

Transitioning Towards a Virtual Falls Prevention Program for Frail Seniors: Learning from the Experiences of Older Adults During the COVID-19 Pandemic*



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ABSTRACT

Background

The literature to date is unable to clearly characterize the appropriateness of virtual care for falls prevention services from the patient perspective. In response to COVID-19, the Falls Prevention Program (FPP) at Sunnybrook Health Sciences Centre was modified to include virtual components. We set out to uncover the experiences of this unique older-adult patient population to inform FPP quality improvement and appropriate incorporation of technology post-pandemic.

Methods

FPP patients during the COVID-19 pandemic (February 2020 – February 2022) and their primary caregivers met inclusion criteria. Out of 18 eligible patients, 10 consented to participate in 20-minute, semi-structured telephone interviews conducted and transcribed by the first author. Inductive coding followed by theme generation occurred through collaborative analysis.

Results

The participants (n=10) were 60% female, mean age 84 years (SD 5.8), 60% living alone, and 70% university educated. We generated three main themes: 1) First Steps First, revealed a common desire for physical and mental support and the perceived essentials of a successful FPP highlighting the importance of program length and individualized attention; 2) Overcoming Obstacles, highlighted participants' experiences overcoming barriers with technology in the context of an isolating pandemic; and 3) Advancing Care Post-Pandemic,

elaborated on the appropriateness of virtual care and delved into the importance of program personalization.

Conclusion

The interviewed older adults revealed agreement on the FPP's necessity and the importance of increasing program length, one-on-one interaction, and program flexibility for unique patient needs. Incorporating virtual assessment prior to in-person exercises was largely favoured and should be considered as an appropriate use of technology post-pandemic.

Key words: falls, preventative care, preventative programs, falls prevention program, virtual care, COVID-19 pandemic, geriatric assessment

INTRODUCTION

A fall for a community-dwelling older adult has the potential to be a devastating and life-altering event. Falls increase the risk of sustained morbidity, reduced independence, and are associated with premature death.⁽¹⁻³⁾ Falls prevention programs (FPPs) are designed to build strength and balance among community-dwelling older adults to help prevent falls and maintain independence.^(4,5) Evidence supports the success of these programs and has led to worldwide encouragement to prioritize the implementation of FPPs into primary health-care settings.^(1,2)

COVID-19 interfered with many critical outpatient services, including FPPs, while simultaneously increasing the need for these supportive programs by disproportionately impacting geriatric patient populations. Canadians aged 65

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and older accounted for 80% of the COVID-19 related deaths during the first 15 months of the pandemic.⁽⁶⁾ Many seniors hesitated to seek medical help, leading to delayed access to primary care and in-person services.⁽⁶⁻⁸⁾ During this period of heightened senior needs, services had to adapt to changing public health restrictions.⁽³⁾

The introduction of virtual care into the health-care setting has been widely encouraged and, in many applications, sustained post-pandemic.⁽⁹⁻¹²⁾ Existing quantitative literature reveals reduced rates of falls in high-risk community-dwelling older adults with the integration of combined telehealth and in-person exercise classes.^(2,13) The literature also recognizes the importance of a thorough falls-risk assessment prior to program initiation;⁽²⁾ however, it is not well understood how effective these assessments are when conducted virtually. An article written by a division of the U.S. Centers for Medicare and Medicaid Services, for example, reported increased need for virtual geriatric assessments with limited understanding of effectiveness.⁽¹⁴⁾ While the literature does not capture the effectiveness of a virtual falls-risk assessment in its entirety, various components have been examined; Watt *et al.* found a moderate-to-high correlation between video calls and in-person Mini-Mental State Examination and Montreal Cognitive Assessment scores.⁽¹⁵⁾ Furthermore, a randomized controlled trial conducted by Ogawa *et al.* focused on virtual physical performance assessments in veterans during COVID-19 and found high reliability and generalizability.⁽¹⁶⁾ The effectiveness of virtual falls risk assessments remains uncertain in the literature.

During the pandemic, virtual care was utilized by Sunnybrook Hospital's FPP in Toronto.⁽⁷⁾ A previously

in-person FPP was adapted to include initial telephone screening to inform if assessments for FPP eligibility could occur virtually based on: 1) the patient's access to devices such as a laptop or tablet; 2) familiarity navigating Zoom; and 3) any available family or friends to help set up the required technology. Factors such as cognitive impairment and patient preference were also considered. Following the initial telephone screening, geriatricians and physiotherapists conducted a falls risk assessment (virtually, using Zoom or in-person) to determine eligibility for the FPP. The patients then participated in the FPP including exercise classes and falls prevention education (virtually using Zoom, or through a hybrid model with some in-person components, depending on public-health restrictions at the time of attendance). These modifications are outlined in Figure 1. Throughout the pandemic, the program was modified to best fit continuously changing public health restrictions and staffing shortages, guided by the expertise of the health-care workers involved. The program's duration was refined from eight to four weeks, featuring a blend of in-person and/or virtual sessions conducted over Zoom. The latter included comprehensive education on falls prevention, nutritional insights, and exercise sessions facilitated by allied health experts. Group sizes were also reduced with the intention to maintain safety for participants both in-person and virtually to allow for physical distancing and ample support with technology, respectively.

