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Early Identification of Frailty Predictors in a Vowed Religious Community of Catholic Men: A Strategy for Successful Aging in Place

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Abstract

Background: The population in the United States is aging and experiencing age- and disease-related changes, leading to increased frailty, as well as increased disability, morbidity, and mortality. Timely recognition of these vulnerabilities, and intervention implementation, are crucial to prevent adverse outcomes and to support successful aging in place. **Purpose:** The purpose of this project is to develop and implement a multifaceted assessment process to identify early predictors of frailty among members of a vowed religious community of Catholic men to ultimately support successful aging in place. **Participants:** A single vowed religious community of Catholic men in the United States, living in community and not residing in a skilled nursing facility, were invited to participate. The mean age was 71.7 years old. **Methods:** The overall health and wellbeing of the community, as well as frailty, were assessed using a survey design. The project survey had 113 questions and took 45 minutes to complete. Those with findings requiring further evaluation or intervention received follow-up. Descriptive statistics were used. Qualitative data were synthesized and summarized. **Results:** Using a modified Edmonton Frail Scale, 87.5% were not frail and 11.8% were prefrail or vulnerable to frailty. Participants were overweight or obese (66%), at risk for malnutrition (11.8%), reported dizziness (48%), had difficulty negotiating stairs (45.2%), had fallen (26.5%), and screened positive for fall risk (65.6%). Emotionally related predictors included signs of depression in 51.6 % of participants. Participants also indicated a readiness for change (50%). **Conclusion:** This project creates a unique opportunity to develop new processes that promote successful aging in place such as the implementation of a geriatric assessment tool, with resulting interventions that promote the best possible outcomes for identified frailty predictors.

Key words: older person, vowed religious community, frailty, geriatric assessment, successful aging, aging in place

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Introduction

Older Americans are calling for a shift in the way we think and talk about aging (White House Conference on Healthy Aging, 2015). Rather than focusing on the limitations of aging, older adults want to focus on the opportunities of aging. Older adults are seeking ways to maximize their physical, mental, and social well-being to remain independent and active as they age (White House Conference on Healthy Aging, 2015). Due to their longevity and deep commitment to mission, vowed religious have an opportunity to change attitudes towards aging, recognizing older adults as valuable resources for society. However, religious communities are aging and there are fewer men and women entering vowed religious life. Religious communities are seeking innovative strategies to care for their older persons while also continuing their mission. The early identification of age-related changes and signs of frailty through the utilization of a multifaceted geriatric assessment, can play a significant role in supporting successful aging in place and positively impact health, quality, outcomes and costs for individuals and communities.

Background and Significance

According to the Center for Applied Research in the Apostolate (2017), there has been a steady decrease in the number of priests (37%), religious sisters (72%) and brothers (66%) in the United States since 1970 and there are fewer ordinations (37%) and seminarians (48%) to fill the ranks. The changes in the numbers of religious is in part related to their aging populations. For the year 2016, 15.2% of the American population was over the age of 65; that number is expected to rise to 21.7% by 2040 (US Department of Health and Human Services (US-HHS), 2017). Like the trends in the United States, vowed religious communities and dioceses are projected to experience rapid growth in their older population (Vincent & Velkoff, 2010).

As medical science advances, the aging process occurs over decades with people living longer, influenced by personal practices and biological processes, leading to further age- and health-related changes (Cline, 2014). In the last years of life, a person's utilization of the healthcare system is greatest in older persons, with more than 60% of Medicare beneficiaries having at least three chronic conditions (Fabbri, Zoli, Gonzalez-Freire, Salve, Studenski, & Ferrucci, 2015). The increased prevalence of chronic conditions and age-related changes requires increased numbers of provider visits for illnesses or injuries that may necessitate emergency care, hospitalization, and rehabilitation (Hansen et al., 2017; Fabbri, et al., 2015).

