



Using Comprehensive Geriatric Assessment in Identifying Care Goals and Referral Services in a Frailty Intervention Clinic

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ABSTRACT

The proportion of older adults and frail adults in Canada is expected to rise significantly in upcoming years. Currently, a considerable number of older adults do not actively participate in developing their own care plans; prior research has indicated several benefits of patient engagement in this process. Thus, we conducted a mixed methods study that examined the prevalence of rehabilitation goals and identified these for 305 community dwelling older adults referred to a frailty intervention clinic utilizing Comprehensive Geriatric Assessment (CGA) between 2014 and 2018. Top patient concerns included mobility (84%), services, systems, and policies (51%), sensory functions and pain (50%), and self-care or domestic life (47%). The most common referrals or recommendations for patients included further follow-up with a physician or specialist (36%), referral to an onsite falls prevention clinic (31%), and medication modifications (31%). Based upon these findings, we recommend greater utilization of CGA within a team-based approach to improve patient care by allowing for greater collaboration and shared decision-making by health-care providers. Moreover, CGA can be an effective tool to meet the complex and unique health-care needs of frail patients while incorporating patient goals. This is vitally important considering the predicted growth in the population of frail and/or older patients, as well as the current challenges and shortfalls in meeting the health-care needs of this population.

Key words: older adults, frailty, comprehensive geriatric assessment, health-care needs, rehabilitation goals, health-care delivery

INTRODUCTION

Frailty is a state in which a person's physiological systems are compromised and thus significantly vulnerable to external stressors as a result of aging-related decline.⁽¹⁾ The proportion

of frail individuals in Canada is expected to grow as a result of the projected increase in the proportion of older Canadians; the percentage of Canadians 65 years of age or older is expected to increase from 17.5% in 2019 to 29.5% in 2068.⁽²⁾

Significant numbers of older adults indicate their lack of involvement in determining their own care plans; most leave decision-making to their health-care team.^(3,4) Patient reasons for doing so include a lack of understanding of their conditions, poor communication between patients and their health-care providers, and their health-care providers' time constraints.^(3,5) Nevertheless, most older adults appreciate having their concerns addressed by their health-care providers in developing their care goals.⁽³⁾

Engaging patients in their health-care plans can lead to better health outcomes, reduced hospitalizations, lower usage of emergency department care, and better quality of life.^(4,6) Involving patients in decision-making by inquiring about their goals and needs which increases patients' sense of empowerment, resulting in appreciable gains for health-care providers.⁽⁷⁾ Thus, identification of frail older patients' specific health-care needs can enhance the services provided to meet the health-care needs of this population, while reducing redundant, inefficient, or ineffective services.

Implementing a Comprehensive Geriatric Assessment (CGA) is one effective method for capturing the viewpoints of older patients and tailoring care plans to their needs. CGA can be described as a multidisciplinary approach that enables providers to assess biopsychosocial factors in older individuals.⁽⁸⁾ By doing so, providers can establish coordinated treatment plans with considerable benefits for patients. Previous literature has shown CGA to be effective in several areas including improving patient functioning, reducing hospitalization risk, and reducing mortality in older adults.⁽⁹⁾

The goals of this mixed methods study are: (1) as identified by the CGA, to identify the priority needs and goals of frail older adults and frail middle-aged adults who were

referred to Providence Healthcare’s Frailty Intervention Team (FIT) clinic (Toronto, Ontario); and (2) to identify the services to which Providence Healthcare’s FIT referred these patients.

METHODS (See Appendix A for the study’s detailed methodology)

The FIT clinic at Providence Healthcare consists of an interdisciplinary team. Data from 305 patients referred to FIT between 2014 and 2018 were analyzed. Patients participating in the present study had completed the relevant CGA’s goals/achievement sections. Patients’ goals and hopes were categorized according to the International Classification of Functioning, Disability and Health (ICF).⁽¹⁰⁾ This categorization focused on body structures and functions, activities and participation, and environmental factors (See Appendix B for details regarding ICF subcategories). Data analyses included frequency analyses (means, standard deviations); statistical analyses employed the R Statistical Software 3.4.4 (R Foundation for Statistical Computing, Vienna, Austria). Demographic characteristics are reported in Appendix B and Table 1. Patients’ major health concerns and goals are summarized in Table 2. Please see Appendix C for a table of participants’ health conditions.

