

Research Article

Assessing Risk among Frail Older Adults in Ontario, Canada, during the COVID-19 Pandemic: A Mixed Methods Evaluation of a Telephone Outreach Program

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We developed a pandemic telephone outreach protocol to identify risk for social isolation, health destabilization, medication issues, inadequate services and supports, and caregiver stress among older adults at high risk of destabilization. Screening, conducted between April 1, 2020, and May 8, 2020, was targeted to those who had previously been screened as frail or who were identified as vulnerable by their family physician. This study describes the implementation and results of this risk screening protocol and describes patient, caregiver, and health professional perceptions of this outreach initiative. Mixed methods included satisfaction surveys and interviews completed by patients/caregivers ($N = 300$ and $N = 26$, respectively) and health professionals ($N = 18$ and $N = 9$, respectively). A medical record audit collected information on patient characteristics and screening outcomes. A total of 335 patients were screened in the early weeks of the pandemic, of whom 23% were identified with at least one risk factor, most commonly related to the potential for health destabilization and medication risk. Follow-up referrals were made most frequently to physicians, a pharmacist, and a social worker. The outreach calls were very well received by patients and caregivers who described feeling cared for and valued at a time when they were socially isolated and lonely. The outreach calls provided access to trusted COVID-19 information and reassurance that health care was still available. The majority of health professionals (>86%) were “very” or “extremely” satisfied with the ease of completing the screening via telephone and value for time spent; for 79% the protocol was “very” or “extremely” feasible to implement. Health professional interviews revealed that patients were unaware they could access care during the pandemic lockdown but were reassured that care was available, potential crises were averted, and they supported future implementation. Risk screening provides a significant opportunity to provide information, support, and mitigate potential risks and is an important and feasible component of pandemic planning in primary care.

1. Introduction

The World Health Organization declared the Coronavirus Disease 2019 (COVID-19) a global pandemic on March 10, 2020. By March 17, 2020, as case counts started to rise in Ontario, Canada, the provincial government declared a state of emergency and ordered the closure of businesses, schools,

restaurants, and theatres, along with other restrictions aimed at reducing the spread of the virus. This included the closure of all nonessential health services [1]. Family medicine practices were required to limit in-person patient contacts to only those considered highly urgent. In the first seven months of the pandemic, primary care office visits in Ontario decreased by 80% [2]. Similar reductions were

experienced elsewhere [3, 4]. Moreover, access to social services, home care services, and long-term care was limited during the pandemic [5].

Limited access to health care poses significant challenges for older adults who have multiple chronic conditions and health issues. Frailty in older adults compounds the potential for health destabilization. Early in the pandemic, it became clear that COVID-19 was disproportionately affecting older adults; increasing age is a significant risk factor for severe disease and poor outcomes [6, 7]. In addition, pandemic restrictions disrupted daily activities, life plans, and family and social activities, placing older adults at greater risk for depression, anxiety, loneliness, physical deconditioning, and functional decline [8–11].

Our primary care setting developed a pandemic telephone outreach protocol to promote safe living at home and to identify risk for health or psychosocial issues among patients at high risk of destabilization. The aim of this risk screening protocol was to develop an efficient, quick tool for the remote identification of risk so that patients at the highest risk could be directed to the most relevant health professional for further assessment and management. Proactive management of emerging issues was intended to prevent health crises and avoid acute care utilization at a time when COVID-19 was usurping health system resources. This intervention was based on the underlying principle of stratifying individuals according to risk of poor outcomes and tailoring the intensity of the intervention accordingly [12, 13]. Consistent with ideal models of chronic disease management, the majority of at-risk individuals may require low- to mid-intensity interventions that can be managed within primary care, whereas 5%–10% of very complex and very high-risk individuals require higher-intensity interventions and may require specialist care involvement [12].

1.1. Virtual Risk Assessment. For this intervention, we focused on those individuals known to be at highest risk, as previously identified as frail in the Case-Finding for Complex Chronic Conditions in Seniors 75+ (C5-75) program [14, 15]. The C5-75 screening program uses gait speed and hand-grip strength, a validated proxy in primary care for the Fried frailty phenotype criteria, to measure frailty as well as screening for common geriatric conditions associated with frailty that can lead to poor outcomes and contribute to health destabilization [16, 17]. C5-75 screening is conducted annually as part of routine primary care visits. Because of the severity of the pandemic and the significant concerns about the negative impacts associated with social isolation and lack of access to usual resources and services within the community, we additionally targeted individuals identified by their family physicians as being at risk. These individuals may not have been captured by the C5-75 program either because they were under 75 years of age or because they were missed for C5-75 screening previously because they did not attend office visits, refused screening, or deferred screening.

The C5-75 Pandemic Initial Telephone Outreach Risk Identification protocol is presented in Figure 1. The protocol

was developed rapidly based on the urgency of the situation, using the knowledge, expertise, and practical experience of interprofessional front-line health professionals (physicians, nurses, social workers, pharmacists, and occupational therapists) experienced with care of the elderly. Patients were screened for social isolation, risk of health destabilization, potential medication issues, services/supports, and caregiver stress (if applicable). Related to social isolation, we informally screened for potential risks for depression and loneliness and a lack of supports to meet individual needs, such as access to food and health supplies, which were impacted by pandemic restrictions [8, 18]. Patients living alone who identified themselves as having difficulty meeting needs, those distressed by social isolation, or caregivers self-reporting stress and need for support were immediately referred to a social worker for follow-up assessment and intervention as needed.

The risk protocol also focused on the identification of potential medication-related risk factors, such as non-adherence, safety concerns, and polypharmacy, which may contribute to health destabilization among older adults [19, 20]. Patients prescribed 5 or more medications were asked questions to assess potential risks: fall in the previous 6 months, emergency department visits or hospitalizations in the past year, and difficulty getting medications on time or taking medications. Endorsement of any of these risk factors prompted a referral to a pharmacist for further review and intervention as needed. The pharmacist also ensured ongoing access to medications and answered medication-related questions.

Potential health destabilization focused on symptoms that could potentially represent COVID-19 symptoms (fever and cough) or other underlying conditions that might need medical attention. At the nurses' discretion, the presence of any of the listed symptoms or other health concerns prompted an immediate referral to the patient's family physician.

As part of the risk protocol, we were interested in ensuring that older adults' basic needs (nutrition, hygiene, mobility) were safely being met, either independently or with assistance from family, friends, or community services. Individuals identified as not eating 2 or 3 meals a day, showering/washing once a day, or getting around their home safely without fear of falling were immediately referred to an occupational therapist for follow-up assessment and intervention as needed.

