A co-designed integrated care intervention to promote mobility and healthy living among older adults in equity-deserving communities: Results of a multi-jurisdictional randomized controlled trial

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Trillium PHC Research Day

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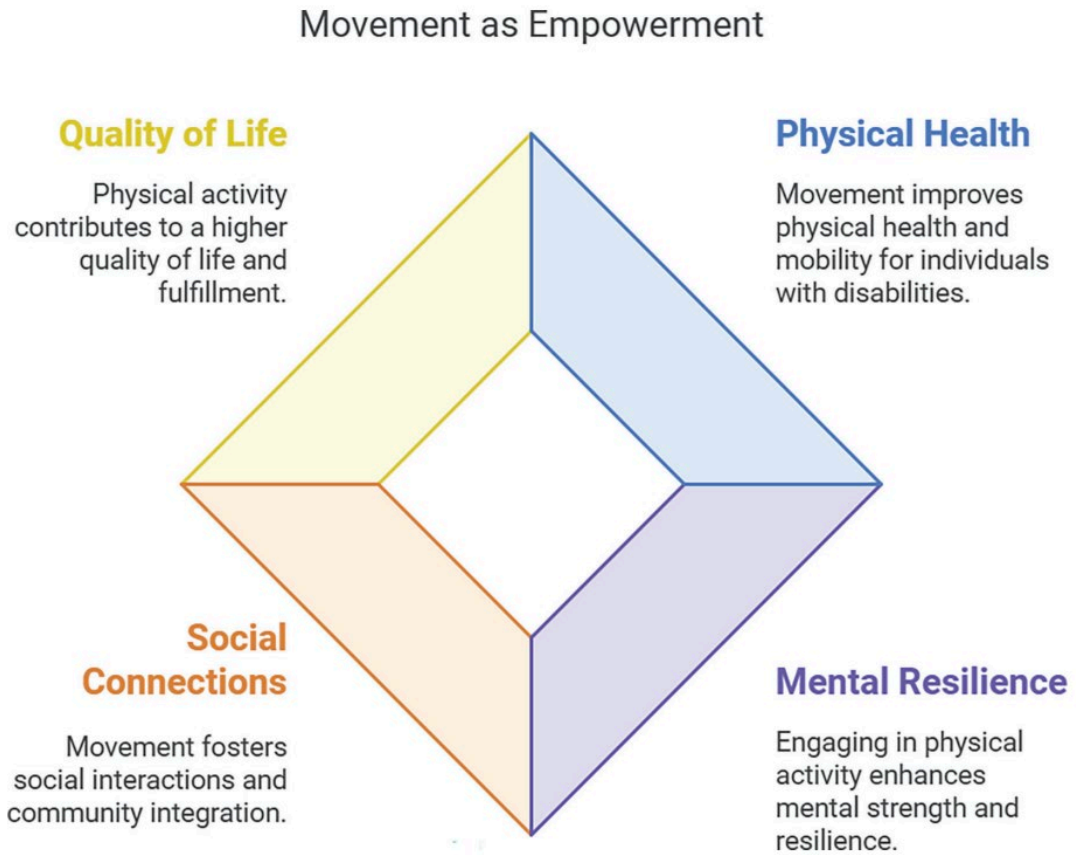




DISCLAIMER

The views represented in this material are those of the research team and do not necessarily reflect the views of the province of Ontario.

WHY FOCUS ON MOBILITY IN AGING?



From Hisham et al. (2025) Perspective chapter: Empowerment through Movement – Enhancing Psychosocial Well-Being in People with Physical Disabilities (Figure 1 Diagram of Movement as Empowerment).

Mobility barriers can lead to:

- Social isolation, poor physical and mental health, poor quality of life
- Increased and costlier care
- Premature death

Social health determinants drive inequities among older adults

Little research has explored effective and tailored programs to address mobility holistically and in the context of health inequities

STUDY OVERVIEW

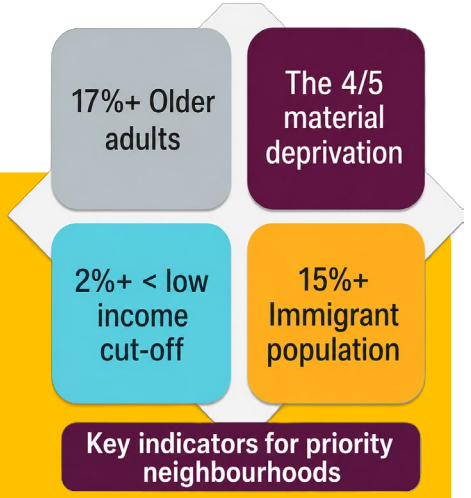
Intervention codesign

- 12 weekly group-based sessions delivered in community through intersectoral team
- Core components: physical activity, healthy eating, social and community connections
- ≤ 3 tailored individual system navigation sessions