Part one of this study was a quantitative data abstraction that characterized the patient population seeking the FPP at Sunnybrook before versus during the pandemic to explore accessibility and inform quality improvement.⁽¹⁷⁾ We found that the population was similarly frail and their ability to

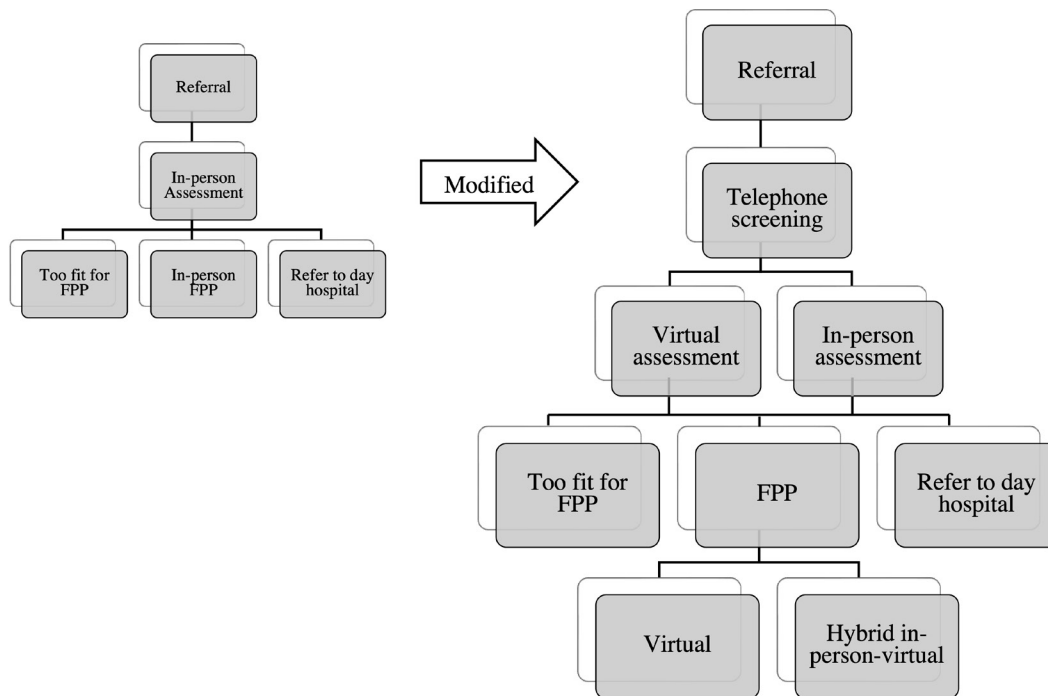


FIGURE 1. Modifications of Sunnybrook Health Sciences Centre's Falls Prevention Program due to COVID-19

access virtual services was maintained, suggesting that virtual care successfully provided falls prevention when in-person access was unsafe.⁽¹⁷⁾ A qualitative study by Kohn *et al.* explored the adaptations to four falls prevention programs during the pandemic from the perspective of program administrator representatives.⁽³⁾ They found improved accessibility for some populations (in contrast to limited access for underserved communities), as well as increased cost with sustained feasibility.⁽³⁾ Yet, we know little about the appropriateness of virtual care for falls prevention from older patients' perspectives. Our qualitative investigation aims to fill this gap by uncovering the experiences of this unique older-adult patient population, providing insights for FPP quality improvement and the post-pandemic incorporation of virtual care.

METHODS

Study Design and Approval

A prospective single-centre descriptive qualitative study was conducted to provide a summary of participants' responses with the goal to inform quality improvement.⁽¹⁸⁾ Reporting adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ).⁽¹⁹⁾ The Research Ethics Board approved this study (Project ID: 5190).

Participant Eligibility and Recruitment

Our study focused on community-dwelling older adults enrolled in the Sunnybrook FPP during the COVID-19 pandemic (February 2020–February 2022). Purposive sampling was used. To be eligible, patients had to be 65 or older, at risk of falling, and capable of walking at least 25 metres and safely participating in supervised exercise. Patients attending any program format during this period (virtual, in-person, or hybrid) were included. To recruit participants, we contacted eligible patients (n=18) through a mailed letter with an opt-out option, followed by phone calls. One eligible patient declined due to difficulty hearing, one declined due to hospitalization,

and six declined participation without a reported reason. A total of 10 individuals consented to participate. The participant recruitment process is outlined in Figure 2.

