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The implementation of remotely supervised home-based intensive exercise interventions to improve balance, mobility and physical activity for military who suffered a moderate or severe traumatic brain injury.

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Lived experience from veterans and their family partners

1) The use of telerehabilitation with veterans after being discharged from the military with chronic deficits is feasible. Our research demonstrated high adherence and high satisfaction with the program. Veterans enjoyed being in the comfort of their homes while receiving support from a qualified rehabilitation professional who had significant experience with brain injury.

To share how this program enhanced the health and wellbeing of military and veteran members, we wanted to share the experiences and perspectives voiced from the veterans and family partners who participated in this project. The following quotes illustrate the positive experiences voiced by the veterans and the veteran’s family partner during this program:

“It was really nice to have someone else to keep him accountable. That is the part I really enjoyed, and it is nice for him to be active every single day.”

“One of my challenges is fatigue and I like that I don’t have to leave the house.”

“The only thing that I can think of is sometimes wifi can be a little laggy.”

2) Exercise programs delivered via telerehabilitation can effectively improve balance, and mobility as well as impact concerns with falling and physical activity levels for this population. Veterans who participated in our study were physically active at the beginning of the program, averaging 12000 Steps per day. Therefore, the telerehabilitation exercise program did not increase their level of physical activity. However, we reported clinically important improvements in dynamic balance for both and in functional mobility.

When asked to share their experiences with the program, the veteran’s family partners reported positive benefits related mental health and self-awareness:

“I am grateful that it has kept him moving. I definitely think it has helped with his depression as well.”

“She is definitely doing better. She used to nap several times a day. Right and now she is able to get up and do things and it is definitely helping her get back on her way and get moving again.”



3) Establishing a supportive interpersonal relationship between the veteran and the physiotherapist is critical to promote autonomy and therapeutic engagement. Explorative findings from our study showed that the way a therapist uses supportive behaviours in a telerehabilitation environment will vary within veterans. Differences were reported with greater support from the therapist perceived by the female veteran than the male veteran. This supports existing literature on the topic of delivery of care and the use of technology to reach and support women veterans from a women's perspective (Brooks, Dailey, Bair, & Shore, 2016). Time might also be required to establish a supportive relationship leading to self-motivation.

"My worry was um just having to engage someone, outside of my bubble, eventually I got over it and it was good." (male veteran)

"So I found it um very enjoyable because it was motivating and I like to challenge myself and I looked at my numbers and I always wanted to do better. That way was very very motivating." (female veteran)

Impact, recommendations, and future directions

Future clinical interventions, health promotion programs and research should consider developing veteran specific-needs and protocols. We have recommended a few important points based on our exploratory study:

- A. We recommend offering telerehabilitation as an alternative method of delivery for rehabilitation care for veterans when trying to reach those in remote and rural areas, or with veteran's who have specific needs such as those resulting from a traumatic brain injury.
- B. Our veteran participants demonstrated that a high level of physical activity at baseline does not directly translated to excellent dynamic balance. When developing exercise programs, it is important to specifically include tasks targeting dynamic balance for this population even when the veteran is highly physically active.
- C. Including behaviour change strategies based on the self-determination theory such as goal planning, education, listening and feedback could influence the overall well-being and autonomous motivation of veterans.
- D. Findings from this telerehabilitation program could guide the implementation of remote monitoring and delivery of programs using telehealth within existing CAF and/or VAC programs. A few examples could be:
 1. Including telemonitoring and teleconsultation delivery in the [CAF Balance Strategy](#).



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2. Continue to advocate for the inclusion of research and facilitate communication with VAC to improve recruitment process of veterans for studies targeting veterans. These studies will provide the evidence to support evidence-informed decision making by VAC.

We thank CIMVHR and True Patriot Love for financially supporting this research project. We hope our findings can inform and provided solutions to increase access to health services for veterans and family members of veterans.