Randomized controlled trial

Pragmatic type II hybrid effectiveness-implementation evaluation, to compare effects between intervention and control groups on:

- physical activity, and
- variety of secondary outcomes (e.g., mobility, health-related quality of life, health literacy, resilience, nutrition status)



Strategic Guiding Council of older adult citizens + local health/social service providers

STUDY AIM & PROCEDURES

Enrollment

324 participants enrolled

10 equity-denied neighbourhoods in Hamilton and Toronto

2 languages

At start of program

Data collected at start of program (16 outcomes)

Intervention or Usual Care

161 individuals participated in the EMBOLDEN program (intervention group)

163 individuals continued their usual activities (control group)

At program end

Data collected at program end (16 outcomes)

3 months after program end

Data collected 3 months after program end (16 outcomes)

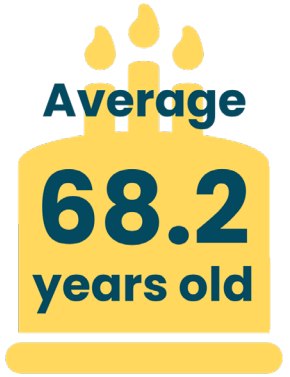
Quantitative outcomes collected using:

- Smartwatches
- Structured interviews



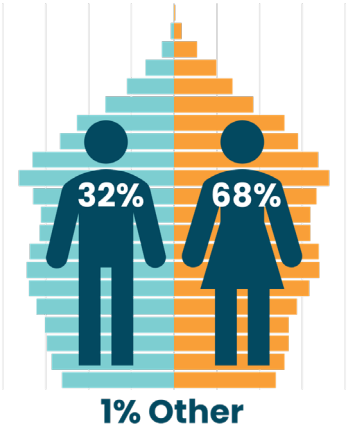
RESULTS

PARTICIPANT CHARACTERISTICS (n=324)

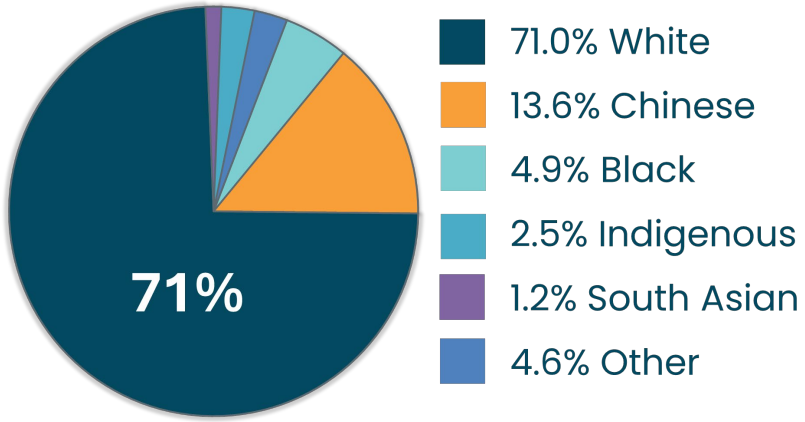


(range 55 – 92 yrs)