Data Collection and Analysis

Out of 18 eligible patients, 10 were interviewed with the option for family members or caregivers to join the interviews (this occurred in 2/10 interviews). Interviews were conducted by phone in April 2022 by the first author (SW), a medical student with no prior relationship with the participants, in collaboration with Sunnybrook FPP geriatricians. The 10 semi-structured interviews aimed to explore participants' FPP experiences, including feasibility, accessibility, and effectiveness, along with demographic information (see Appendix A). Interviews lasted on average 10–20 minutes; this length of time over the phone was determined to be a reasonable commitment for participants and would yield the highest level of participation while still allowing for flexibility if some participants wished to dedicate more or less time to discussion. Interviews were recorded and transcribed by SW. Relying on inductive analysis, SW and the corresponding author (MN) generated a codebook and coded the first three transcripts using NVivo (QSR International, Melbourne, Australia). SW analyzed the remaining seven interviews, adapting the codebook as needed based on emerging themes, which were finalized through collaborative analysis.

RESULTS

Study participants (n=10) were 60% female, had a mean age of 84 years (SD=5.8), primarily lived alone (60%), and were university educated (70%) (see Table 1A). With respect to living arrangements, 40% of participants reported living in an apartment/condominium, 30% in a house, and 20% in an independent living complex for seniors. Past employment included various positions in business, teaching, and banking. The participants experienced various forms of the program as it continuously evolved during the pandemic.

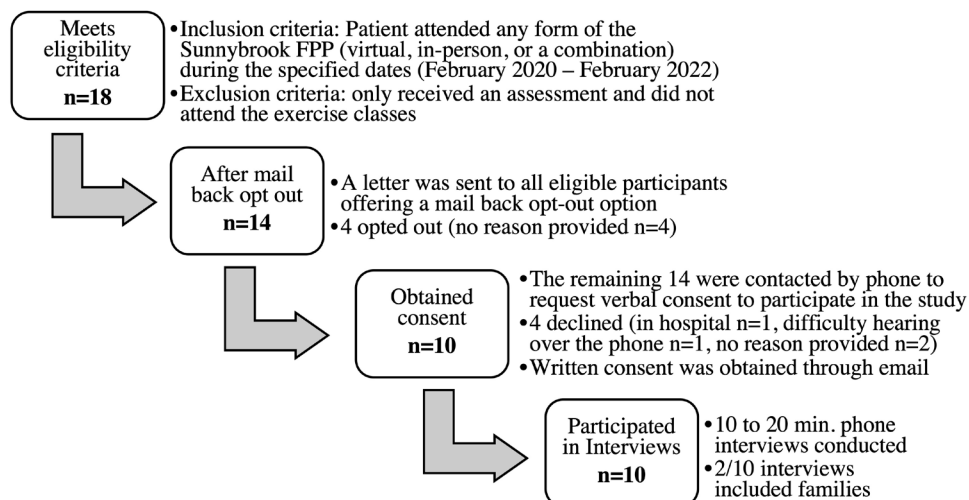


FIGURE 2. Outline of the participant recruitment process

WEISS: OLDER ADULT EXPERIENCES WITH A VIRTUAL FALLS PROGRAM

All 10 participants received the initial assessment virtually by phone (conducted by the medical receptionist), followed by Zoom with both a geriatrician and physiotherapist. The exercise portion of the program was delivered in-person to 3/10 participants, virtually to 3/10, and a hybrid including both in-person and virtual session for the remaining 4/10 participants (Table 1B).

Our analysis generated three major themes. Theme 1, First Steps First, revealed a common desire for physical and

mental support and the perceived essentials of a successful FPP, highlighting the importance of program length and individualized attention. Theme 2, Overcoming Obstacles, highlighted participants’ experiences overcoming barriers with technology in the context of an isolating pandemic. Theme 3, Advancing Care Post-Pandemic, elaborated on the appropriateness of virtual care and delved into the importance of program personalization. A list of supporting quotations is provided in Table 2.

TABLE 1A.
Raw and summarized data characterizing the study sample: Demographics

<i>Participant Number</i>	<i>Reported Gender</i>	<i>Age</i>	<i>Education</i>	<i>Living Arrangements</i>	<i>Alone or With Family</i>	<i>Past Employment</i>
1	Male	89	University	Independent living at seniors home	Alone with supports	Accountant
2	Female	93	Highschool	Apartment	Alone	Teacher
3	Female	88	Highschool	Apartment	Alone	Public relations
4	Male	86	University	Apartment	Alone	Business manager
5	Female	87	University	House	Alone	Social worker
6	Male	78	University	Condominium	Family	Business owner
7	Female	77	University	House	Family	Teacher
8	Female	83	Highschool	Independent living at seniors home	Alone with supports	Executive assistant
9	Male	87	University	House	Family	Banker
10	Female	74	University	House	Family	Teacher
Summary values	60% female 40% male	Mean: 84 years SD: 5.8	70% university 30% high school	40% house 40% apartment/condominium 20% independent living at seniors home	40% alone 40% alone + supports 30% family	NA