RESULTS

Mobility was the most common concern for patients in our sample (N=255; 84%). One patient stated that they hoped to: “...have no falls and [have] more confidence in walking”. Services, systems, and policies was the second most frequent patient concern (N=155; 51%); this finding highlights the multiple social determinants of health that older frail adults face. For example, one patient’s goal was to alleviate the pressures her daughter felt in caring for her; her daughter was finding it “...very hard to look after my mother at home because of her declined mobility and financial issues”. Our patients’ third most common domain related to sensory functions and pain (N=152; 50%); many patients focused on improving their hearing and vision. One patient stated that they “[Want to] reduce pain and regain independence”. Patients’ fourth most common concern related to self-care and domestic life

(N=142, 47%); one patient stated that they wished to “...maximize safety at home”.

Table 3 summarizes the referrals and/or recommendations that the FIT clinic made on behalf of our study’s patients. These included 18 different categories of referrals or recommendations that were tailored to meet patients’ needs. Referrals to a physician or a specialist represent the most common referrals/recommendations (N=111; 36%). Other common referrals included referrals to Providence Healthcare’s Falls Prevention Clinic (N=95; 31%), and medication-related recommendations (N=94; 31%).

DISCUSSION

The present study provided insights regarding the need for shared decision-making involving health-care providers and their frail older adult patients. The study also highlighted the importance of health-care services that cater to the needs of older frail adults.

Patients’ most common concerns related to their mobility issues, as highlighted by 84% of patients. This finding supports previous research, which identified mobility to be a greater concern in frail populations than in non-frail populations.⁽¹¹⁾ Patients’ second most common concern related to health services, systems, and policies; previous research has documented older Canadians’ significant challenges in accessing health-care and social services.⁽¹²⁾

While acknowledging current resource limitations, the authors recommend greater use of CGAs, in addition to earlier assessment of geriatric conditions and frailty within primary care settings.⁽¹²⁾ It is suggested that integrating health-care and social services will require greater coordination between these services, specialized training for service providers and family caregivers, support for caregivers, and technological tools capable of improving the efficiency of communications between patients, their caregivers, and health-care professionals.⁽¹²⁾

FIT Referrals and Service Recommendations for Patients

Providence Healthcare’s FIT Program recommended further consultation with a geriatrician or other specialist for 36% of our study’s patients. This finding was not unexpected, since our patients had been referred to the FIT program by their primary health-care physicians (or other professionals) who, in turn, had recognized both the need for specialized frailty care, and the lack of a well-established primary health-care system for identifying and responding to frailty in Canada.⁽¹³⁾

Our sample’s second most common referral (or recommendation) was to Providence Healthcare’s Falls Prevention Clinic; this was recommended for 31% of patients. This finding was not unexpected as frailty and falling are closely associated through mechanisms such as orthostatic hypotension or sarcopenia.⁽¹¹⁾

Our study’s third most common recommendation was medication-related (31%). Recent evidence has documented the negative effects of polypharmacy among older patients,

TABLE 1.
Demographics of the study population (N=305)

Age (mean ± SD, range)	82 ±11, 50–104
Sex (N, %)	
Female	185 (61)
Male	120 (39)
Referral Source	
Local Health Integration-Networks (LHINs) (N,%)	38 (21)
Partner Hospital (N, %)	21 (12)
Primary Care (N, %)	110 (62)
Providence Healthcare (N, %)	10 (6)

