

Behind the wheel: Process evaluation of a safe-transport program for older drivers delivered in a randomised controlled trial

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Abstract

A process evaluation was conducted to explore relationships between program outcomes, and intervention implementation from a trial evaluating the impact of an individualised safe-transport program, 'Behind the Wheel', for older drivers. Relationships were explored using multivariate linear regression and a logic model constructed to explain program inputs, outputs and outcomes. Older drivers who took ownership and planned for retirement from driving were more likely to reduce their driving exposure. A stronger message was delivered to older drivers with lower function and poorer health. Our results suggest 'Behind the Wheel' has greatest impact with older, lower functioning drivers through transport planning.

Background

Evaluation of intervention fidelity and implementation in clinical trials has gained momentum in recent decades (Bellg et al., 2004; Oakley, Strange, Bonell, Allen, & Stephenson, 2006; Saunders, Evans, & Joshi, 2005). The impact of a one-on-one education-based safe-transport program designed to enhance self-regulation of driving among community-living older drivers was recently evaluated in a randomized controlled trial (RCT). While the education program was found to increase engagement in the process of self-regulation and retirement from driving, this did not translate to reduced driving exposure between groups.

Aim

A nested process evaluation exploring relationships between program outcomes and quality of intervention implementation was conducted on 'Behind the wheel', a one-on-one education-based safe-transport program for older drivers. The process evaluation aimed: 1) to evaluate relationships between what was taught (treatment fidelity, timing of intervention and dose delivered), what was learnt (dose received), what was acceptable to participants (program acceptability) and what actually changed (treatment enactment/outcomes) (Bellg et al., 2004), 2) to explore participant characteristics of program uptake and 3) to explain the inputs, outputs and outcomes of our safe-transport program for older drivers.

Methods

We recruited 380 drivers aged 75 years and over from northwest Sydney to participate in a randomized controlled trial evaluating this program. Trial outcomes were stage of behaviour change measured by the Precaution Adoption Process Model and driving exposure measured objectively by in-vehicle monitoring. Process measures including program fidelity, acceptability, dose delivered and received were obtained from participant interview and educator notes. Relationships between process measures and program outcomes were explored using multivariate linear regression. A logic model was built from the data to explain the inputs, outputs and outcomes of this safe-transport program and relationships confirmed using logistic regression.

Results

High program fidelity was achieved, confirming a homogeneous education program was delivered to 96% of participants. Multivariate regression revealed participants who developed a retirement from driving plan on average reduced their total distance driven by 38.1km/week ($p=0.02$, 95%CI:-7.5- -68.7km) and kilometres driven outside of daylight hours by 7km/week ($p<0.001$, 95%CI:-3.5- -10.4km). Both understanding of program content ($\beta=2.1$,95%CI:0.2-4.1) and achieving a safe mobility plan ($\beta=3.3$,95%CI:1.2-5.5) were important to becoming more engaged in the process of self-regulation. Drivers with poorer function (OR=1.2,95%CI:1.04-1.4) and worse health (OR=1.2,95%CI:1.02-1.5) were more likely to develop safe mobility plans, while older (in age) drivers (OR=1.1,95%CI:1.05-1.3) were more likely to develop retirement from driving plans. Female participants were 2.7 times more likely to develop safe mobility plans than men (95%CI:1.1-6.9).

Conclusion: Older drivers who took ownership over the process of driving self-regulation and retirement from driving to the point where they developed plans, were more likely to reduce their driving exposure. A stronger program message was delivered as intended to older drivers with lower function and poorer health. Results from this analysis suggest 'Behind the Wheel' has greatest impact with older, lower functioning drivers through development of a plan for retirement from driving. The logic model presented will assist development of future programs for older drivers, and help channel resources to those who will benefit most.

References

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