Expected age-related changes include those associated with medication effects (Planton & Edlund, 2009), renal function (Bowling & O'Hare, 2012), vision and hearing, and a decline in the ability to perform activities of daily living (Lorenz, Gooneratne, Cole, Kleban, Kalra, & Richards, 2012; US-HHS, 2017). Many older adults live with a variety of chronic conditions such as diabetes (Germino, 2011; Ligthelm et al., 2012; US-HHS, 2017), chronic kidney disease (Bowling & O'Hare, 2012; Campbell & O'Hare, 2008), hypertension, hyperlipidemia, ischemic heart disease and arthritis (US-HHS, 2017). Regardless of the etiology of the chronic condition, older adults must modify their lifestyles to accommodate these changes; in turn, providers and health care systems must enhance their understanding of and care for older adults (American Geriatrics Society, 2012).

In most religious orders, the need for caregiving of the aging is rapidly increasing. However, the pool of potential caregivers is shrinking, creating new challenges to meet the health and wellness needs of the members, as well as address ministry priorities. The purpose of this project was to develop and implement a multifaceted assessment process to identify early predictors of frailty among members of a vowed religious community of Catholic men, to ultimately support successful aging in place.

Guiding Concepts

Functionality and Frailty

Frailty is a multi-dimensional condition involving interactions between biological, psychological, and social factors that result in a state of higher vulnerability to stressors, due to a loss of physiologic and/or psychologic reserves (Clegg, Young, Iliffe, Rikkert, & Rockwood, 2013; Turner & Clegg, 2014; Gu & Feng, 2015). Frailty provides a risk for adverse health outcomes, disability progression, mortality, and reduces the quality of life among older adults (Gu & Feng, 2015; Samper-Ternet, Reyes-Ortiz, Ottenbacher, & Cano, 2017). Walston et al. (2006, pg. 2) provide a definition for frailty used by geriatricians; it is recognized as "a biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative decline across multiple physiologic systems, and causing vulnerability to adverse outcomes." However, the two most frequently represented definitions of frailty in the literature are the frailty phenotype developed by Fried et al. (2001) and the Frailty Index (FI) developed by Rockwood, Mitnitski, Song, Steen, And Skoog (2006). The frailty phenotype suggests that the five indicators of physical functioning (unintentional weight loss, exhaustion, slow walking speed, low grip strength, and low physical activity) are related to each other in a cycle of frailty. A person with none of the indicators is robust; a person with one or two indicators is pre-frail; and a person with three or more indicators is frail. In contrast, Rockwood's FI comprises an accumulation of deficits that includes chronic medical conditions, disability, and symptoms, where the index is calculated as the proportion of deficits present (Rockwood et al., 2006).

Maintaining functionality as a person ages has important implications for quality of life and independence. A decline in the performance of daily living activities can lead to an increased incidence of chronic diseases, weakness, and frailty (Mello, Engstrom & Alves, 2014). The World Health Organization (2012) refers to frailty as a critical and multifaceted concern that produces considerable strain on families and typically relates to some level of dependence.

The quality of life, social and financial impacts of frailty impact the individual, family and society at large and can be considered a public health problem (Santos-Orlandi, et al., 2017). It is essential to identify those at risk of frailty while they are still living at home (Oubaya, et al., 2017) so that strategies can be implemented, and resources utilized efficiently and effectively to prevent adverse outcomes such as institutionalization, hospitalization, and death (Clarnette, et al., 2015; Fried, Ferrucci, Darer, Williamson, & Anderson, 2004; Rockwood, Mitnitski, Song, Steen, & Skoog, 2006).

Frailty is widespread in community-dwelling aged adults (Chang & Lin, 2016). Prevalence studies regarding frailty have been conducted world-wide and reveal wide variations in the prevalence of frailty (see Table 1). Collard, Boter, Schoevers, and Oude Voshaar (2012) conducted a multinational systematic literature review of 21 articles from North America, Australia, Asia and Europe involving a total of 61,500 community-dwelling older adults (age: > 65 years) and determined the prevalence of frailty and prefrailty to be 9.9 and 44.2%, respectively. In the United States, the prevalence of frailty in those 65 years and older ranges from 6.3% to 15% (Fried et al., 2001; Bandeen-Roche et al., 2015). Of those that screened positive for some level of frailty, 48% were found to be frail and 45.3% were found to be pre-frail (Fried, et al., 2001). The lack of consistency among rates may be attributed to cultural variances, health care system design and the absence of a universal measure or definition. Regardless of the varying prevalence statistics, frailty is a major concern for older adults worldwide, supporting the need for a comprehensive strategy that mitigates precursors to frailty, as well as supporting older people as they age in place.