Risk screening was administered by a team of 17 registered nurses, registered practical nurses, and receptionists with experience with triaging health concerns. As the practice setting was closed in the early months of the pandemic, remote access to the electronic medical record (EMR) was set up so that the screening team could make the telephone calls from their homes, document screening results, and communicate with and make referrals to health professionals as required. We opted to use telephone contact as a quick way to reach older adults to speak directly with them and as a way to reach those not digitally connected, as has been recommended during the pandemic [21, 22]. The outreach calls were made from April 1, 2020, to May 8, 2020.

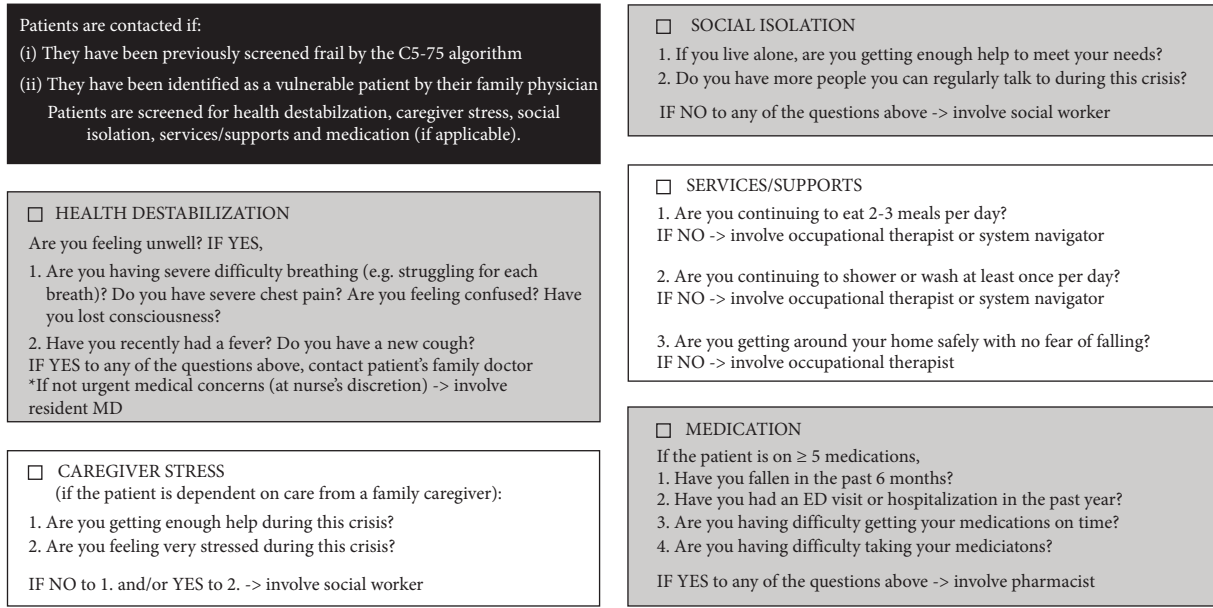


FIGURE 1: C5-75 pandemic initial telephone outreach-risk identification protocol.

During this time period, the health professionals involved in this initiative met regularly to discuss their progress and any concerns or issues that arose in making the calls.

The purpose of this study is to describe the results of the C5-75 Pandemic Risk Identification Protocol and to describe patient, caregiver, and health professional perceptions of this virtual outreach initiative.

2. Methods

2.1. Design. We used a mixed methods design involving the completion of questionnaires and interviews with patients and caregivers who received an outreach call and health professionals involved in the development and implementation of the screening protocol, as well as a medical record audit. As this study was considered a quality improvement initiative, a waiver for ethics approval was granted from the Hamilton Integrated Research Ethics Board (HiREB), McMaster University. The study was conducted according to ethical standards for the completion of research studies.

2.2. Setting and Participants. The C5-75 Pandemic Risk Identification Protocol was implemented in the Centre for Family Medicine, Family Health Team (FHT), located in Kitchener, a mid-sized city in Ontario, Canada. In Ontario, FHTs consist of groups of health professionals of varied disciplines working together to provide patient-centred primary care [23]. The FHT consists of 21 medical practices and has a combined patient base of 31,046 of which 16% ($N=4,967$) are 65 years or older. Individuals identified for screening were all those who screened frail in the C5-75 frailty screening program and all patients who were identified as vulnerable by their family physician. For individuals who were unable to complete the screening, because of

cognitive impairment, illness, hearing difficulties, or other issues, their primary caregivers could act as a proxy to complete the screening. All patients, caregivers, and health professionals involved in this initiative were invited to participate in this evaluation.

2.3. Measures. Questionnaires used were developed specifically for this study to explore patient, caregiver, and health professional perspectives on this outreach initiative. The patient and caregiver satisfaction questionnaire was adapted from patient satisfaction surveys used to evaluate services provided to older adults at the Centre for Family Medicine FHT [7, 24]. Patients and caregivers were asked to rate their level of satisfaction with the risk screening (5-point scale; 1 = not at all satisfied, 5 = extremely satisfied) and the extent to which care needs were met by this outreach initiative (5-point scale; 1 = not at all, 5 = completely). They were also asked whether they would like to be contacted again if there was a pandemic situation in the future (yes, no, not sure).

A paper questionnaire was mailed to all patients and caregivers who received an outreach telephone call. A self-addressed and stamped envelope was provided in which to return completed questionnaires. Respondents were also given the option of completing the questionnaire online; they were provided with a URL link to access the questionnaire online (<https://www.surveymonkey.com>). Questionnaire completion was anonymous.

A subsample of patients and caregivers that completed the screening were purposefully selected, ensuring representation from those who had no risks identified and those who at least one risk identified, to participate in an individual telephone interview to provide more in-depth feedback on their experience with the risk screening. A member of the nursing team generated a list of patients and caregiver proxies, stratified by no risks to multiple risks, from which the

interviewer [LMH] randomly selected interview participants. Interview questions focused on their pandemic experience, perceptions of the outreach calls, and experience with virtual care. The interview guide is presented in Algorithm 1.

Within a week of the last outreach calls, individuals who administered the risk screening were invited to complete an online questionnaire. This questionnaire assessed their satisfaction with screening tool, specifically ease of completion via telephone, value for time spent, ability to provide a good understanding of the risks that might exist (5-point scale; 1 = not at all satisfied, 5 = extremely satisfied), and the feasibility of conducting this screening (5-point scale; 1 = not at all, 5 = extremely). Respondents were also asked to identify their discipline/role. Respondents received an invitation to complete the questionnaire via email, which included the URL link to the questionnaire. They were given a 2-week time period within which to complete the survey and were sent email reminders a week before and a day prior to the deadline. Questionnaire completion was anonymous.

