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# Examination of the precaution adoption process model in understanding older drivers' behaviour: An explanatory study

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ABSTRACT

Self-regulation of driving has been proposed as an effective strategy to keep older adults driving safely for longer. Little is known of what influences older adults' decision to adopt self-regulatory driving behaviours. Hassan et al. (2015) developed an initial model of self-regulation using the Precaution Adoption Process Model (PAPM) as a theoretical framework. The present study aims to build on the previous research by investigating whether a sample of older drivers can accurately be assigned to the PAPM stages of change. Further, the study aims to identify the psychosocial and environmental factors associated with different stages of the PAPM and those that predict the decision to adopt self-regulatory behaviour. Logistic regression analysis indicated that self-rated driving confidence, family feedback, self-rated quality of driving and driving relinquishment expectation were significant predictors of PAPM stages. Findings from this research have practical and theoretical applications for improving our understanding of the self-regulatory behaviours of older drivers.



## 1. Introduction

There has been a growing interest in understanding the risk factors for motor vehicle crashes among older adults, given the ageing population and the predicted increase in the number of older drivers (King, Soole, Watson, & Schramm, 2011). Driving provides people with a sense of independence and freedom which improves their quality of life (Liddle et al., 2014). Stopping driving has been associated with a large number of negative outcomes such as decreased out-of-home activities, increased dependency, and increased depression (Fonda, Wallace, & Herzog, 2001; Marottoli, Carlos, Glass, Williams, et al., 2000). Ageing is often accompanied by declines in the sensory, cognitive and motor abilities considered necessary for safe driving (Anstey, Wood, Lord, & Walker, 2005). If unable to compensate for these changes, older drivers may put themselves and others at risk (Freund, Colgrove, Burke, & McLeod, 2005; Marottoli & Richardson, 1998). In addition, due to their increased fragility, older drivers are overrepresented in serious and fatal crashes (Li, Braver, & Chen, 2003).

Previous studies have shown that some older adults modify their driving (e.g. driving reduction and/or driving restriction) in response to declines in their abilities, a process known as self-regulation (Hassan, King, & Watt, 2015). While often viewed as an effective strategy to maintain older adults' safe mobility, the process of self-regulation is still not completely understood, particularly in terms of the factors that influence older drivers' decision to restrict and/or reduce their driving. The majority of previous research has focused on examining the association between self-regulation and specific impairments

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and medical conditions among older adults (Rudman, Friedland, Chipman, & Sciortino, 2006). However, recent findings that younger drivers also avoid some driving situations (Naumann, Dellinger, & Kresnow, 2011) suggest that driving avoidance can be the result of factors other than declining abilities. In fact, up until now, it is still unclear whether older drivers adopt self-regulatory behaviour to compensate for their age-related declines or whether it is simply a lifestyle choice (Siren & Kjær, 2011). The success of self-regulation in terms of maintaining older drivers' safe mobility depends largely on their awareness of limitations in their driving abilities, rather than their actual abilities (Anstey et al., 2005). Therefore, a strong emphasis has been placed on identifying the impact of self-awareness on self-regulation among older drivers, and recently growing attention has been directed towards understanding the psychosocial factors that affect the self-regulatory driving behaviours. However, the inconsistencies in the way drivers' perceptions are measured and defined, make it difficult to compare the findings (Blanchard & Myers, 2010).

Given the large number of factors influencing older drivers' behaviour, it is essential that research in this area is well grounded, both theoretically and practically. Theories and models of driver behaviour can help us describe, explain, predict and change behaviours through the development of appropriate intervention programs (Crosby & Noar, 2011). The driving cessation process can be conceptualised as occurring in stages (Kostyniuk, Trombley, & Shope, 1998). Interventions for older drivers should therefore be customised, based on the individual (the baseline stage and the personal, social, and environmental circumstances) and the anticipated outcome (increased awareness, enhanced self-monitoring, adoption of self-regulation, or planning cessation), and be sufficiently flexible to move individuals through the stages of change towards adoption of safe driving behaviour (Tuokko et al., 2014). However, there has been little development of stage-based theories applied to driving self-regulation, and hence a lack of research on theoretically-informed interventions that facilitate older drivers' planning for future self-regulation and even driving (Hassan et al., 2015).