Frailty has been regarded as manifesting multidimensional features of accelerated decline in cognitive and physical function. This reduction of reserve capacity in musculoskeletal, neurological, nutritional, and aerobic systems, as well as resistance to stressors in the older population, leads older adults to increased risk of disability (Makizako, et al., 2015) and mortality (Dupre, Gu, Warner & Yi, 2009). There are several factors that are thought to be common predictors associated with frailty. These include but are not limited to demographic factors, medical comorbidities, polypharmacy, lifestyle factors and

functional performance. Demographic factors such as advanced age, female gender, low income, low educational level, and being a member of certain racial/ethnic minorities are associated with higher rates of frailty (O'Caoimh et al., 2015; Bandeen-Roche et al., 2015; Carneiro et al., 2016; Fried et al., 2004).

Common predictors of frailty include lack of caregiver availability, self-reported health status including quality of life and recent healthcare utilization (O'Caoimh et al., 2015; Carneiro et al., 2016; Fried et al., 2004). The presence of multiple chronic conditions such as diabetes mellitus, heart disease, depression and geriatric syndromes such as malnutrition, osteoporosis, sarcopenia and falls are associated with frailty in older adults (O'Caoimh et al., 2015; Yang & Gu, 2016; Bandeen-Roche et al., 2015; Carneiro et al., 2016; Fried et al., 2004; Ma, Tang, Zhang, Sun, Li, & Chan, 2018). Lifestyle factors associated with frailty include polypharmacy (five or more medications), poor life-style, visual/hearing impairment, daytime sleeping, current alcohol consumption and less physical activity (Yang & Gu, 2016; Ma et al., 2018; Turner & Clegg, 2014; Alessi, et al., 2008). Finally, cognitive and functional performance are considered the strongest risk factors for frailty as evidenced by impairment in activities of daily living (Ma et al., 2018; Yang & Gu, 2016; O'Caoimh et al., 2015; Lustosa, Marra, Pessanha, Freitas, & Guedes, 2013). The Study of Osteoporotic Fractures (SOF) Frailty Index identifies frail (i.e., physical aspect) older people based on the assessment of three features: weight loss, inability to rise from a chair five times without using arms, and reduced energy level (Cable, Hiyoshi, Kondo, Aida, Sjoqvist, & Hondo, 2018).

Older people with frailty or frailty predictors are at significant risk of sudden and dramatic changes in their physical and mental well-being after a small health event, such as a minor infection or new medication (Turner & Clegg, 2014). Age-related biological changes increase the danger of malnutrition in older people (Kuczmarski & Weddle, 2005). Malnutrition is critical in the development of sarcopenia and physical impairment (Andre, Dumavibhat, Ngatu, Eitoku, Hirota, & Suganuma, 2013); both conditions are substantial elements of frailty syndrome. Fried and colleagues (2001), reported that compared to their robust counterparts, frail older people had a six-fold increased risk of death within

three years, a fivefold increase in the risk of becoming dependent, and a twofold increase in the risk of falls or hospital admission. Similarly, Rockwood, Stadnyk, MacKnight, McDowell, Hebert, and Hogan (1999) reported a nine-fold increase in the risk for nursing home admission among frail older adults.

Frailty is a complex phenomenon with numerous interrelated components. These components comprise individual-level situations (e.g., personality traits, coping strategies, resilience), environmental influences (e.g., caregivers, neighborhood, social participation), and macro-level components (e.g., health literacy, adequate financial compensation) (Dury, et al., 2018). In addition, factors such as the person's preadmission condition, iatrogenic effects of treatment, prolonged bed rest and comorbidities contribute to negative outcomes (Harper & Lyles 1988; Hoenig & Rubenstein 1991; Mobily & Skemp Kelley 1991; Sager & Rudberg 1998). More severe physical frailty is independently associated with falls, functional limitations, immobility, cognitive impairment, delirium, and comorbidities such as diabetes, stroke, and heart disease (Lee, Auyeung, Leung, Kwok, Leung, & Woo, 2011; Wu, Smit, Xue, & Odden, 2017; Turner & Clegg, 2014). Older people with frailty are also at increased longer-term risk of disability, care home admission and mortality (Turner & Clegg, 2014).