Following the questionnaire deadline, health professionals involved in either developing or implementing the risk screening protocol or receiving referrals for those identified at risk were invited to complete an individual telephone interview. Questions were asked about their perceptions of the pandemic experiences of frail older adults (challenges, key needs), their perceptions of the risk screening protocol and its implementation, and the impacts associated with the outreach telephone calls. The guide for these interviews is presented in Algorithm 1.

The interview questions were emailed to health professionals prior to the interview. Although it was not possible to send patients and caregivers the interview questions prior to the interview as we only had access to them via telephone, they were provided a summary of the interview questions as part of the informed consent process. All interviews (patient, caregiver, and health professionals) were conducted to the point of saturation (little or no new information was obtained in the last interviews conducted [25]). To ensure consistency, all interviews were conducted by one author (LMH). With the provision of verbal consent, all interviews were audio-recorded and transcribed.

We conducted a medical record audit of patients who were screened to obtain information on their gender, age, and history of common geriatric conditions and screening outcomes. The following information regarding the outreach calls and risk assessment was documented and retrieved from the EMR for analysis: Reason patients were not screened, if applicable; whether the patient was identified for screening based on frailty as identified by the C5-75 program or family physicians' identification of vulnerability; screening completed by patients or by proxy; relationship of proxy to the patient; types of risks identified; referrals to health professionals for intervention and type of provider; and call start and end times.

2.4. Data Analysis. We generated descriptive statistics (frequencies, means, standard deviations, medians) using SPSS software (Version 25.0, IBM Corp.). We used the chi-

squared test, with Fisher's Exact test as appropriate, or analysis of variance as appropriate to determine if there were significant differences in patient characteristics and risk identification between those identified for screening through the C5-75 frailty program or as identified by their family physician, and between those with at least one risk identified and those with no risks. Significance for p values was set at <0.05 . A descriptive qualitative content analysis was conducted to understand the personal lived experiences of patients, caregivers, and health professionals with this pandemic outreach initiative [26]. Two authors (LMH, CL) independently reviewed the interview transcripts to generate broad categories and identify reoccurring themes [27]. Several iterations in coding were required to achieve clarity in finalizing key themes generated by this analysis. We ensured study rigor with the use of field notes gathered during each interview, an audit trail of all decisions made regarding recruitment, data collection, and analysis, and the provision of feedback from authors on the interview analysis and interpretation [28].

3. Findings

3.1. Outreach Calls. A total of 384 calls were completed, and 335 (87%) of patients were screened. Forty-nine (13%) patients were not screened because the patient was in long-term care or hospital ($n = 17$; 35%), was being followed by home care or another service or clinic within the FHT ($n = 16$; 33%), screening was declined ($n = 5$; 10%), the patient could not be reached ($n = 7$; 14%), or no reason was provided ($n = 4$; 8%). Of the 335 patients were screened, 106 (32%) were identified by C5-75 and 229 (68%) were identified by their family physician. Screening was most frequently conducted directly with patients ($n = 313$; 93%); 22 (7%) patients were screened by proxy, most frequently an adult child ($n = 13$) or spouse ($n = 8$), and in one case, the relationship to the patient was unclear.

Patient characteristics are presented in Table 1. Patients ranged in age from 59–103 and two-thirds were female. There were few statistically significant differences between those patients who were identified through C5-75 and those identified by their family physicians. More patients identified through C5-75 had a history of stroke ($p = 0.03$) and were cognitively impaired ($p = 0.02$) than those identified by their family physician.

3.2. Risk Identification. A total of 77 (23%) patients were identified with at least one risk factor (Table 2). The majority of patients reported managing well with the assistance of family members or friends/neighbours who helped with getting groceries and maintaining social contact. The most commonly identified risk factors were health destabilization (13%) and medication-related (6%). Health destabilization risks included acute illness (pneumonia, shaking/sweating, and possible urinary tract infection), ongoing chronic conditions (diabetes, chronic obstructive pulmonary disease), pain, falls or falls risk, and a recent hospitalization or Emergency Department visit. Medication risks were most

- Patients and Caregivers
- (1) Caregivers: What is your relationship to the patient?
 - (2) What was the experience of having to physically isolate during the pandemic lockdown like for you?
 - (3) What did you like about the telephone call or follow-up care that you received?
 - (4) Was there anything that you did not like about this?
 - (5) In what ways was the telephone call or care you received helpful to you?
 - (6) What did you think about connecting with health professionals via telephone while in-person visits were not possible?
 - (7) Do you have any other comments to make about outreach telephone call?
- Health Professionals
- (1) In your experience, what challenges did frail older adults experience during the pandemic?
 - (2) What do you think are the strengths of the risk identification protocol? What do you like about it?
 - (3) Do you think there are any weaknesses or gaps in this screening protocol?
 - (4) Are there any patient/caregiver, health system, or other benefits or outcomes associated with this risk protocol?
 - (5) Do you have any other comments to make about the risk screening protocol or outreach telephone calls?

ALGORITHM 1: Study interview guides.

TABLE 1: Patient characteristics.

Characteristic	Total (N=335)	C5-75 identified (N=106)	Physician identified (N=229)	P*
Sex, n (%)				
Male	136 (40.6)	38 (35.8)	98 (42.8)	0.235
Female	199 (59.4)	68 (64.2)	131 (57.2)	
Age				
Mean (SD)	81.6 (5.8)	82.5 (5.3)	81.2 (6.0)	0.07
Range	59–103	70–98	59–103	
Medical history, n (%)				
Heart failure	33 (9.9)	14 (13.2)	19 (8.3)	0.115
COPD	36 (10.7)	12 (11.3)	24 (10.5)	0.476
Coronary artery disease	63 (18.8)	24 (22.6)	39 (17.0)	0.142
Hypertension	178 (53.1)	54 (50.9)	124 (54.1)	0.334
Diabetes	85 (25.4)	31 (29.2)	54 (23.6)	0.165
Hyperlipidemia	93 (27.8)	34 (32.1)	59 (25.8)	0.143
Atrial fibrillation	49 (14.6)	18 (17.0)	31 (13.5)	0.251
Stroke	23 (6.9)	12 (11.3)	11 (4.8)	0.028
Osteoporosis	81 (24.2)	27 (25.5)	54 (23.6)	0.403
Cognitive impairment (MCI, dementia)	29 (8.7)	15 (14.2)	14 (6.1)	0.015
Falls	5 (1.5)	1 (0.9)	4 (1.7)	0.494
Urinary incontinence	12 (3.6)	5 (4.7)	7 (3.1)	0.319
Other chronic conditions	307 (91.7)	99 (93.4)	208 (90.8)	0.287
Number of conditions				
Mean (SD)	4.1 (2.7)	3.9 (2.5)	4.2 (2.7)	0.358
Range	1–15	1–13	1–15	