TABLE 1B.
Raw and summarized data characterizing the study sample: Program breakdown

<i>Participant Number</i>	<i>Assessment</i>	<i>Exercise Program</i>
1	Virtual	Hybrid Virtual and In-person
2	Virtual	Virtual
3	Virtual	In-person
4	Virtual	In-person
5	Virtual	In-person
6	Virtual	Virtual
7	Virtual	Hybrid Virtual and In-person
8	Virtual	Hybrid Virtual and In-person
9	Virtual	Virtual
10	Virtual	Hybrid Virtual and In-person
Summary values	100 % Virtual Assessments	30% In-person Exercise program 30% Virtual Exercise program 40% Hybrid Virtual and In-person Exercise program

TABLE 2 (part 1 of 2).
Themes and subthemes with a sample of supporting quotes

<i>Theme</i>	<i>Subthemes</i>	<i>Quotes</i>
First Steps First	Seeking Support	<p>Participant 1: "I use a walker now and I can go a short distance, very slowly on a good solid through floor. [...] So yeah my health problems make it easy to fall."</p> <p>Participant 3: "I enjoyed that the sessions gave me a reason to get up and socialize. You know. Talking and chatting."</p> <p>Participant 4: "[I joined] because I had a fall [...] and that was one of the ways the doctor wanted to help make sure I didn't fall again."</p> <p>Participant 5: "It is not something I would normally choose to do but I realized the importance of it. I had had four falls before I broke my hip. So, I was pleased to get into a program that addressed balance."</p> <p>Participant 8: "I enjoy being able to get out for a little bit and dealing with another person or socialization I guess. Where I am at the moment is under a partial lockdown. And it's been very, very difficult on everyone. Again, I'm a people person and not having contact with other people has been very difficult."</p> <p>Participant 9's wife: "[He joined] because he's a little unsteady on his feet and always a little lightheaded. So [the doctor] thought it would be good [for him]."</p> <p>Participant 10: "Well, I've had three falls over a space of a couple of years, but I felt if I was stronger, I would have been able to pull myself back [and not fall]. I didn't have any core strength. And it was recommended by my occupational therapist."</p>
	More Time and Attention	<p>Participant 2: "I didn't realize that that was the end of the line, if you know what I mean. I thought it was an ongoing program. I don't know what I felt, but I guess I was disappointed it was over and wanted it to be more than only five sessions. It seemed to fly by so fast."</p> <p>Participant 4: "I liked that the in-person program was more on a one-to-one basis and felt personable and safe. The session with other people there didn't feel the same. I liked the one-on-one special treatment. That's my own personal feelings."</p> <p>Participant 7: "I do some of [the exercises now] but not all, and not regularly. Unfortunately. And maybe if [I] participated in the regular program it may have been more incentive to keep going whereas this was just sort of showing us what to do but then all of a sudden it was over. [the sessions] were very good, but I think it would have been much richer, much more helpful and establish routines to understand and remember and get yourself into the groove if it had been the regular program instead of the abbreviated program [...] Now, the downside was that there weren't as many sessions, but the upside was that it was just one or two of us with one physiotherapist and so you did get a lot of individual attention."</p> <p>Participant 8: "I think it went well. I liked the one-to-one experience. One is always better than three or four to one."</p>
Overcoming Obstacles	A Restrictive Pandemic	<p>Participant 4: "I don't like the masks. I find it difficult to breath. For me I just don't have that freedom. That's me. But I still wear my mask all the time."</p> <p>Participant 8: "Going by myself was pretty much mandatory the past couple of years with COVID [...] it was okay. I could manage. The drivers in the cabs are helpful."</p> <p>Participant 9: "I can see people's faces on Zoom. And it's okay. And also timely. I cannot spend time on a commute. To go [to] the hospital and back. [...] Also, because of the pandemic, I don't like to meet other people in person."</p> <p>Participant 10: "I did [worry about in-person] at first. And then I figured, I'm protecting myself. I've got my shots and I've got my masks. So I should be okay. And I was! And they were so very careful in the hospital with hygiene and stuff so I didn't feel unsafe at any point."</p>
	Challenges with Technology	<p>Participant 2: "I do use emails and that sort of thing, but I am not really comfortable with it. [...] I do not like the confusing technology."</p> <p>Participant 2: "[My daughter could] not really [help me]. She's out there. She's doing her own thing. I have a son as well. He's good with technology. But they don't live with me. They're in the city."</p> <p>Participant 4: "Well I had trouble with the online bit. I got quite frustrated trying to line it up."</p> <p>Participant 5: "No, I had no difficulty with Zoom. I knew what I was doing with Zoom. I have a group cooking class on Zoom I like to attend and think it is very important for many things."</p> <p>Participant 6's daughter: "It was difficult because we had to make arrangements for my dad to go by himself. It was a bit difficult. It would be nice if another person would be able to go with him."</p>