Successful Aging Model

Aging is often seen as a period of endings, defined by loss and decline, for which an individual and society must adapt and adjust (Phillipson, 1998). Aging is a part of life; however, there is an increasing desire among older adults to age successfully. The concept of successful aging, as a potentially inherent quality of old age, is a newer concept (Blazer, 2006). In healthcare, success relates to the ability of a provider to effectively treat an illness or disease so that function is maximized (Meyer, 2009). However, successful aging is more complex and multifaceted.

Neugarten (1972) identified personality as a fundamental component of successful aging. Personality constitutes coping style, adaptability, life expectations, as well as income, health, social interactions, freedoms, and constraints (Neugarten, 1972). According to Rowe and Kahn (1987), a person

who has aged successfully would be in reasonably good health, cognitively intact, physically active, and socially engaged in life. These concepts were further elucidated to develop the most popular model of successful aging. This model defined three domains of successful aging: the reduction of disease and disability, the maintenance of high cognitive and physical functions, and active engagement in life (Rowe & Kahn, 1997, Rowe & Kahn 1998). Rowe and Kahn (1987) also discussed the role of individual choices and effort in achieving these outcomes.

Studies using Rowe and Kahn's model of successful aging have found that psychosocial variables, not included in the original model, play a vital role in how older adults view successful aging and may minimize the importance of age-related variables such as medical illness or physical declines (Meyer, 2009). Post (2003) and other researchers posit that spirituality, or attaining a sense of purpose and meaning, is a fourth domain of successful aging that needs to be added to Rowe and Kahn's model (Rowe & Kahn, 1997; Rowe & Kahn, 1998; Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002). Spiritual well-being is thought to be a fundamental need that is affirming and nurturing to self as well as others (Post, 2003). Numerous studies have revealed a link between spirituality and good health, suggesting that effective partnerships between health professionals and religious communities might be enhanced if spirituality were included in a broader model of successful aging (Crowther et al., 2002; Post, 2003; Hilton, Kopera-Frye, & Krave, 2009). The model of successful aging is shown in Figure 1.

In religious communities, the goal of successful aging is to promote quality of life and well-being for those who have dedicated their lives to the service of others. Recognizing the importance of each of the four dimensions of successful aging, efforts are made to create healthy environments that support independence, choice, privacy, and dignity while also seeking opportunities for the religious to continue to minister in some capacity. Efforts to support the fours dimensions of successful aging are multifaceted and well matched with the principles of care coordination.

Aging In Place

Among those ages 65—74, about 98% of older persons reside in a traditional community setting (US HHS, 2016). According to a survey from the American Association for Retired Persons (AARP), most people age 45 and older want to remain in their current residence for as long as possible (AARP, 2000). As people age, over 90% desire to remain in their current residence (AARP, 2000). Although most desire to age in place, many challenges and barriers are present such as physical mobility, transportation limitation, isolation related loneliness, depression, increasing frailty, housing quality, finances, and caregiving resources (Benefield & Holtzclaw, 2014a). Health care providers and systems are integral in developing strategies to negotiate the complexities associated with aging in place (Benefield & Holtzclaw, 2014b).

Transtheoretical Model

The Transtheoretical Model of Change (TMC) is a model for intentional change, providing a foundation for developing meaningful interventions to promote health behavior change (Prochaska & DiClemente, 1983; Prochaska, DiClemente, & Norcross, 1992; Prochaska & Velicer, 1997). The TCM describes change as a progression through five stages: precontemplation, contemplation, preparation, action and maintenance (Prochaska & DiClemente, 1983).

Precontemplation is the stage in which an individual is not planning to make a change in the next six months. Individuals in this stage are either poorly informed of the consequences of their choices or they have had multiple unsuccessful attempts that have left them discouraged. Individuals in the precontemplation stage generally avoid reading, talking or thinking about their high-risk behaviors (Prochaska & DiClemente, 1983).

The contemplation stage is the point at which individuals begin to become more aware of the consequences of their behaviors, as well as the pros and cons of changing. This awareness can produce profound ambivalence, leading to prolonged procrastination (Prochaska & DiClemente, 1983). An

individual in the contemplation stage is not ready to act; therefore, interventions must be tailored toward meeting any knowledge deficit and supporting self-efficacy.