TABLE 2.
Narrative examples of commons concerns and goals of patients

<i>Domain</i> <i>N (Percentage of patients, %)</i>	<i>305</i> <i>(100)</i>	<i>Example of Goals</i>
Mobility	255 (84)	“I would like to be able to walk better” “I want to be able to go out and to be more social, improve my mobility”
Services, Systems, Policies	155 (51)	“To receive help at home, particularly with regard to meals, personal care, and [activities of daily living] to relieve pain. I did have a short stay at a retirement home...but I was not able to afford it. I am worried about my housing situation”
Sensory Functions and Pain	152 (50)	“Poor hearing and vision” “To experience less pain in my neck and back...and have a better night’s sleep”
Self-care, Domestic Life	142 (47)	“Improve my leg strength and mobility to be able to get up from a regular-height chair and car seat independently so that I can use Wheel trans independently, transfer in and out of my bathtub safely and independently, increase ease of transferring in and out of the car, increase the length of time that I can walk continuously, Increased ability to independently and efficiently complete self-care activities and other activities of daily living”
Neuromusculoskeletal and Movement Related Functions	132 (43)	“To improve walking and balance control [and] to gain more strength in my extremities”
Mental Functions	122 (40)	“[What concerns me most right now] is my short-term memory decline. [I] want my family to be provided with support and education regarding dementia to address my memory issue”
Other Body Functions	112 (37)	“Concerned about urinary incontinence”
Community, Social and Civic Life	41 (13)	“I like to make relationships with others, especially French speaking people to increase social engagement and reduce social isolation”
Support and Relationships	34 (11)	“[I want] to do daily activities with less help to relief my wife [who is my caregiver]”
Products and Technology	11 (4)	“To receive appropriate wheelchair, to learn strategies to support safe transfers”
Voice and Speech Functions	7 (2)	“To improve my speech and swallowing” “...to have improved speech and communication”
Communication	6 (2)	“To be able to communicate with my family, friends and caregivers”
General Tasks and Demands	4 (1)	“Experience less dizziness, being able to go out as before and having less stress about my current situation”
Interpersonal Relationships	4 (1)	“I want to be loved [by] someone” (Patient is in grief; his dog passed away a month prior.)

including increasing cognitive challenges, greater risk of falls, higher hospitalization rates, and increased fatalities.⁽¹⁴⁾ Polypharmacy is also associated with a greater risk of frailty in older patients.⁽¹⁵⁾

Our research highlighted how patients’ concerns or goals can be addressed by various recommendations made by Providence Healthcare’s FIT clinic. For example, FIT made directly fall-related recommendations for 31% of patients; however, 58% of patients expressed concerns about falling. Several reasons might account for this perceived mismatch; patients’ concerns about falling may have been addressed through other interventions. For example, assessment by an OT or PT, a medication-related change, referral to physical rehabilitation, or support with activities of daily living provided by a personal support worker can positively impact on patient fall-related concerns. In addition, although falling may have been a concern for our frail patients, falling might not be the patient’s primary concern, as determined by patients and the FIT team.

Limitations of this study include the single center nature of the study and incomplete patient files leading to missing data. This may have introduced bias/skewing of results, as highly motivated individuals may have been more likely to provide complete case information. Another limitation is potential selection bias, as individuals referred to the FIT clinic were already identified by primary care providers to need deeper investigation of frailty-related issues.

CONCLUSIONS

Our study has documented the benefits of employing the CGA in identifying patients’ goals, concerns, and the most appropriate referrals for patients; this requires a team-based approach that will improve patient care by targeting multiple domains of care. From a provider perspective, it allows for further understanding of patients’ health goals which is an important step in customizing care plans and making appropriate referrals within the context of a frail population

TABLE 3.
Referrals/recommendations made by FIT team members based on top goals and concerns of patients

	<i>N (Percentage of patients, %)</i>
Physician/specialist consultation	111 (36)
Falls Prevention Clinic	95 (31)
Medication-related	94 (31)
Community Outreach services/in-home assessment therapy	86 (28)
Others	85 (28)
Outpatient rehabilitation clinics at Providence for assessment/therapy	71 (23)
Consultation with allied health professional ^a	58 (19)
Link with Local Health Integration Network (LHIN)	47 (15)
Clinics/services outside Providence (Acute care, Rehabilitation, Alzheimer's Society, Variety Village, Neighbourhood Link, Canadian National Institute for the Blind)	43 (14)
Other clinics/services at Providence (ambulatory services like psychiatry, pain clinic, chiroprody, etc.)	36 (12)
Adult Day Program	33 (11)
Family physician consultation	26 (9)
In-patient rehabilitation at Providence	19 (6)
Medical tests/examinations	17 (6)
FIT physician assessment	12 (4)
Long-term care application/eligibility assessment	12 (4)
Follow-up with doctors	5 (2)
Caregiver support services	1 (0.3)

^aAllied health professionals include occupational therapists, physiotherapists, speech and language pathologists, social workers, pharmacists, dietitians, and chiropractors.

and an interdisciplinary care team. To our knowledge, it is one of the first Canadian studies to use the ICF to categorize patient goals within a frailty context. Overall, CGA was able to identify biopsychosocial needs of the patient that went beyond the primary concern, while further facilitating shared decision-making with patients and their caregivers.