TABLE 2 (part 2 of 2).
Themes and subthemes with a sample of supporting quotes

<i>Theme</i>	<i>Subthemes</i>	<i>Quotes</i>
	Challenges with Technology	<p>Participant 8: “I asked a couple of times about somebody going with me, and no that wasn’t an option at the time. I didn’t push it because I felt that I could do it on my own. I didn’t like it, but I could do it on my own.”</p> <p>Participant 9: “I find [accessing the virtual program] easy, but I don’t know sometimes I need my wife [close]by. Sometimes I have no voice, or the image is not clear, and I have to call my wife to come fix it.”</p> <p>Participant 10: “I was very nervous [for virtual care] at first because I was worried that I wouldn’t join on time or [of] course I always forget either to put the video on or the sound, so the doctor has to remind me, but it isn’t that bad, and I was fine with it once I got used to it.”</p>
Advancing Care Post-Pandemic	Virtual Care as a Tool	<p>Participant 1: “I haven’t had any problems as a result of talking to the doctor by phone. I think it generally has been pretty positive.”</p> <p>Participant 1: “I have talked to doctors on the phone, [but] I would always prefer to be in person if I could.”</p> <p>Participant 2: “Yes, I do prefer in-person, definitely. Something about it [...] would have been nice to be in person I must say.”</p> <p>Participant 4: “I do use Zoom for other things, and I think I would have no problem attending over Zoom, however, I find it is impersonal. You know, I don’t enjoy it. It is not like the real thing.”</p> <p>Participant 5: “I knew what I was doing with Zoom [but] this is just not the best place for Zoom because in person feedback is important. It was just difficult to show someone’s problems I was having in terms of balance and physio related stuff.</p> <p>Participant 10: “[in-person] the physiotherapist could see more what I was doing and help me if I was doing something incorrectly which made me feel safe and like our time together was helpful. [...] she pointed out] different things about the way my feet move because she could see, which was only possible in-person. So overall I think in-person is better rather than if on Zoom.”</p> <p>Participant 10: “I just felt [in-person] it was more personal, and the physiotherapist could see more what I was doing and help me if I was doing something incorrectly which made me feel safe and like our time together was helpful.”</p>
	A Patient-Centred Approach	<p>Participant 2: “They gave me a pamphlet and material in the mail, you know, telling me what to do. They didn’t tell me one thing which somebody told me at Women’s College which is that I should try and stand on one leg for, you know, 15 or 20 seconds or whatever. Those sorts of things they didn’t mention that. I feel like they could have taught me even more exercises.”</p> <p>Participant 3: “Everybody was very nice. It was nice to get out, have a chat, have a laugh. And [the staff] seemed to enjoy talking to me. [...] I liked that they got to know me for who I am. the [staff] were very nice, very helpful, and accommodating.”</p> <p>Participant 5: “While the [physiotherapist] did all the regular sorts of things, teaching me the exercises, going over them, and watching me while I did them. The occupational therapy was something I really felt I didn’t need. It was pleasant talking to someone [...] but] it wasn’t valuable for me, particularly other than it was kind of an outing and somebody to talk [to...] perhaps when people get into the program, you might want to say, do you want to be in the occupational [therapy] part? [...] it was sort of fun for me you know because when you’re isolated this time was very meaningful. But if I hadn’t been isolated, I might have thought, oh for goodness sakes do I need this?”</p> <p>Participant 5: “I had been having trouble [because] I had had a fall and had a hip replacement [...] And the physio was very good with that. And she also phoned a colleague and discussed it with her [...] she] took it upon herself to get some more information for me, so she was very pleasant, and it was the same physio [that] I had [a] previous time. So, she recognized me and sort of knew where I was coming from.”</p> <p>Participant 6’s daughter: “We would have liked my mom to go with him in the program [...] because then we would be able to see what they’re doing or you know, assist him [...]and] my mom could have been there to sort of help him and learn it with him. [...] That’s the only thing for us. I don’t know for other patients. For us, that would have been helpful. [...] I will say I hope he gets referred to the program again and hopefully with my mom.”</p> <p>Participant 9: “I have some frustration. I cannot express my opinion always because it is an English program but otherwise, I have no problems.</p> <p>Participant 10: “I felt very confident not only with the exercises but with what I was learning on the Zoom meetings. It gave me more confidence, because part of the stuff that I was doing was right, and having professionals reassure me made a huge difference.”</p>

First Steps First

Seeking Support

Participants were motivated to join the FPP primarily to improve both their physical and mental health. Many approached it with optimism, recognizing its importance for their well-being. Their initial drive often stemmed from previous falls or a heightened risk due to frailty and comorbidities. One of our participants highlighted the program's significance after experiencing multiple falls:

“It is not something I would normally choose to do but I realized the importance of it. I had had four falls before I broke my hip. So, I was pleased to get into a program that addressed balance.” – participant 5

