

**Community participation for people with trauma injuries: a crossover randomised controlled trial of the effectiveness of a community mobility group intervention (CarFreeMe TI)**

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**Background:** Following traumatic brain and spinal cord injuries, maximising community participation leads to better physical and mental health outcomes.

**Objective:** To determine the effectiveness and health system resource use of a group intervention (CarFreeMe TI) (<https://carfreeme.com.au>) on community participation in people with complex trauma injuries.

**Method:** A randomised crossover trial recruited from rehabilitation services in Adelaide, Australia. Inclusion criteria: a trauma injury, unable to return to full driving, aged over 18 years of age, adequate cognition/behavioural/communication abilities to participate in sessions, and mobile. Exclusion criterion: living in setting where alternative transport is provided. Participants were randomly assigned on a 1:1 allocation basis, to receiving Phase 1 CarFreeMe TI group-based intervention or Phase 2 information related to transport options. Then crossover to Phase 1 or 2 occurred. The primary outcome measure was community participation using a Global Positioning System (GPS). Secondary outcome measures included: Community Mobility Self-efficacy Scale; CarFreeMe TI Transport Questionnaire, quality of life measures and individual goal performance/satisfaction. The research protocol is published.<sup>1</sup>

**Results:** A total of 57 people were screened for eligibility, 32 were ineligible, of those who were deemed eligible 3 declined and 2 were not contactable. Twenty participants were recruited with a mean age of 53.8 years (SD 13.9 years). Types of injuries included Traumatic Brain Injury - 16, Spinal Cord Injury - 3, and Orthopaedic - 1. Median time since injury was 6.0 years with IQR 1.9-18.8. Two withdrew, one due to a hospital admission and 1 due to non-attendance.

In terms of the primary outcome measure, Global Positioning System device, average data collection was low (mean 8.3% to 17.6%) and thus could not be included in the analysis. For the secondary outcome measures there was a significant increase in the number of times public transport was used ( $p = 0.035$ ) between pre and post intervention. There were no significant differences in the number of episodes away from home, self-efficacy and quality of life measures ( $p > 0.05$ ).

Thirty-four individual goals were set by 16 participants, with significant increases in both performance from 3.9 (SD 3.0) before the intervention to 7.0 (SD 2.1), and satisfaction from 4.9 (SD 2.8) to 7.3 (SD 1.8) (both  $p < 0.001$ ). Four themes were identified: 1. Emotions and attitudes, "To feel less angry about not being able to drive" (Participant 11); 2. Making a change/contributing, "Having a voice to feedback issues associated with transport use" (Participant 9); 3. Transport information and experience, "To feel more confident using buses for longer trips" (Participant 19); and 4. Participation (activities and roles), "Find out about supported work opportunities" (Participant 12).

**Discussion:** In this small trial, after group-based community participation intervention for people with trauma injuries, improvements were demonstrated in the use of public transport (amount/distance) and individualised goal ratings. These findings support the flexible design of the intervention, adapting the group content and offering additional individual sessions where appropriate. Intervention targeting emotional, practical, and advocacy aspects related to community mobility, may maximise the opportunities for broader participation in work, social and educational roles. Larger trials are needed to evaluate the effectiveness of the group-based intervention to maximise community participation, earlier post-injury.

**Trial Registration:** Australian and New Zealand Clinical Trials Register (ANZCTR): ACTRN12616001254482

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1. **George S, Barr C, Nussio A, Crotty M, Milte R, & Liddle J.** A community mobility group intervention (CarFreeMe TI) versus usual care, effects on participation for people with trauma injuries and their families: a randomized crossover trial. *Brain Impairment* 2019;20:96-103.