

The Band-Frail Study

Summary

- Type 2 diabetes mellitus (T2DM) is highly prevalent among older adults aged 65+ in New Brunswick. Older adults living with both T2DM and frailty experience an accelerated decline in their physical functioning. Consequently, this can lead to reduced independence and increased healthcare costs.
- To increase physical function in older adults with T2DM and frailty, the pilot project introduced a 16-week elastic band resistance training and diabetes education program.
 - The program was delivered twice a week under the supervision of an exercise specialist and a Certified Diabetes Educator.
 - The first session consisted of both diabetes management education and resistance training, while the second session involved only resistance training using resistance bands.
- The main goal of the project was to assess the impact of elastic band resistance training and diabetes education on physical function (balance, walking speed, and sit-to-stand test) and HbA1c (average blood sugar level) of individuals living with both T2DM and frailty.
- 203 older adults, including 115 women and 88 men participated in the project.

HSPF Focus Area	Increasing Independence, Quality of Life, and Promoting Healthy Lifestyles
Project Start & End Date	January 6, 2020 – March 31, 2024
Organization/Agency	University of New Brunswick
Location	Various locations across New Brunswick (14 sites)
Principal Investigator(s)	Dr. Martin Sénéchal and Dr. Danielle Bouchard

Indicator	Impact / Outcome / Result
Improved physical function	<ul style="list-style-type: none"> • After 16-weeks of the intervention, the results from the Short Physical Performance Battery test revealed significant improvements in physical function. <ul style="list-style-type: none"> ◦ 73% participants improved physical function above the MCID (minimal clinically important difference¹) of 1 point on the test.
Improved HbA1c	<ul style="list-style-type: none"> • A statistically significant decrease in HbA1c levels was observed in participants following the 16-week intervention. <ul style="list-style-type: none"> ◦ HbA1c score decreased from 7.6% to 7.2% with 43% of participants achieving a reduction of 0.3% or more, the minimum required to observe a clinical impact.
Improved frailty status	<ul style="list-style-type: none"> • After 16-weeks of the intervention, a statistically significant decrease in frailty score (pre: 1.9 ± 0.9 to post: 1.4 ± 1.0) was reported.

Methods and Comparison

Older adults participated in pre and post testing which included frailty questionnaires, physical function tests, and blood draws to determine HbA1c levels.

Conclusions and Lessons Learned

- Overall, the 16-week elastic band resistance training and diabetes education program significantly improved physical function and HbA1c in older adults.
- Findings also highlighted significant improvements in frailty status among older adults.

¹ Minimal clinically important difference (MCID) refers to the smallest change in outcome that patients perceive as clinically meaningful.

Recommendations

- Build strong relationships with the community to increase enrollment.

Next Steps

The project has not yet secured funding for scale-up and sustainability. The project is exploring various funding opportunities for potential scale-up.

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