Preparation is the stage in which people have a plan of action. This plan would be executed within the next month. This stage is followed by the action stage of the TMC. In the action stage, individuals have made a specific modification in their lifestyle that is sufficient to reduce disease risk. During the action stage, strategies must be in place to assess for and mitigate relapse (Prochaska & DiClemente, 1983). The maintenance stage is the final stage and occurs after the behavior change has been integrated into the individual's lifestyle for at least six months. In this stage, individuals are increasingly more self-confident they can continue their change and not relapse (Prochaska & DiClemente, 1983).

The TMC has been used extensively in health and social sciences. Assessing an individual's readiness for change is imperative so that interventions can be customized. Developing an individualized plan with interventions tailored to the persons readiness for a lifestyle change was a key component of this project. The TMC provides a valuable framework to assess and approach change in those who have been identified with frailty predictors. In collaboration with Provincial leadership, and use of appropriate tools, the vowed religious men in this community can be supported in sustainable health and wellbeing behaviors.

Assessment of Age-Related Changes and Frailty

Assessing risk and disability relates to health promotion, as well as disease and injury prevention. A Profile of Older Americans: 2017 was developed by the Administration on Aging (AoA), Administration for Community Living, U.S. Department of Health and Human Services to assist with their advocacy efforts to support older, noninstitutionalized adults. The intention is to encourage the development of a responsive system of family and community-based services throughout the country (U.S., HHS, 2017).

Frailty might not be apparent unless its indicators are actively assessed in an individual. Many people with multiple long-term conditions will also have frailty which may be overlooked if the focus is disease-based, with emphasis on long-term conditions such as diabetes or heart failure (Turner & Clegg, 2014). The British Geriatric Society recommends that all encounters between health and social care staff and older people include an assessment for frailty as this will affect the way health care is organized for that person (Turner & Clegg, 2014). Recognizing frailty in an older person can direct further assessments and diagnosis of an underlying cause, or combination of causes, for a sudden deterioration in health (Turner & Clegg, 2014). This recognition may then enable provision of appropriate support to allow an older person with frailty predictors to remain at home and prevent an avoidable and potentially disruptive visit to the emergency department.

Frailty can be recognized in numerous ways. A comprehensive, multidimensional assessment can provide an objective, quantifiable evaluation of overall health. Integrating assessments of physical health, cognitive health, mental health, spiritual health, social adaptability, and environmental conditions provides a comprehensive appraisal. Specific elements of physical health that are evaluated include nutrition, vision, hearing, fecal and urinary continence, and balance. In a routine patient encounter, gait speed and ability to rise from a chair can be easily assessed. In addition, screening tools such as the Program of Research on Integration of Services for the Maintenance of Autonomy (PRISMA- 7) survey (Herbert, Veil, Raiche, Dubois, Dubuc, & Tousignant, 2008) or Edmonton Frail Scale (Gordon, Lorilla, & Lehman, 2012; Partridge, Harari, & Dhesi, 2012) can be useful to assess the presence of frailty. A geriatric assessment aids in the diagnosis of medical conditions; development of treatment and follow-up plans; coordination of management of care; and evaluation of long-term care needs and optimal placement. The geriatric assessment differs from a standard medical evaluation by including nonmedical domains; by emphasizing functional capacity and quality of life; and, often, by incorporating a multidisciplinary team

Krogsboll, Jorgensen, & Gotzsche, 2019; Eamer, et al., 2018). It usually yields a complete and more relevant list of medical problems, functional problems, and psychosocial issues.

Purpose

The purpose of this project is to develop and implement a multifaceted assessment process to identify early predictors of frailty among members of a vowed religious community of Catholic men to ultimately support successful aging in place. Early identification of frailty can be valuable in preventing negative outcomes associated with frailty such as falls, malnutrition, altered mobility, hospitalization and need for long-term care. Additionally, this project intended to identify participants that are successfully aging in place. This information will be useful in detecting intrinsic and extrinsic behaviours, actions and/or supports that promote successful aging without relocation so that the vowed religious may be integrated into a Province-wide strategy to support aging among their membership.