Family members and health-care professionals also played a role, encouraging participation in exercise programs. Beyond physical health, socialization and support for mental well-being were vital, especially during the isolating effects of the pandemic. Several participants emphasized the importance of socializing within the program. Those attending in-person found relief from pandemic isolation, while virtual attendees acknowledged that online interactions could not replicate in-person ones. Many preferred in-person programs for the human connection they offered, although some appreciated the virtual component's ability to provide socialization during lockdowns. Participant 8 shared:

“I enjoy being able to get out for a little bit and dealing with another person or socialization I guess. Where I am at the moment is under a partial lockdown. And it's been very, very difficult on everyone.” – participant 8

More Time and Attention

The pandemic led to the implementation of multiple changes to the FPP, including reducing the number of sessions from eight to four, as well as reducing class sizes to accommodate the evolving pandemic public health restrictions. The interviews revealed a desire for a longer program and for smaller class sizes to be foundational elements of a successful FPP. The FPP aims to educate and help incorporate falls prevention into routine by equipping seniors with daily exercises to continue once the program is complete. The participants who had four sessions revealed that this post-program expectation was difficult to achieve without a longer and more involved program to solidify technique and motivation. Many emphasized that the program was cut too short and that a longer course of care was necessary to achieve long-lasting effects. More individualized attention was also highlighted as essential for both engagement during the sessions and retention of skills necessary to continue exercises independently post-program. The reduction in class size was revealed to carry the beneficial consequence of increased individualized attention which participants speculated was to their advantage and was generally appreciated. A participant summarized:

“I do some of [the exercises now] but not all, and not regularly. Unfortunately. And maybe if [I] participated

in the regular program it may have been more incentive to keep going whereas this was just sort of showing us what to do but then all of a sudden it was over [...] Now, the downside was that there weren't as many sessions, but the upside was that it was just one or two of us with one physiotherapist and so you did get a lot of individual attention” – participant 7

Overcoming Obstacles

A Restrictive Pandemic

Participants recognized that virtual care was providing them with the safety of isolation, reducing the risks associated with a hospital environment for a frail older adult during a pandemic. Alternative perspectives stated that with the appropriate personal protective equipment and vaccinations, attending in-person felt safe and virtual attendance for the purposes of safety was unnecessary. These feelings of safety may also depend on when each participant attended during the evolving pandemic and what levels of in-person protection were available at the time. Two of our study participants show these contrasting views:

“I can see people's faces on Zoom. And it's okay. And also timely. I cannot spend time on a commute. To go [to] the hospital and back. [...] Also,] because of the pandemic, I don't like to meet other people in person.” – participant 9

“I did [worry about in-person] at first. And then I figured, I'm protecting myself. I've got my shots and I've got my masks. So I should be okay. And I was! And they were so very careful in the hospital with hygiene and stuff so I didn't feel unsafe at any point.” – participant 10

Challenges with Technology

Each participant had varied levels of technology incorporated into their FPP experience based on the level of public health restrictions in place at the time of their attendance. A common barrier associated with virtual program components was a general lack of comfort using the required technology. Some participants elaborated on their adaptation to a virtual environment commenting on how family/community support, as well as prior knowledge on how to navigate technology, eased this transition. For those participating virtually, including the initial FPP assessment and/or the exercise classes, it was found that with time and practice navigating the online FPP, seniors were gaining e-literacy skills in addition to falls prevention skills. A participant explained:

“I was very nervous [for virtual care] at first because I was worried that I wouldn't join on time or [of] course I always forget either to put the video on or the sound, so the doctor has to remind me, but it isn't that bad, and I was fine with it once I got used to it.” – participant 10

The pandemic was associated with an exacerbation of senior isolation which was mentioned in several interviews as a significant barrier. Some virtual participants lived with family who provided immediate support with technology,

enhancing accessibility and enjoyment. This differed from the participants living alone who were forced to navigate the FPP independently, ultimately hindering accessibility for those less familiar navigating technology. The contrasting experiences can be seen in the following quotations:

“I find [accessing the virtual program] easy, but I don’t know sometimes I need my wife [close] by. Sometimes I have no voice, or the image is not clear, and I have to call my wife to come fix it.” – participant 9

“[My daughter could] not really [help me]. She’s out there. She’s doing her own thing. I have a son as well. He’s good with technology. But they don’t live with me. They’re in the city.” – participant 2

Advancing Care Post-Pandemic

Virtual Care as a Tool

Once barriers associated with navigating technology were overcome, unanimous agreement on the convenience of virtual care prevailed. The main benefit highlighted was the convenience and efficiency that virtual care was able to provide participants. The barriers of arranging, affording, and devoting time towards transportation were all alleviated with the virtual assessments and classes that participants could join from home. The effectiveness of a FPP delivered virtually was felt to be diminished relative to an in-person program. Participants felt safer and more engaged when the physiotherapists were able to guide them in an in-person environment rather than through a screen. However, these reflections were not consistent when it came to the virtual assessments where participants generally agreed that effectiveness was sustained. Virtual care was deemed appropriate for the initial assessment when balancing convenience and effectiveness, but when it came to the exercise classes, the effectiveness and safety of in-person outweighed the convenience of virtual attendance. These participants demonstrated this balance:

“I haven’t had any problems as a result of talking to the doctor by phone. I think it generally has been pretty positive.” – participant 1

“[in-person] the physiotherapist could see more what I was doing and help me if I was doing something incorrectly which made me feel safe and like our time together was helpful. [...] she pointed out] different things about the way my feet move because she could see, which was only possible in-person. So overall I think in-person is better rather than if on Zoom.” – participant 10

A shared sentiment expressed by the participants was the special value of attending an in-person program. Virtual care was seen as a temporary solution and not a long-standing change. The human connection that participants felt in-person combated their everyday loneliness and filled their cravings for socialization. This did not translate to a virtual environment. A participant thus concluded:

“I do use Zoom for other things, and I think I would have no problem attending over Zoom, however, I find it is impersonal. You know, I don’t enjoy it. It is not like the real thing.” – participant 4

A Patient-Centred Approach

Depending on the participant’s level of frailty, independence, and their unique personalities, the “perfect” program was framed differently for each participant. This heterogeneity demonstrates the desire and necessity for program personalization. The key step identified by participants to achieve program personalization was extra effort and time spent on communication between participants and program staff. Moments of excellent communication were described as program highlights, whereas moments when communication was missing or of low quality often led to participant frustration and dissatisfaction. Ultimately, many participants voiced that with more communication and consideration for their unique needs, the program would have served them better. This was highlighted well by one of the participants:

“While the [physiotherapist] did all the regular sorts of things, teaching me the exercises, going over them, and watching me while I did them. The occupational therapy was something I really felt I didn’t need. [...] it wasn’t valuable for me [...] perhaps when people get into the program, you might want to say, do you want to be in the occupational [therapy] part?” – participant 5

DISCUSSION

Understanding the lived experiences of the older-adult patient population who attended the FPP at Sunnybrook during COVID-19 helps inform future iterations of the program, including the appropriate incorporation of virtual care post-pandemic.

First Steps First—Preference for Increasing Program Length and Reducing Program Size

Our findings reveal that the older adults who experienced a four-week program feel that to adequately support their physical and mental well-being, a longer program is necessary for sustained effect. This unanimous agreement is aligned with the current World Guidelines for Falls Prevention which indicate that an ideal program length consists of sessions occurring three or more times weekly, for 12 weeks, irrespective of individual fall risk.⁽²⁾ Furthermore, the reduction in class size that occurred due to pandemic restrictions was received positively by the participants, as increased one-on-one attention was important for feelings of safety and a long-lasting improvement in strength and balance. While a systematic review identified no significant difference between group and individualized exercise sessions in terms of their success preventing falls,⁽²⁰⁾ our study corroborated the World Guidelines for Falls Prevention that recommend smaller group numbers, while also recognizing that the importance

of this may depend on individual patient factors such as level of cognitive impairment.⁽²⁾ Despite the existing quantitative evidence suggesting no clear impact of class size on reducing falls, this study reveals that the patient's perception of safety and reduced risk of falling is accomplished through one-on-one—rather than group—exercise classes.

Overcoming Obstacles—Navigating the Challenges of a Pandemic and a Virtual Program

The participants' experiences navigating technology and pandemic-related barriers reveal that those with social support and pre-existing comfort with virtual care were able to find success with a sense of ease relative to those more isolated and unfamiliar with virtual care. Our sample likely represents higher socioeconomic status (SES) geriatric populations, as 70% of participants were university educated and all participants resided in the high-income catchment area of Sunnybrook Hospital.⁽²¹⁾ Studies indicate that the success of virtual care is contingent on SES and eHealth literacy, with older populations with higher income and education levels exhibiting greater proficiency in handling the technological aspects of video-based programs and a higher likelihood of receiving support from family.^(3,22) Furthermore, underprivileged populations may be less likely to receive a referral, in part due to reduced primary care contact.⁽²³⁾ To bridge gaps in accessibility, outreach and self-referral options may be necessary.

Advancing Care Post-Pandemic—Selective and Personalized Incorporation of Virtual Care

The COVID-19 pandemic prompted the widespread adoption of virtual falls prevention for frail older adult populations including the falls risk assessment and exercise classes. The effectiveness of virtual falls risk assessment remains uncertain in the literature and has not yet been incorporated into the World Guidelines for Falls Prevention. Our study highlights the positive patient experiences with assessments conducted both over phone and Zoom, including both perceived convenience and effectiveness. This supports the potential application of virtual falls assessments both during and post-pandemic. However, caution and professional judgement should guide implementation.