SD = standard deviation; COPD = chronic pulmonary obstructive disease; MCI = mild cognitive impairment. * $p < 0.05$.

frequently related to having fallen in the past six months and having had an emergency department visit or hospitalization in the past year. Social isolation included self-identified reports of loneliness or mood issues (uneasiness, worry, grief, and depression). Risks related to inadequate services included inconsistent access to home care services, needs for assistance with personal care and housekeeping, and concerns regarding nutritional intake. There were no statistically significant differences between groups (identified by C5-75 or family physicians) in risk identification or types of risks identified.

There were few differences between those who had at least one risk identified ($n = 77$) and those who had no risks identified ($n = 258$; Table 3). While there were no significant age differences between the two groups, more females were

identified with at least one risk (74%) than not (55%, $p = 0.003$). More patients identified at risk had a history of stroke (14%) and urinary incontinence (8%) than those with no risks (5%, $p = 0.006$ and 2%, $p = 0.035$, respectively).

3.3. Follow-Up Referrals. While 77 patients had at least one risk identified, not all of these patients were referred for follow-up as some declined and others were already connected with a health professional (already seen, or scheduled to be seen); referrals for follow-up were made for 49 (64%) at-risk patients. Follow-up referrals were made to physicians ($n = 26$; 53%), a pharmacist ($n = 18$; 37%), a social worker ($n = 8$; 16%), and an occupational therapist ($n = 4$; 8%).

TABLE 2: Incidence of risk identification, *n* (%).

	Total (<i>N</i> = 335)	C5-75 identified (<i>N</i> = 106)	Physician identified (<i>N</i> = 229)	<i>P</i> *
At least one risk identified	77 (23.0)	31 (29.2)	46 (20.1)	0.06
Social isolation	9 (2.7)	3 (2.8)	6 (2.6)	1.0
Health destabilization	43 (12.8)	16 (15.1)	27 (11.8)	0.482
Inadequate services	5 (1.5)	3 (2.8)	2 (0.9)	0.331
Caregiver stress	6 (1.8)	1 (0.9)	5 (2.2)	0.669
Other risks identified	3 (0.9)	1 (0.9)	2 (0.9)	1.0
Medication risks [†]	21 (6.3)	10 (9.4)	11 (4.8)	0.144
Fall in past 6 months	11 (3.8)	4 (5.3)	7 (3.3)	0.486
ED visit or hospitalization in past year	9 (3.1)	4 (5.3)	5 (2.4)	0.247
Difficulty getting medications on time	1 (0.3)	1 (1.3)	0	0.261
Difficulty taking medications	1 (0.3)	1 (1.3)	0	0.261

* $p < 0.05$. [†]For those prescribed 5 or more medications.

TABLE 3: Characteristics of patients identified at risk and those with no risks, *n* (%).

Characteristic	At least one risk identified (<i>N</i> = 77)	No risks identified (<i>N</i> = 258)	<i>P</i> *
Group			
C5-75 identified	31 (40.3)	75 (29.1)	0.07
Physician identified	46 (59.7)	183 (70.9)	
Sex			
Male	20 (26.0)	116 (45.0)	0.003
Female	57 (74.0)	142 (55.0)	
Age			
Mean (SD)	82.3 (6.8)	81.4 (5.5)	0.277
Range	59–103	70–98	
Medical history			
Heart failure	7 (9.1)	26 (9.1)	0.498
COPD	12 (15.6)	24 (9.3)	0.091
Coronary artery disease	17 (22.1)	46 (17.8)	0.248
Hypertension	45 (58.4)	133 (51.6)	0.178
Diabetes	22 (28.6)	63 (24.4)	0.276
Hyperlipidemia	25 (32.5)	68 (26.4)	0.182
Atrial fibrillation	15 (19.5)	34 (13.2)	0.119
Stroke	11 (14.3)	12 (4.7)	0.006
Osteoporosis	15 (19.5)	66 (25.6)	0.173
Cognitive impairment (MCI, dementia)	7 (9.1)	22 (8.5)	0.516
Falls	3 (3.9)	2 (0.8)	0.082
Urinary incontinence	6 (7.8)	6 (2.3)	0.035
Other chronic conditions	71 (92.2)	236 (91.5)	0.526
Mean number (SD)	4.23 (2.3)	4.0 (2.8)	0.574
Range	1–13	1–15	

SD = standard deviation; COPD = chronic pulmonary obstructive disease; MCI = mild cognitive impairment. * $p < 0.05$.

Seven patients were referred to more than one health professional for follow-up. The only between identification group differences were for referrals to the pharmacist, for which there were more patients identified through C5-75 (42%) than for those identified by their family physicians (32%, $p = 0.03$).

3.4. Call Length. Telephone calls ranged in length between 1 and 30 minutes, with a mean of 5.8 (4.0) minutes (median = 5). Calls were significantly longer for patients for whom at least one risk was identified ($n = 77$; $M = 8.5$, $SD = 5.7$ minutes) than for patients for whom no risks were identified ($n = 258$; $M = 5.0$, $SD = 2.9$ minutes), $p = 0.001$.

4. Patient and Caregiver Perceptions

In total, 382 satisfaction questionnaires were distributed, and 300 questionnaires were completed (79% response rate). Thirty-four questionnaires (11%) were completed online and the remaining ($n = 266$; 89%) were mailed-in paper questionnaires. Evaluation respondent characteristics are presented in Table 4. The majority of satisfaction questionnaires were completed by patients (81%; $n = 244$). A small proportion of respondents (8%) did not identify whether they were patients or caregivers. There were no differences in ratings between patients, caregivers, and those who did not identify their group, so results are presented across all groups.

TABLE 4: Characteristics of evaluation participants.