Survey Instruments

Thirteen survey instruments were used to describe the overall health and wellbeing of this population. To assess the population's general health status and overall frailty, the Short form-36 Item Assessment (SF-36), and the Edmonton Frail Scale (EFS) were used. To assess specific aspects of aging and frailty predictors, eleven tools were used in total or in part. These tools included the Alcohol Use Disorders Identification Test (AUDIT-C), Risk Instrument for Screening in the Community Cari Instrument, Health Care Empowerment Inventory (HCEI), Health Literacy Questionnaire (HLQ), Geriatric Depression Scale, Hearing Handicap Inventory for Elderly: Screening version (HHIE-S), Mini-Nutritional Assessment Short-form (MNS-SF), Program of Research on Integration of Services for the Maintenance of Autonomy (PRISMA-7), Short Emergency Geriatric Assessment (SEGA)—modified, and The Pittsburgh Sleep Quality Index (PSQI). Two tools that have been used internally by specific religious groups were used in part: the Health Questionnaire for Local Senior Priests-2018 (HQLSP), and the Essential Documents of the Province. The reliability and validity of all thirteen tools is outlined in Table 2.

The frailty predictors are associated with age-related changes, general health, functional performance, demographics, lifestyle, and psychosocial health. The age-related predictors that were assessed in this project include energy level, nutritional status, incontinence, hearing and vision. The predictors assessed in this project associated with general health included chronic or comorbid conditions such as diabetes, kidney disease, hypertension, and hyperlipidemia, as well as polypharmacy (≥5 medications) and self-reported health rating. Cognitive function, ease of performing activities of daily living and mobility were assessed as predictors of functional performance. Demographic predictors included age, gender, weight, and advanced care planning. Lifestyle related predictors included alcohol use, nicotine use, health literacy, physical activity, sleep patterns, and health promotion behaviors such as regular primary care provider and dental provider visits. Psychosocial health related predictors included caregiver availability, emotional wellbeing, social participation/interaction and spiritual wellbeing.

For the purposes of this project, the SF-36 was used in total as a general assessment of health and well-being among the men in the vowed religious community. In addition, questions within the SF-36 match those in other scales and were used to reduce duplication in questioning.

For the purposes of this project, the performance-based tests related to cognition and balance and mobility were not assessed as part of the EFS. However, the other domains were included as questions in the self-report survey.

Table 3—Frailty Predictors, Instruments and Sample Questions outlines the frailty predictors by domain that were assessed (age-related changes, general health, functional performance, demographics, and psychosocial health) and the concepts within each domain. This table also describes the number of questions within each concept, as well as selected sample questions. Finally, this table lists the origin of the questions used to assess each concept.

Methods

This project is a descriptive analysis using a survey design to assess the overall health and well-being of a vowed religious community of Catholic men, with specific focus on frailty. The inclusion criteria included vowed members of this religious order associated with a single Province in the United States. The exclusion criteria included vowed members of the religious community currently residing in a skilled nursing facility. All the members of the vowed religious community that met the inclusion criteria (n=55) were invited to participate and received a survey packet. The survey packet included a cover letter from their Provincial Superior, the assessment survey, and the consent and participant information document. The assessment survey had 113 questions comprised of select questions from each of the 13 surveys described and took approximately 45 minutes to complete. Completion and return of the survey packet signified consent to participate in the project. All aspects of this project were completed under strict anonymity with the project director as the only person that knew or had access to the document matching participant names and survey numbers.

Follow up was made with those participants found to have findings that required further evaluation or intervention. A pre-established plan was developed to determine the presence of significant findings. For the purposes of this project, significant findings were defined as those participant responses that necessitate some vital intervention to decrease risks for frailty or improve general health and wellbeing. The method for determination of the significant findings is found in Table 4. This follow-up intervention included education materials as well as referral to health care providers and resources within the religious community.

Participants determined to be at imminent risk were invited to complete a second survey based on the Transtheoretical Model assessing participants' readiness and confidence to make a change in their health and well-being behaviors. After presenting deidentified aggregate data to the Provincial Superior

and Provincial Council, the Province leadership were queried regarding their readiness and confidence in making programmatic changes in the health and well-being of the Province.

