

# Awareness intervention in seniors for safe and responsible driving

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## INTRODUCTION

- Driving is an essential component of a senior's autonomy.<sup>1</sup>
- Alterations in sensory, motor, and cognitive functions with ageing can negatively impact the ability to drive safely, increasing the risk of driving incidents.<sup>2</sup>
- In Canada, nearly three-quarters of seniors aged 65+ possess a driving license. Senior driving is becoming a public health problem.
- Awareness interventions can help seniors to realize the decrease in their capacities necessary for driving, and encourage the adoption of compensatory strategies.<sup>3</sup>

## PURPOSE

- This study aims to assess the impact of an awareness tool for safe and responsible driving (OSCAR) <sup>4,5</sup> on seniors' (1) interest, openness, and knowledge of safe driving; (2) awareness of changes in their driving abilities; and (3) use of compensatory strategies.

## METHODS

- Design:** pre-experimental design with pre-test and post-test
- Participants:** 30 experienced drivers aged 60+ with visual acuity (VA) > 6/7.5 and no eye diseases
- Intervention:** pre-test (T<sub>0</sub>) and post-test (T<sub>1</sub>) were separated by an intervention (OSCAR) about safe and responsible driving
  - OSCAR contains a series of questions and related tips linked to aging and driving.<sup>4,5</sup> It was read and commented by a research assistant.
  - A copy of OSCAR was given to all participants to consult at home.
- Measurements instruments:** 3 questionnaires<sup>4</sup> were administered at T<sub>0</sub> and about 8 weeks later (T<sub>1</sub>):
  - Interest, Openness, and Knowledge (IOK)**
  - Changes Occurred in driving Abilities (COA)**
  - Utilization of Compensatory Strategies (UCS)**
- IOK is divided into three sections<sup>4,5</sup>:
  - Interest** in information about driving, and **openness** to discussion about one's own abilities to drive and utilization of compensatory strategies (IntOp) (7 items; range 0-25)
  - Knowledge** about **road safety** information and abilities required for safe driving (KRS) (11 items; range 0-11)
  - Knowledge** about **impact of aging** on abilities required and compensatory strategies (KIA) (15 items; range 0-15)
- Statistical analyses:** Paired *t*-test and effect size (Cohen's *d*) have been calculated with SPSS software.

## CONCLUSIONS

- This study shows that OSCAR can increase knowledge about safe driving and awareness of changes in the driving abilities for seniors as well as enhance use of compensatory strategies.
- OSCAR is a quick and simple test that could be ubiquitous.
- OSCAR could play a role for safety of public road users.



Figure 1. Potential effects of an intervention on safe and responsible driving

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## RESULTS

Table 1. Characteristics of the participants (n=30)

	Mean (S.D.)	Frequency (%)
Age (years)	66.4 (3.5)	19 (63.3)
VA OU (logMar)	-0.14 (0.01) 6/4.5	4 (13.3)
Stereoacuity (sec. of arc)	24.8 (7.1)	8 (26.7)
Driving experience (years)	44.3 (5.1)	18 (60.0)

Table 2. Examples of questions for IOK

IntOp	Have you discussed your health concerns that may affect your driving with a relative, your doctor or another health professional?
KRS	What is the importance of having a good perception of distances to drive?
KIA	What is the impact of aging on glare sensitivity?

Table 3. Scores for the 3 sections of IOK (T<sub>0</sub> and T<sub>1</sub>)

	Mean (S.D.)	t*	p	Cohen's d
IntOp	T <sub>0</sub> 12.3 (3.3)	- 3.58	0.001	0.66
	T <sub>1</sub> 14.5 (3.6)			
KRS	T <sub>0</sub> 8.7 (1.6)	- 5.32	< 0.001	0.99
	T <sub>1</sub> 10.3 (0.9)			
KIA	T <sub>0</sub> 11.3 (3.0)	- 5.41	< 0.001	1.00
	T <sub>1</sub> 13.6 (1.9)			

\*Paired *t*-test

Table 4. Examples of strategies for UCS

USC1	Avoid driving in the dark
USC7	Leave more distance between your car and the one in front
USC14	Reduce distractions while driving (turn off the radio, limit conversations, etc.)

Table 5. Results for UCS at T<sub>1</sub> (n=29)

Number of Strategies	Change of compensatory strategies			
	Yes, I use it since OSCAR n (%)	No, I already used it before n (%)	No, but I intend to use it n (%)	No, and I do not intend to use it n (%)
0	5 (17.2)	0 (0.0)	9 (31.0)	3 (10.34)
1-5	11 (37.9)	4 (13.8)	19 (65.5)	16 (55.2)
6-10	10 (34.5)	17 (58.6)	1 (3.6)	10 (34.5)
≥ 11	3 (10.34)	8 (27.6)	0 (0.0)	0 (0.0)

Table 6. Examples of abilities for COA

COA1	Clearly see far ahead
COA3	Judge the speed and distance from other vehicles
COA10	Brake quickly when something unexpected happens

Table 7. Results for COA at T<sub>1</sub> (n=29)

Number of Abilities	Change in abilities		
	Yes, I observed it because of OSCAR n (%)	Yes, I already knew it and OSCAR confirmed it n (%)	No, no change in this ability n (%)
0	18 (62.1)	5 (17.2)	9 (31.0)
1-3	9 (31.0)	6 (20.7)	3 (10.3)
4-7	1 (3.4)	9 (31.0)	9 (31.0)
8-11	1 (3.4)	9 (31.0)	8 (27.6)