Evaluation component	<i>n</i> (%)
Patient and caregiver satisfaction survey	300/382 (78.5)
Group	
Patients	244 (81.3)
Caregivers	31 (10.3)
Unspecified	25 (8.3)
Age, mean (SD), range	
Patients (<i>n</i> = 243)	81.7 (6.0), 47–99
Caregivers (<i>n</i> = 30)	69.6 (13.4), 44–96
Gender	
Female	188 (62.8)
Male	109 (36.3)
Patient and caregiver interviews	26/29 (89.7)
Group	
Patients	21 (80.8)
Caregiver	5 (19.2)
Patient age, mean (SD), range (<i>n</i> = 26)	82.2 (4.8), 75–96
Patient gender (<i>n</i> = 26)	
Female	20 (76.9)
Male	6 (23.1)
Number referred to other health professionals	15 (57.7)
Discipline referred to (<i>n</i> = 15) [†]	
Pharmacist	2 (13.3)
Occupational therapist	3 (20.0)
Social worker	3 (20.0)
Physician	11 (73.3)
Health professional survey	14/17 (82.4)
Discipline	
Registered nurse/registered practical nurse	13 (92.9)
Other [‡]	1 (7.1)
Health professional interviews	9/18 (50.0)
Discipline/role	
Occupational therapist	1 (9.1)
Pharmacist	2 (18.2)
Physician	2 (18.2)
Receptionist	1 (9.1)
Registered nurse/registered practical nurse	2 (18.2)
Social worker	1 (9.1)
Role in intervention [§]	
Screening protocol implementation	3 (33.3)
Screening protocol development	3 (33.3)
Provision of follow-up care	5 (55.6)

SD = standard deviation. [†]Percentage exceeds 100% because some patients were referred to more than one health professional. [‡]Receptionist with experience triaging telephone calls. [§]Percentage exceeds 100% because some individuals were involved in both development of the protocol and provision of follow-up care.

The majority of respondents (84%; *n* = 254) indicated that they were “very” (48%; *n* = 254) or “extremely” (36%; *n* = 109) satisfied with the outreach call they received (Figure 2). Similarly, the majority of respondents (70%, *n* = 211) indicated that their care needs were “very much” (33%; *n* = 100) or completely met (37%; *n* = 111) by this outreach initiative. The majority of survey respondents (85.3%, *n* = 256) were supportive of future outreach calls; 6% (*n* = 20) were not sure, and 2% (*n* = 6) were not interested in receiving outreach calls in the future.

In total, 29 patients and caregivers were invited to participate in an interview; 26 (90%) interviews were completed. The majority of interview participants were patients (Table 4). Of the five caregivers that completed an

interview, three were the patient’s spouse or partner, and two were their adult child. Over half (58%, *n* = 15) of the patients represented in the calls were referred to a health professional for follow-up as a result of the outreach, most frequently to a physician (73%, *n* = 11). Interviews ranged in length from 10–34 minutes, with an average length of 19 minutes.

Six key themes arose from the qualitative analysis of the interviews; these themes are described in Table 5 with illustrative quotes. Key themes were: (1) Patient needs were met by family members during pandemic lockdown; few had needs that were not met. (2) Pandemic lockdown was challenging due to social isolation created by restrictions; subtheme: social isolation for some resulted in loneliness. (3) Outreach calls generated a sense of feeling cared for, valued,

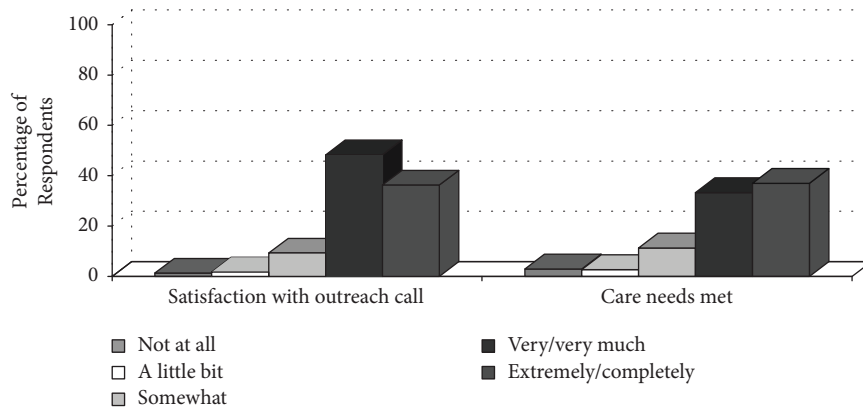


FIGURE 2: Patient and caregiver ratings of their satisfaction with the outreach call and the extent to which their care needs were met ($N = 300$).

and not forgotten. (4) Reassurance that health care was available if needed. (5) Access to trusted information about the virus and virus prevention. (6) Patients and caregivers were comfortable with discussing health/life situation on the telephone.

4.1. Health Professional Perceptions. Questionnaires were distributed to 17 health professionals; 14 were completed (82% response rate). The majority of respondents (>86%) indicated that they were “very” or “extremely” satisfied with the ease of completing the screening via telephone (93%, $n = 13$), value for time spent (86%, $n = 12$), and ability to understand potential risks that might exist (86%, $n = 12$; Figure 3). Similarly, the majority of respondents (78%) indicated that the screening protocol was “very” or “extremely” feasible to complete via telephone (79%, $n = 11$).

Eighteen health professionals involved in this outreach initiative were invited to participate in an interview; nine interviews were completed. The disciplines of interview participants are presented in Table 4. Interviews ranged in length from 10–34 minutes, with an average of 19 minutes.

Six key themes were generated from the qualitative analysis of the interviews conducted with health professionals; these themes are described in Table 6 with illustrative quotes. Key themes were: (1) Patients were unaware they could access primary care. (2) The screening protocol was efficient and feasible to implement. (3) Outreach provided reassurance that health care was available if needed. (4) The screening protocol identified potential risks requiring intervention/crisis aversion. (5) Outreach was meaningful work for care providers during the pandemic. (6) Health professionals support future implementation.

5. Discussion

The findings from this study confirmed the value of telephone-based risk screening for frail older adults during the pandemic. This screening helped to ensure that health issues were identified early and addressed, thereby potentially averting crises that may have required emergent care at a time when hospital capacity was limited and there was an

urgent need to reduce older adults’ risk of exposure to COVID-19. Risk screening and virtual care interventions may serve to mitigate the poor health outcomes associated with the withdrawal or rejection of home care and community services, such as meal delivery services, reduced physical activity and social engagement, increased stress, and reduced access to health and home care associated with this pandemic [22, 29]. The screening was quick and feasible to implement using existing health care resources in primary care.