Ethical Considerations

There were no foreseeable risks or penalties associated with this project. The data collected in this project may not have benefited the participant directly; however, the information learned from this research may be helpful to others in the future. The data provided by the participants was used to understand the general health and well-being of men in this vowed religious community and provide a foundation for future planning to support the health and age-related changes that are naturally occurring among this population. All participants were provided informed consent and an opportunity to ask questions so that they may make an informed decision about their voluntary participation. The participants' interests were the priority over those of science or of society.

Although absolute confidentiality cannot be guaranteed, confidentiality was protected to the extent permitted by law. All surveys were completely voluntary, including identifying information. This survey was conducted confidentially where the participant is identifiable only by a unique code number. Any inclusion of identifying information was completely voluntary. The project director has retained the only record matching the unique code number and the participant. This document is kept in a secure location. The paper copy of the survey was returned to a secure post office box accessed exclusively by the project director. The faculty advisors, collaborators, Provincial Superior, nor any members of the Province have access to the completed surveys. Access to this data will only be permitted after the express written permission of the participant. The de-identified data were entered into a database and stored at the project director's place of employment on Microsoft OneDrive. The project sponsor and the employer's Institutional Review Board may request access to these records to ensure that Human Subjects Protections standards were upheld.

This project was reviewed by the Institutional Review Board (IRB) in accordance with the Common Rule and any other governing regulations. IRB approval was obtained November 6, 2018. The intention of this review was to ensure that Human Protections were appropriately addressed. Site specific approval was sought and obtained from the leadership of the religious order where the project was conducted.

Stakeholders

Implementing a practice-based project is complex regardless of project design. For successful implementation of this project, stakeholders were identified within the religious community of study. At the onset, the Director of Senior Care and Province Healthcare Consultant were engaged in project development. Once a basic framework was developed, the Provincial Superior and Provincial Council were invited into the discussions. As the highest authorities in this vowed religious community, the Provincial Superior and Provincial Council have a vested interest in and considerable influence on the physical, emotional and spiritual wellbeing of its members. As such, the Provincial Superior was instrumental in crafting the informed consent, survey content, and supporting documents included in the mailed survey packet to address their primary concern of privacy. The Project Director has been serving as an advance practice nurse consultant to this vowed religious community for five years; her role as a trusted member in their ministry was invaluable. The relationships forged during project development were essential to the level of participation, engagement and transparency of the survey.

Data Analysis

Descriptive statistics were used for categorical and continuous variables. The AUDIT-C and Edmonton Frail Scale (EFS) were scored as directed. Qualitative data was synthesized and summarized. Univariate logistic regression was used to explore associations between predictors of frailty.

Results

Participant Characteristics

A total of 55 people from a single order of vowed religious Catholic men residing in religious communities across the United States and the world were invited to participate in this project. The invited participants range in age from 33 to 98 years with a mean of 70 and median of 72.4 years. Of those participating in the project, the mean age was 71.7 with a median age of 75.5 years. All the participants are living in the community with other members of this religious order. These men have all taken a vow of poverty, chastity, and obedience. Consequently, all their personal expenses are covered by the order. Healthcare expenses are covered with Medicaid, Medicare or out of pocket payments. All participants live in a community that provides meal preparation and housekeeping services.

Of the 55 people invited to attend, 63.6% returned their surveys. Of those that returned the survey (n=35), two were returned but did not consent to participant. The sample size for the project was 33. All domestic communities were represented with return rates between 33% and 84.6%. Participants were given the opportunity to receive follow-up from the project director. Follow-up was requested from 83.9% of the participants.

Frailty Findings

The Edmonton Frailty Score was modified to exclude the two physical performance-based measures. Of the 30 participants with complete data, 87.5% were not frail and 11.8% were prefrail or vulnerable to frailty. Compared to research in the United States, these data are better than that of the general population.

When interpreting these data, it is important to consider the impact of the inclusion/exclusion criteria for participation, as well as the potential for social desirability bias. Social desirability bias is described as a desire for participants to respond in a way that is congruent with social norms so that they

present themselves in the best possible light (Bowling, 2005). This type of bias is also attributed to an uncertain willingness to disclose sensitive information (Bowling, 2005).

Successful Aging

Engage in active life.