The predicted growth in the proportion of older Canadians, combined with the current shortfall in delivery of health care for this older cohort, requires greater attention to the provision of health-related programs, policies, and services for older adults in general, and for older frail adults in particular.⁽¹⁶⁾ Understanding older adults' health-care needs and goals has important implications for a wide array of health-care fields. The complexity of health-care requirements for frail patients requires collaboration among health-care professionals, and the integration of an array of health-care practices to effectively respond to patients' health-care needs and goals. The CGA is one useful tool in addressing these challenges.

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CONFLICT OF INTEREST DISCLOSURES

We have read and understood the *Canadian Geriatrics Journal's* policy on disclosing conflicts of interest and declare that we have none.

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APPENDIX A. Summary of Methods

Study Site and Population

Providence Healthcare, situated in Toronto (Canada) is a leader in rehabilitation, palliative care, long-term care and community programs in Toronto. Providence Healthcare has utilized CGA extensively in the creation of its outpatient Specialized Geriatric Services department. Within this department, the FIT champions the use of CGA in its efforts to provide world class health care for frail older adults.

FIT consists of an interprofessional team that includes primary care physicians specialized in the care of older adults, pharmacists, physiotherapists, occupational therapists, nurses and social workers. FIT's mandate is to clinically assess geriatric clients presenting with acute, complex medical issues, and triage them to avoid unnecessary emergency department (ED) visits and to improve patients' outcomes. A physician provides triage, medical assessment, consultation, treatment, referral to a team of allied health professionals (where appropriate), and linkage back to the referring community physician or other referral source. It is therefore of paramount importance that FIT's patient plans account for potential differences among the viewpoints of patients, community health-care professionals, and the patient's non-professional carers.

Patients included in the present study were referred to the FIT program between 2014 and 2018. Patients underwent a formal CGA; this assessment included identification of patients' goals and achievements. Patients participating in the present study had completed the relevant CGA goals/achievement sections.

In addition to older adults over the age of 65, the present study included middle-aged adults aged 50–64. An analysis of Canadian Health Measures Survey data by Kehler *et al.* estimated an 11.6% prevalence of frailty in the 50–64 age group.⁽¹⁷⁾ The health impact of frailty in younger populations is not well-documented, nor are interventions for improving outcomes across the adult lifespan.

Providence Healthcare's patients were referred to FIT if they met the following clinically assessed frailty criteria:

1. They had experienced a recent loss of (normal) functional ability following a medical or life event, or decline in health; this includes:
 - Functional decline
 - Falls/mobility/gait and balance problems
 - Significant increases in burden on caregivers
 - Incontinence
 - Polypharmacy
 - Visual or hearing impairment
2. They had complex psychosocial needs, including:
 - Changes in cognitive impairment, dementia, confusion, or delirium
 - Depression, mood swings, feelings of isolation
 - Elder abuse
3. They were at high risk for imminent visits to Emergency Departments (ED), hospitalization or admission to long-term care (LTC) facilities due to loss in functional ability.
4. They had the potential for regaining their lost functional ability.

Other criteria for referral included experiencing multiple chronic conditions that required a moderate degree of active medical management or required stabilization such as malnutrition and pain. The study was approved by Unity Health Toronto Research Ethics Board, REB #17-903.

Data Extraction

RA and MR conducted a thematic analysis whereby common themes from patient comments were identified, and if plausible, were then clustered in a process that drew guidance from a process described by Miles *et al.*⁽¹⁸⁾

Data were extracted from patients' individualized care plans by RA, MR, and CFT. Patient's baseline data included:

1. Patient age and medical conditions.
2. Categorization of the broad array of patients' health conditions as defined according to the International Statistical Classification of Diseases and Related Health Problems version 10 (ICD-10) (World Health Organization 2004).
3. Categorization of patients' goals and hopes for improvement, according to the International Classification of Functioning, Disability and Health (ICF). This categorization focused on body structures and functions, activities and participation, and environmental factors (See Appendix A for details of ICF subcategories).
4. Recommendations based on patients' goals and concerns including referrals to other health providers and resources.