Hassan et al. (2015) examined the applicability of the stage-based Precaution Adoption Process Model (PAPM) in understanding older adults' self-regulatory driving behaviour. Building upon the relevant literature and on findings from a series of qualitative focus groups among 27 Australian older drivers, the authors developed a preliminary model of driving self-regulation among older drivers (Fig. 1). It can be seen that Stage 1 of the PAPM (unaware about the issue) has been omitted as previous studies clearly demonstrate that older drivers are generally aware about the impact of medical or functional

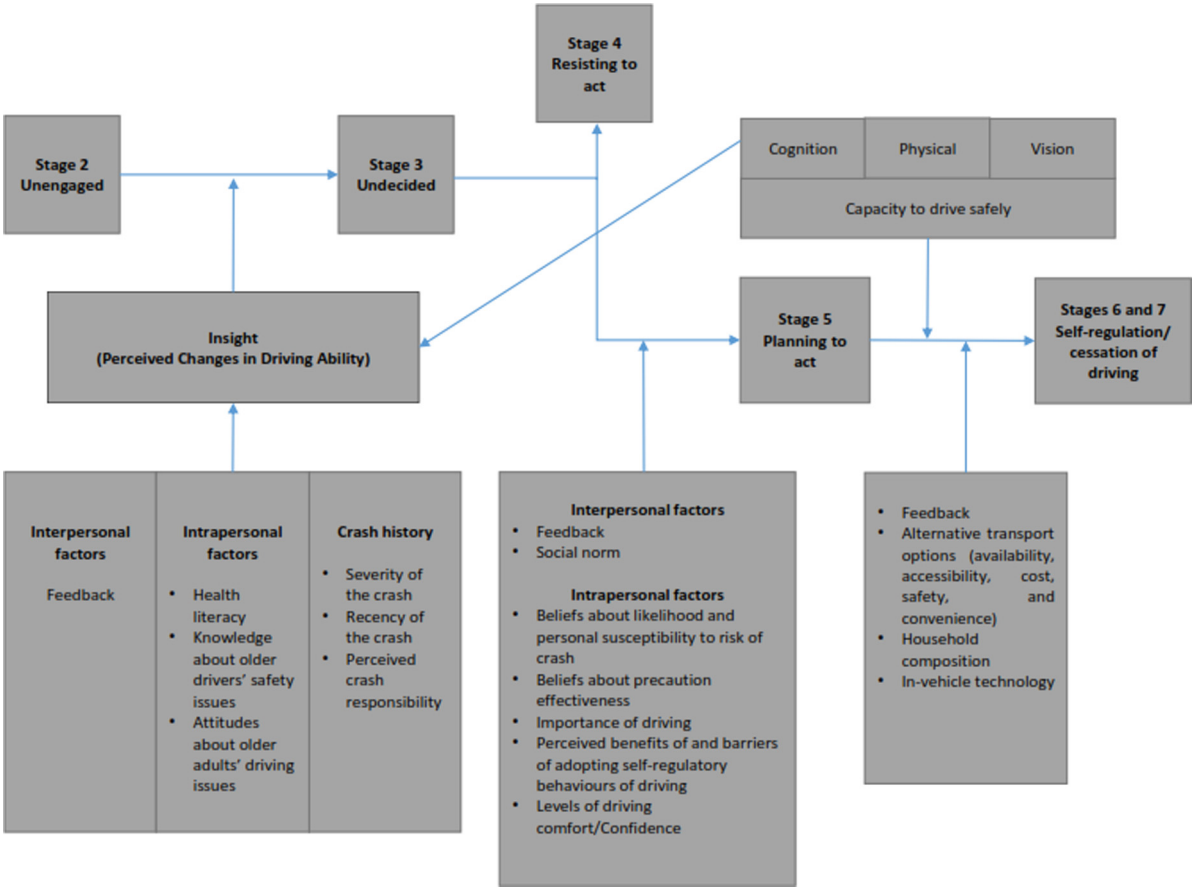


**Fig. 1.** Preliminary theoretical model of stage-based driving change involving feedback and self-regulation (Hassan et al., 2015).