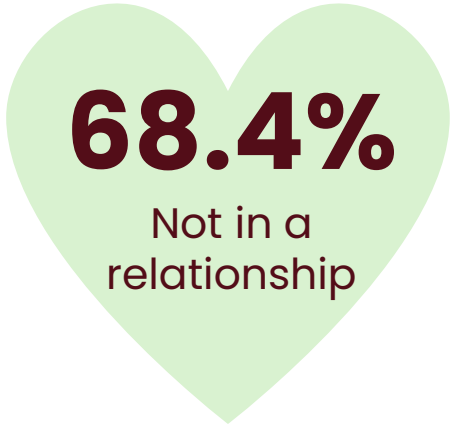
AGE



GENDER



ETHNICITY



RELATIONSHIP STATUS





56.5% Apartment/condo



29.3% House



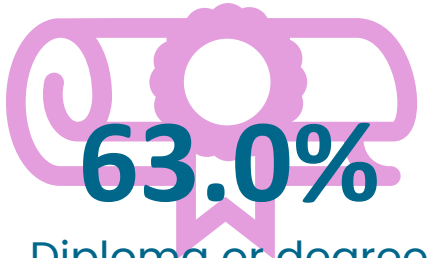
11.1% Subsidized housing

LIVING ARRANGEMENTS & HOUSING TYPE

22.8%
< $20K/year

66.7%
< $50K/year

HOUSEHOLD INCOME



EDUCATION

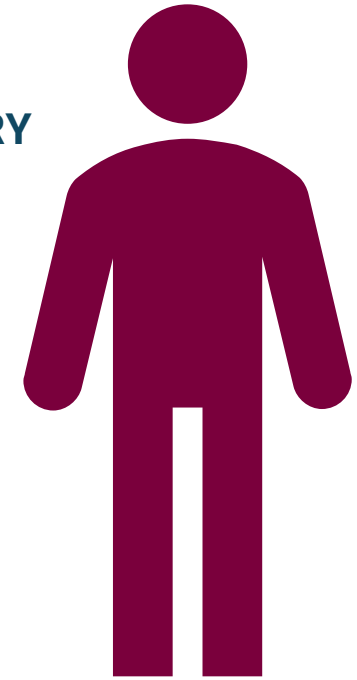
HOW EMBOLDEN PARTICIPANTS RESPONDED VS. CONTROL

*statistically significant differences from Baseline to 6 months (3 months post-intervention)

PHYSICAL ACTIVITY

↑ **Moderate to Vigorous Physical Activity (MVPA)***

↔ **NO DIFFERENCE IN ACCELEROMETRY**



MOBILITY

↑ **Community mobility*** (GPS)

↑ **Global mobility***

(Fewer problems walking about)

NUTRITION

↑ **Food literacy***

Improved skills and abilities needed for healthy food choices

↑ **Food security***

Worry about running out of food

HEALTH AWARENESS & BEHAVIOUR*

↑ **Expectations for exercise**

Increased motivation to exercise

INTERVENTION VS. CONTROL GROUP PARTICIPANTS

SECONDARY OUTCOMES: OTHER ACCELEROMETRY-BASED PHYSICAL ACTIVITY MEASURES

Measures: 1) Step Count (average steps/day)

2) Cadence (average steps/minute)

3) 'ENMO' (average total activity/day) (acceleration movement)

↔ No difference in any of these measures between EMBOLDEN and Control groups

- Baseline values of each measure were strong predictors

↔ Also, explored shorter durations of moderate & vigorous activity (e.g., vigorous intensive lifestyle PA) and changes in lower intensity activity levels (sedentary, light).

- No significant differences using **frag metrics yet trend for all metrics was consistent and favoured the intervention → potentially important behavioural shift due to intervention**

KEY TAKEAWAYS

- Collective impact approach resulted in significant treatment effects in alignment with core program components:
  - mobility, physical activity, nutrition, social connection, health literacy
- Evidence of EMBOLDEN effectiveness among equity-denied neighbourhoods in Hamilton and Toronto

FROM IMPLEMENTATION INTO IMPACT



Successful outcomes, and collective interest in sustaining and scaling the program due to:

- Local program co-design and governance
- Health and social care integration
- Pragmatic, reflective delivery process

PARTICIPANT IMPACT VIDEO

Hear from EMBOLDEN group participants and interventionists about their experience and perceived impacts:

"The EMBOLDEN program meant the world to me because it started me off again. It got me going physically, mentally, emotionally again…"



https://emboldenstudy.mcmaster.ca/embolden-impact-video/

CONSIDERATIONS FOR SUPPORTING IMPLEMENTATION

To bridge the 'know-do' gap, we aim to move EMBOLDEN from a real-world but research-supported environment to sustainable delivery environment

In collaboration with older adult and community partners, this includes:

- Determining the feasibility of embedding EMBOLDEN into practice in trial cities
- Mapping the community partner and service ecosystem
- Identifying backbone and delivery organization(s) to deliver integrated model within NORCs
- Developing older adult- and community-led, asset-based implementation plans

Support needed:
- **Pooled funding** to support intersectoral collaboration
- **Time** to build and maintain relationships and to respect partners' capacity
- **Resources** to support co-build ($ for older adult and partners' expertise and time)
- **Support** for evaluation and research activities as part of implementation

Anticipated impacts:
- Sustainable implementation and value for money
- Building trust in public, including research, institutions
- Minimizing research waste
- Enhancing healthspan and quality of life



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