Statistical Analyses

Data analysis included frequency analysis (means, medians, standard deviations). All data management and analysis were calculated with R statistical software 3.4.4 (R Foundation for Statistical Computing, Vienna, Austria).

APPENDIX B. Categories for Goals and Concerns

Body Structures and Body Functions

Mental Functions—Sleep, attention, memory, emotion, perceptual functions, thought.

Sensory Functions and Pain—functions of vision, hearing and vestibular functions, taste, touch, smell, proprioception, and the sensation of pain.

Voice and Speech Functions—functions of producing sounds and speech (articulation, fluency, rhythm of speech).

Neuromusculoskeletal and Movement-Related Functions—mobility and stability of bones and joints, muscle power, tone and endurance, involuntary movement reactions, control of voluntary movement, gait pattern.

Other Body Functions—digestive, respiratory, endocrine, urinary.

Activities and Participation

Mobility—changing and maintaining body position, transferring oneself, lifting and carrying objects, fine hand use, hand and arm use, walking and moving around in different locations, moving around using transportation, driving.

General Tasks and Demands—carrying out single or multiple tasks, organizing routines, handling stress.

Self-Care—washing, grooming, toileting, dressing, eating, looking after one's health.

Domestic Life—buying and managing home, shopping and gathering daily necessities, preparing meals, housework, laundry, gardening, pet care, assisting other household members.

Interpersonal Interactions and Relationships—interacting with others appropriately, forming relationships, entering into formal and informal social relationships, creating and maintaining family relationships.

Communication—receiving and producing spoken and non-verbal messages, conversation, using communication devices.

Community, Social, and Civic Life—engaging in associations, recreation and leisure including socializing, religious and spiritual activities.

Environmental Factors

Products and Technology—food, drugs, general and assistive products, technology, design, construction, building, financial, tangible and intangible assets.

Natural Environment and Human-Made Changes to Environment—geography, population, flora and fauna, climate, natural and human-caused events, light, sound, air quality.

Support and Relationships—amount of support provided by family, friends, community members, personal care providers, health professionals, other professionals.

Attitudes—attitudes of family, friends and others, society, societal norms, practices, ideologies.

Services, Systems, and Policies—housing, utilities, communication, transportation, legal, associations/organizations, economic, social security, health, education, labor and employment, political.

APPENDIX C. Medical Conditions of Participants^a

<i>Category</i>	<i>N (%)</i>
Neoplasms: Cancer	11 (14)
Diseases of blood/immune mechanism disorders: Anemia	9 (12)
<i>Endocrine, Nutritional and Metabolic Diseases</i>	
Type 2 Diabetes	22 (28)
Hyperlipidemia	11 (14)
Thyroid dysfunction	8 (10)
Dyslipidemia	7 (9)
Other	12 (15)
Mental Health Disorders: Depression/anxiety	17 (22)
<i>Diseases of the Nervous System</i>	
Alzheimer's disease/dementia	24 (31)
Sleep problems/sleep apnea	7 (9)
Other	7 (9)
<i>Diseases of the Eye/Adnexa</i>	
Glaucoma	5 (6)
Macular degeneration	5 (6)
Diseases of the ear and mastoid process: Hearing decline	7 (9)
<i>Diseases of the Circulatory System</i>	
Hypertension	48 (62)
Cerebrovascular diseases	13 (17)
Coronary artery disease	13 (17)
Atrial fibrillation	12 (15)
Other	19 (24)
Diseases of the respiratory system: COPD	6 (8)
<i>Diseases of the Digestive System</i>	
GERD	6 (8)
Other	7 (9)
<i>Diseases of the Musculoskeletal System and Connective Tissue</i>	
Osteoarthritis	19 (24)
Osteoporosis	9 (12)
Rheumatoid arthritis	5 (6)
Degenerative disc	5 (6)
Other	22 (28)
Diseases of the genitourinary system: Other	6 (8)
<i>Injuries, Poisoning and Certain Other Consequences of External Causes</i>	
Allergy to substance	14 (18)
Fracture	7 (9)
External causes of morbidity and mortality: Falls	7 (9)
<i>Medical Procedures</i>	
Joint replacement/arthroplasty	12 (15)
Eye/cataract surgery	9 (12)
Other	17 (22)

^aConditions recorded by FIT team of participants. Out of 305 participants, 78 had this section filled on their plan. Conditions that had 5 or more participants were included in this table.