Our pandemic risk screening intervention builds on our work in the C5-75 frailty screening program, which allows us to quickly and systematically identify those who are frail and at highest risk of health destabilization and to target interventions to this group when available resources are limited. Not only does this suggest the importance of frailty identification in primary care, it also enables efficient targeting of interventions to those at the highest risk of poor outcomes. Having identified those older adults who are frail with our routine C5-75 screening, we were able to quickly identify those who may be most at risk and in need of support during significant health and social crises such as a global pandemic. The C5-75 program uses objective measures handgrip strength together with gait speed, which we have demonstrated are an accurate, precise, specific, and sensitive proxy for the Fried frailty phenotype [17] in primary care. Using validated tools to measure frailty is critically important because using clinical judgement alone to diagnosis frailty results in a high false negative rate [30]. Although a higher percentage of patients identified through the C5-75 program were identified at risk (29%) than those identified by their physicians (20%) this difference was not statistically significant ($p = 0.06$). However, physicians may have missed some patients who were frail and at-risk due to a high false-negative rate when using clinical judgement alone. Our intervention also demonstrates the value of primary care as the first point of contact for comprehensive, coordinated, longitudinal health care with established and sustained relationships over time [31, 32]. The value of this trusted relationship was evident in the findings of this study, particularly as related to patients valuing information about COVID-19 from a trusted source.

TABLE 5: Key themes generated from the transcript analysis of interviews with patients (n = 21) and caregivers (n = 5).

Themes	Description	Illustrative quotes
Needs met by family members during pandemic lockdown	Family members ensured patient's basic needs (grocery shopping, medications, supplies) of patients were met; very few reported struggling to access food, medications, or supplies	<p>"We just stayed where we were at home, we didn't need to go out. The kids did the grocery shopping and everything. I wasn't in a grocery store for weeks. They did everything for us." [PatientID5]</p> <p>"My son does the grocery shopping for me." [PatientID8]</p> <p>"We've been supporting her through picking all the groceries up, doing all that, taking her to multiple doctor's appointments, so it's not like she didn't have any help or support." [CaregiverID12]</p>
Pandemic lockdown was challenging due to social isolation created by restrictions	Pandemic restrictions resulted in physical separation from others; lack of social interactions/contact with others; forced isolation was perceived as something they had no control over and could not resolve. For most who noted social isolation as a challenge, they missed the people and social activities they normally engaged in.	<p>"I think it's the lack of social interaction. We do have a very nice place to sit out on the porch, and being outdoors like that when the weather is good. We've had people come by and wave to us and talk to us from sidewalk, but it's not same as when you really get together to talk." [PatientID2]</p> <p>"Being able to be with people... I've lost that sort of community with my friends, and other people, just people in the stores across the road because you get to know them so well and then you can't be there, and I'm sure they feel the same way, they're losing their customers for so long." [PatientID17]</p> <p>"I felt, I don't know how to explain this to you, lonely... I think it was just the loneliness I suppose, how I felt at the time... My brother came over twice. Very lonely. I guess depression. I covered my face with the mask. I didn't cook all the time. Really very lonely." [PatientID4]</p>
Subtheme: social isolation for some resulted in loneliness	Subtheme: some patients who described social isolation as challenging described a profound sense of loneliness as a result. For some, social isolation and loneliness resulted in depression	<p>"I think that [patient] underplays the toll that [social isolation] taking mentally, because normally she's out 3-4 times a week you know... We've seen her become quite depressed because she's feeling so lonely. It's been quite the adjustment because she was so active before all this." [CaregiverID25]</p> <p>"I felt like he wasn't forgotten, that somebody remembered we existed even though we were locked away." [CaregiverID3]</p> <p>"It made my heart was so happy and I was so proud to get [a call] because I felt [physician] and the nurses, I felt they cared and that someone cared for us, and that just made me feel so good. The rest of the day I felt good because someone cared." [PatientID13]</p>
Outreach calls generated a sense of feeling cared for, valued, and not forgotten	There was gratitude for the outreach telephone calls as it as it made patients and caregivers feel that they were valued, respected, and that their health professional was concerned and care enough about them check-in with them	<p>"Well it was nice for them to think of me, and of course all the other people that are house bound and so on. It just made me feel good to think that they were considering that as well... I think for them to be concerned about their patients shows some respect and support." [PatientID7]</p>

TABLE 5: Continued.

Themes	Description	Illustrative quotes
Reassurance that health care was available if needed	<p>The outreach call reassured patients and caregivers that health care was available, which was particularly relevant as many did not know that they could access their care providers, assuming the medical centre was closed and inaccessible. Many who were not aware they could access care were those who did not have Internet or e-mail access</p>	<p>“I thought they were not open for visits. I didn’t know you could call them. . . . So that was good to know.” [CaregiverID16]</p> <p>“It was nice of them to take the time. And to let us know that they were still there and would be there for us if we needed it. That was reassuring.” [patient ID21]</p> <p>“We don’t have like a computer or any of that electronic stuff like that and we don’t even have a cell phone . . . We didn’t know that there was someone at the doctor’s office we could call. . . . So we don’t know what’s going on unless someone tells us. So that was good thing to know in case we got sick.” [PatientID13]</p>
Access to trusted information about the virus and virus prevention	<p>Outreach calls provided information about the virus, which was particularly valued by those who were not Internet connected. Patients were reassured that they were doing all the right things to prevent infection. The centre was considered a reliable, trusted source for information on infection prevention</p>	<p>“It seemed like the rules about what you should and shouldn’t do [infection prevention] were different depending on who you listened to, so it was good to hear it from the doctor’s office.” [CaregiverID3]</p> <p>“How to stay safe. It was good to talk to them about what we should and shouldn’t be doing.” [PatientID18]</p> <p>“I had already inquired, I forget where it was, and knew what we had to do and what was going to happen, and then [nurse] just verified that what I was told was all right and that what we were doing was good. That made us feel so much better, because you don’t want to get sick and then find out you weren’t supposed to be doing something or should’ve been doing something else.” [PatientID11]</p>
Patients and caregivers were comfortable with discussing health/situation on the telephone	<p>Discussing their health care or life situation over the telephone was not uncomfortable; having established relationships with care providers contributed to their comfort level</p>	<p>“I know everyone at the center and I feel comfortable talking to them on the telephone if I have an issue.” [PatientID26]</p> <p>“I’ve known [physician] for a long time so I felt comfortable enough.” [PatientID22]</p> <p>The doctor did phone us when he had an appointment, we made a visit phone call and we had various questions and talked. And you know, he was excellent. . . . Yea, I felt really comfortable.” [PatientID23]</p>

