

An online survey was used to gather the perceptions of 150 drivers on the factors contributing to fatigued driving. The survey collected data on demographics, driving behaviours, perceptions of the reasons why fatigued driving occurs and suggestions for preventing fatigued driving.

To date, an initial content analysis has been performed (the completed findings will be provided in the full conference paper). The findings were mapped onto a representation of the road transport system that identifies hierarchical levels of the system (e.g. Parliament; Government agencies & industry bodies; Operational management; Local Management; the Road environment). This mapping enables the identification of where the factors reside within the wider road transport system and who might be responsible for removing them.

### **Results**

The initial results show that most factors identified by participants reside at the lower levels of the road transport system. For example, participants reported a general unwillingness to stop to rest when fatigued to avoid being late to work or appointments and being 'time poor'. They also reported social factors (e.g. feeling under pressure from peers to drive when fatigued). While factors

at the higher levels of the road transport system were less frequently mentioned, there were suggestions at this level, for instance the provision of more rest stops on highways.

Interestingly, some factors identified were outside of the scope of the road transport system itself. For example, recommendations about the availability of alternative forms of transport were made to avoid reliance on driving at times where the driver is likely to be fatigued. Others focussed on reducing time pressures experienced in everyday life such as work and study schedules, highlighting the interdependent nature of road transportation with other aspects of drivers lives.

### **Conclusions**

Fatigued driving is a complex issue with system-wide contributing factors. The results of this study have practical implications for road design and individual interventions such as driver education campaigns and will be extended in future research to incorporate the views of road safety experts.

### **References**

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