Regarding virtual exercise classes, while not FPP-specific, Fernandez *et al.* found patients' perceived benefits of video exercises to be similar to in-person exercise classes.⁽²⁴⁾ This is comparable to our findings, as participants' perceived success was more heavily tied to program length and individualized attention rather than the format of delivery (in-person versus virtual); however, participants' feelings of safety and increased social engagement led to an overall preference for in-person exercises. Similarly, Palazzo *et al.* conducted qualitative interviews and found that patients with chronic low back pain were attracted to new technology-based forms of rehabilitation; however, patients felt it was not a substitute for the human relationship formed in-person with health-care staff.⁽²²⁾ The current World Guidelines for Falls

Prevention recommend the use of telehealth in combination with FPPs in the community.⁽²⁾ Thus, the virtual exercise classes that occurred during the pandemic were an appropriate temporary substitute; however, with low evidence to support safety and an overall patient preference for in-person, the use of virtual FPP exercise classes should be considered sparingly and primarily in cases where virtual accessibility is safe and meets the needs of the population. Integrating a patient-centred approach into FPP design is crucial, as this is endorsed by the World Guidelines for Falls Prevention (which advocate for personalized interventions for high-risk patients).⁽²⁾ Our findings demonstrate the need for program personalization, including language support, technology education, and family involvement which is tailored to individual needs. A patient-centred approach can mitigate disadvantages, improve accessibility, and enhance patients' perceived success and program enjoyment.

Limitations

This study's findings may not generalize to FPPs serving lower-SES populations, as our sample was highly educated and lacked a diverse demographic profile. There was a remarkably high response rate, with 10 out of 18 possible participants; however, if technology was a limiting factor for the eight who did not participate, results may contain self-selection bias. Reasons for declining participation included one participant who reported difficulty hearing over the phone, one participant who was in hospital, and six who did not provide a reason (Figure 2). Recall bias and limited perspectives from both family members (two families participated out of the 10 interviews) and health-care workers (no health-care workers were interviewed) are other limitations. Implementing post-program surveys could mitigate recall bias, and seeking alternative perspectives would provide a richer and more equitable understanding of virtual FPPs' accessibility and effectiveness.

CONCLUSION

FPPs are a critical outpatient service which protect seniors from increased morbidity and mortality.^(1,2) In response to COVID-19, the implementation of virtual care into the Sunnybrook FPP filled a necessary gap when the alternative was cessation of senior support during a time when isolation, loneliness, and frailty were on the rise. Moving forward, we can reflect on the experiences of this unique patient population to understand how FPPs can be modified, and how to appropriately incorporate virtual care to address patients' diverse needs. Virtual care can be used to screen and assess falls risk, but in-person exercise programs and the human connection they provide are irreplaceable. Overcoming barriers to care requires personalized support, including access to technology and family involvement. It is important to take a patient-centred approach and foster supportive relationships between patients and health-care providers. In a broader application, incorporating virtual care allows for a

vast array of outpatient programs to provide essential services when in-person contact is either restricted or less desirable/accessible. Outpatient programs with room for flexibility, patient and family education, and program personalization will allow for the most appropriate incorporation of virtual care specific to the intended patient population. This will ensure a patient-centred approach to senior-friendly quality improvement of important outpatient services.

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CONFLICT OF INTEREST DISCLOSURES

We have read and understood the *Canadian Geriatrics Journal's* policy on conflicts of interest disclosure and declare there are none.

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APPENDIX A. Interview Guide

Introduction and Context:

1. Why were you originally referred for the falls prevention program (FPP)?

Questions on Feasibility:

1. What technology did you use during the FPP?
 - Telephone? Computer? Did you do video calls? Was anything in-person?
2. Had you used this technology before?
3. Was it easy to use this technology?
 - If yes, how come? If not, what made it difficult?
4. Were you able to clearly understand the healthcare workers through the technology?
 - Were their instructions clear?
 - Why/what made them clear or unclear?

Questions on Accessibility:

1. Did you have any trouble using the technology?
 - Did you need any help using the technology?
 - If so, what help was available?
2. Were the FPP appointments convenient for your schedule?
 - If yes, how so? If not, why not?
3. Were you able to attend all of the appointments for the FPP?
 - If yes, how so? If not, why not?
4. Did you know who to ask if you had questions about technology or about the FPP?
 - Can you provide an example?

Questions on Effectiveness:

1. Did the FPP help you? If so, how? If not, why not?
2. Were you able to feel confident participating in the FPP through the virtual format?
 - If so, what do you feel supported your confidence?
 - If not, why not?
 - What could be improved to help you feel more confident?
3. Did you feel safe participating through the virtual format?
 - If so, what do you feel supported your safety?
 - If not, why not?
 - What could be improved to help you feel safer?
4. What improvements do you suggest for the FPP?
5. Did you prefer the virtual components or in-person? Why or why not?

Demographics

1. What is your gender?
2. What is your age?
3. What are your living arrangements?
 - House? Apartment? Condo? Other?
 - Alone?
4. What is your highest level of education?
5. What was/is your type of employment?