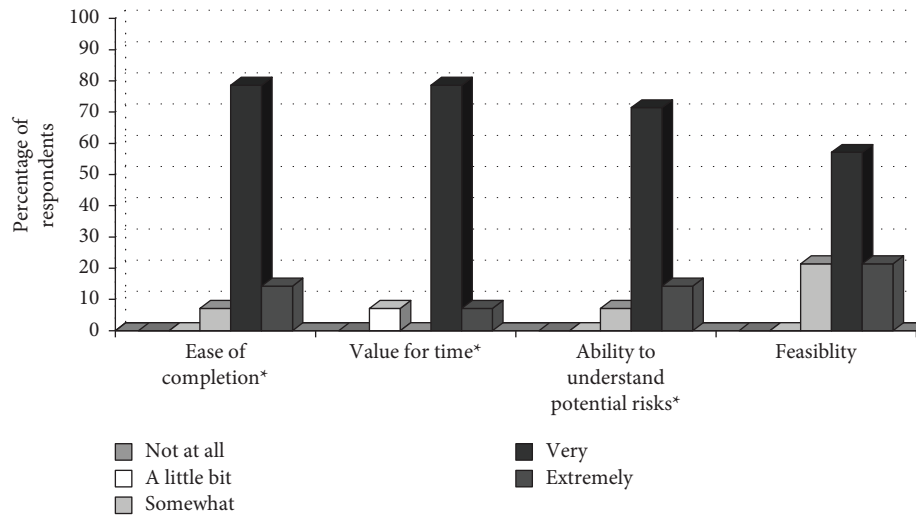


FIGURE 3: Health professional ratings of various aspects of the outreach calls ($N=14$). *Satisfaction ratings.

Several other risk or triage tools for use with community-dwelling adults were developed during the pandemic. Evaluation Socio-GERiatrique (ESOGER), administered by medical students via telephone, identified those adults at highest risk enabling prioritization of those who required urgent health or social care [33]. ESOGER was tested in a study of 879 older adults and reported an overall frailty prevalence rate of 65%, suggesting that COVID-19 restrictions among the homebound places them at greater risk for physical deconditioning and, subsequently, at greater risk for falls and fractures [34]. The social determinants of health framework has also been recommended to identify older adults at risk for poor outcomes during the pandemic due to poverty, disability, and social isolation [35]. Our screening tool was explicit in its focus on health destabilization, potential medication issues, and implications of home supports on nutritional intake, ability to maintain personal care, and potential for falls, all of which are impacted when home care services are reduced. There are several advantages of our intervention. We targeted only those who were frail, plus any others felt to be at high risk based on family physicians' review of their patient rosters, thus ensuring efficient targeting of limited available resources. We purposefully assigned health care professionals working with each family physician's practice to do the telephone outreach, so that it was often a familiar person and voice, and someone with an established and trusting relationship that was contacting patients. This proved to be beneficial as it was comforting to patients who were likely frightened by the pandemic, isolated, and unsure of what credible information sources they could trust.

There are several advantages to using the telephone for patient outreach. It is a quick and efficient way to reach older adults, and the telephone is often preferred over other digital technologies by this demographic [36]. Several initiatives during the pandemic successfully used telephone calls for patient outreach [37, 38]. Access to health care via telephone and videoconferencing proved to be critical during the pandemic, as reduced health-seeking behaviours were

evident among older adults wanting to avoid virus exposure [22, 39, 40]. A key finding in our study was that many older adults were not aware that they could still access health care, either virtually or in-person, during the pandemic lockdown. While attempts to increase use of virtual methodologies prior to the pandemic had been met with limited success [41], physical distancing requirements due to the pandemic may have created the ideal conditions to garner support and motivation for remote health and social care. Although many barriers exist in the use of internet-based technology by older adults [42–44], telephone contact is a viable option. As demonstrated in this study, while patients may prefer in-person visits, they were quite comfortable with and willing to accept care as provided via telephone.

A key finding in this study was that patients valued the outreach and described feeling cared for and not forgotten. Patients were comforted knowing that their care providers were checking in on them. Health professional commitment to caring for their patients over time is conceptually referred to as nonabandonment [45]. During a stressful and frightening time when people were told to self-isolate and were fearful of a highly virulent pathogen with a high mortality rate in older adults [46], it was significant to patients that someone they knew was reaching out to them, providing credible, trustworthy information they could trust, and caring enough to make sure they were well. Recognizing family physicians' central obligation and commitment to care for patients, the outreach calls reinforced for patients their physicians' continuing commitment to their care [47]. This type of outreach during the pandemic is well aligned with person-focused care in primary care practice [48].

There are several limitations to this study. Patients selected for inclusion in this intervention were those previously identified as frail and those identified as vulnerable or at risk by their family physicians. It is not known what criteria family physicians used to identify their patients as vulnerable. Given the sense of urgency at the time and the limited human resources available, it was decided not to

TABLE 6: Key themes generated from the transcript analysis of interviews with health professionals (N = 9).

Themes	Description	Illustrative quotes
Patients were unaware they could access primary care	Patients had health care needs for which they normally would have accessed health care but many were unaware that despite the pandemic lockdown, they were still able to contact their care providers	<p>“If they had medical concerns, just like little tiny things that they would have normally called the doctor for and come in for, they just didn’t realize that they could call us or whatnot if they needed something simple.” [HPID1]</p> <p>“I think for the most part people were just kind of unsure as to what was available to them, and how to reach out to their family doctor if needed... a common response was: ‘Oh, I didn’t know you guys were open!’” [HPID4]</p> <p>“There was a lot of confusion about the medical services. So you know, there’s a lot of people that didn’t know, a lot of the community was closed, a lot of people assumed that doctor’s offices were closed.” [HPID7]</p>
Risk screening protocol was efficient and feasible to implement	The risk protocol was perceived to be efficient and feasible to implement in terms of ease and time (quick). Remote electronic medical record access and interdisciplinary involvement contributed to efficiency as each discipline was readily accessible to contribute within their scope of practice	<p>“So it’s a structured approach to trying to identify risks, and it is efficient, and I think that we could implement it very quickly.” [HPID6]</p> <p>“The fact that I could get online for this charting at home within a couple hours changed my work life completely. . . with a good team structure, with access to charts, I could just do whatever needed to be done.” [HPID3]</p> <p>“I got the call initially, for social isolation or caregiver stress and then medication might have been an issue as well. So then I would message our pharmacist and then it was great. That worked out really well, it worked when it needed to.” [HPID9]</p>
Outreach provided reassurance that health care was available if needed	As many patients were not aware that the centre was open and that they could access healthcare, the outreach calls served to inform and reassure patients that health care was available if needed	<p>“Just letting them know that we’re here for them. I think those things are understated in terms of how beneficial that is for people.” [HCPID2]</p> <p>“I think patients benefited by being reassured that we were still here and that we were available to them and that we could contact them if needed... and that we were here to support them.” [HCPID4]</p> <p>“Their appreciation to know that we weren’t closed, if you called in you would get somebody. I can’t tell you how I really think it put a lot of people at ease, took away their stress.” [HCPID3]</p>

TABLE 6: Continued.

Themes	Description	Illustrative quotes
<p>Risk screening protocol identified potential risks requiring intervention/crisis aversion</p> <p>The outreach calls gave patients and caregivers an opportunity to voice concerns for which they may not have otherwise reached out for assistance; this allowed for early identification of potential risks that could have led to crises/health destabilization without early intervention</p>	<p>“I would say that our C5-75 [virtual outreach] has identified many people who we did eventually bring in because of identification of risk. . . . There were many that thought they were doing just fine and that’s great, but there are enough that it was probably the tipping point that allowed them to access care before that crisis. . . . And there were actually some real crises as well that were identified where the caregiver just didn’t know where to turn to.” [HCPID6]</p> <p>“Just not letting people sit on problems and being a little bit more proactive and trying to catch things before they’re a big problem for people if it goes on for too long.” [HCPID1]</p> <p>“I think absolutely [crisis aversion] . . . I sometimes wonder what would have happened if we didn’t intervene. It might not have been so good.” [HCPID9]</p>	
<p>Outreach was meaningful work for care providers during the pandemic</p> <p>Health professionals involved in this initiative found it to be meaningful and important work, particularly within the context of pandemic uncertainty and anxiety for patients</p>	<p>“I like talking to them. I thought it put them at ease. I really thought there was meaning to it even if they answered no to all of the questions.” [HCPID3]</p> <p>“I felt like, to me it was important that we were reaching out to them because you never know what’s going on with that demographic, and especially in the middle of a life changing event, so for me it felt like important work to be doing at this time.” [HCPID5]</p> <p>“It was a way for [health professionals] to help in time of crisis. I saw a real enthusiasm almost in our healthcare professionals because they could actually do something that might make a difference. . . . so it was almost like in some ways a new program that pulled a lot of people together, all inspired by the same desire to make a difference during a crisis” [HCPID6]</p>	
<p>Health professionals support future implementation</p> <p>There was much support for implementing the virtual outreach risk assessment should there be another pandemic or situation with restrictions to access to health care</p>	<p>“I would recommend we do this again because there’s a demographic that is going to need help and they might not know to reach out to us, they might not know who to reach out to at all.” [HCPID5]</p> <p>“I think we should just start planning for something with the expectation that even if [another pandemic lockdown] doesn’t happen, we have a plan in place. . . . so that we’re not in that situation where we’re facing another challenge and we don’t have anything to fall back on.” [HCPID8]</p> <p>“I think we should be doing these calls. . . . Especially if there is a resurgence of this virus and I think it’s a good thing to continue for sure. I think we just have to have a plan in place for this.” [HCPID9]</p>	

impede patient identification by having too many inclusion or exclusion criteria. As mentioned earlier, it is possible that by using a clinical impression alone, some frail, at-risk patients may have been missed. The patients served in this practice setting may not be representative of the broader population of older adults. Many patients received high levels of support from family and friends, and very few reported that their basic needs were not during the pandemic, reflecting that this is likely not a population that is overly impoverished or marginalized. Our rate of risk identification may be an underestimation of the risks that existed for this population during the pandemic. The outreach calls were made in the early phase of the pandemic, perhaps before longer-lasting impacts were realized. Likewise, some patients may have downplayed potential health issues, either believing the pandemic would end soon allowing them greater access to care or fearing that disclosure would result in recommendations to access acute care, putting them at risk for exposure to COVID-19.

6. Conclusion

The World Health Organization anticipates that the COVID-19 pandemic is not an isolated event and the world will be faced with multiple pandemics in the not so distant future [49]. Findings from this study will inform future use of our risk screening protocol should we be faced with another pandemic. In this study, there was consensus among patients, caregivers, and health professionals that this type of outreach should be implemented again. Selected targeting of interventions to older adults identified as frail ensures that those known to be at the highest risk for poor outcomes are assessed and managed proactively, with the aim of helping older adults to remain living in the community safely with the best quality of life for as long as possible.

Data Availability

The data are available upon reasonable request from the corresponding authors.

Additional Points

What Is known. (i) Limited access to health care created by pandemic restrictions posed significant challenges for frail older adults at risk for health destabilization. *What This Paper Adds.* (i) It is feasible to implement a telephone risk screening protocol to identify potential health and psychosocial risks among frail older adults to proactively intervene to avert crises. (ii) Telephone outreach is a significant opportunity to provide trusted information, support, and mitigate risks during a global pandemic that created much anxiety and uncertainty. (iii) Telephone outreach and care is a viable option for older adults during pandemic restrictions.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

Authors' Contributions

Linda Lee was responsible for conceptualization; funding acquisition; resources; methodology; supervision; writing the original draft, reviewing, revising; and final manuscript approval. Loretta M. Hillier was responsible for data curation; methodology; project administration; data collection; data analysis; data visualization; data interpretation; writing the original draft, reviewing, revising; and final manuscript approval. Jillian Carducci was responsible for conceptualization; data collection; data interpretation; reviewing and revising; and final manuscript approval. Tejal Patel was responsible for conceptualization; methodology; data interpretation; reviewing and revising; and final manuscript approval. Kara Skimson was responsible for data collection; project administration; supervision; data interpretation; reviewing and revising; and final manuscript approval. Sharon Dillon-Martin was responsible for conceptualization; data interpretation; reviewing and revising; and final manuscript approval. Lissa Kuzych was responsible for conceptualization; data interpretation; reviewing and revising; and final manuscript approval. Lindsay Beuermann was responsible for data curation; methodology, software; data collection; data interpretation; reviewing and revising; and final manuscript approval. Ruchi Parikh was responsible for data collection; data interpretation; reviewing and revising; and final manuscript approval. Catherine Lee was responsible for data analysis; data visualization; data interpretation; reviewing and revising; and final manuscript approval.

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