The ability to engage in an active life requires energy. When asked about being full of pep, 23.3% (7 of 30) of participants reported being full of pep a little or some of the time. Most of the participants reported some lack of energy (28 of 30, 93.3%) with eight of 30 (26.6%) having a lot of energy only some of the time (7 of 30) or a little of the time (1 of 30). Most participants reported feeling worn out a little or some of the time (23 of 31, 74.2%). When asked about being tired, most reported some degree of tiredness (29 of 31, 93.5%) with three of 31 (9.7%) being tired a good bit of the time and one of 31 (3.2%) being tired most of the time.

Minimize risk and disability.

When applicable, the results from this project were compared with the Profile of Older Americans: 2017 in Table 5. In the areas of hearing, vision, cognition, ambulation and self-care, the vowed religious community's difficulty or disability scores were higher by 8.6% to 44%. Independent living scores were less by 5.6%; however, that could be attributed to the structure of community which includes meal preparation and housekeeping services. In the areas of vaccination and physical activity, the vowed community nearly met or exceeded the findings described in the study profiling older Americans (2017). Regarding physical activity, the data from the vowed religious were not differentiated by age as in the profile of older Americans study; thus, comparisons are difficult. However, considering the mean age (70 years old) of the vowed religious community, these data appear comparable.

Other factors assessed in this project, related to risk and disability, included medication management, alcohol use and routine visits to their primary care provider and dentist. Participants reported minimal issues with medication management and only six of 29 (20.7%) reported taking five or

more prescription medications daily. Regular assessments by a trusted primary care provider and dentist are foundational to the early identification of age- and disease-related changes that can impact quality of life and overall wellbeing. Of the participants, most (24 of 31, 77.4%) had received a physical examination with their primary care provider in the last 12 months. The remainder (7 of 31, 22.6%) either do not have a primary care provider (n=1) or have not been to the doctor in the last 1-2 years (n=6). Most participants (28 of 31, 90.3%) have had a dental examination in the last 6 months. The remainder (3 of 31, 9.7%) either do not have a dentist (n=2) or have not been to the dentist in the last year (n=1).

Maximize physical and mental abilities.

Maximizing physical and mental abilities is key as all individuals experience some age- and disease related changes. Early identification and intervention of issues is key to mitigate the sequalae of these changes. Several factors were compared to the Profile of Older Americans: 2017; self-assessment of health, chronic conditions, and body mass index can be viewed in Table 6. When comparing self-assessment of health, the rates are comparable. However, since this project did not assess actual ages but rather age ranges, these data only provide a rough comparison. The rate of chronic conditions in this population is less than those that participated in the 2017 Profile of Older Americans survey except for the frequency of arthritis. Notably, the rate of ischemic heart disease in the vowed religious community was nearly 20% less than that of those in the 2017 Profile of Older Americans survey. When comparing the two groups regarding body mass index, two-thirds (66%) of participants were either overweight or obese.

Additional physically-based measures included: nutritional status, mobility, alcohol use, and sleep patterns. The MNA-SF was used to assess nutritional status. Of 32 participants screened, 87% were found to have a normal nutritional status; 11.8% were at risk for malnutrition, and none were considered malnourished.

Mobility was found to be a significant concern for the participants. Participants were asked eight questions regarding aspects of safe mobility. Activities that increase a risk for impaired mobility include recent history of dizziness, difficulty with walking or balance, and difficulty negotiating stairs. Of 33 participants, 48% reported having dizziness in the past 6-12 months and 45.2% reported having some difficulty getting up or down stairs. Many (46.9%) of the participants reported having difficulty with walking or balance; however, very few (9%) reported using any type of assistive device to ambulate. Of 32 participants, 26.5% reported having a fall in the past 6 to 12 months; most did not require much, if any assistance after falling. Participants reported being worried about falling (28.2%, n=32). Many participants screened positive for fall risk (65.6%, n=32) requiring further evaluation.

Alcohol use and misuse are associated with high-risk behaviors and increased injuries. In addition to an increased risk of injury, alcohol is metabolized more slowly, therefore increasing the risk of liver damage. There are also concerns for medication interactions. Alcohol use and misuse were assessed using the AUDIT-C. Of 31 participants, 54.8% had normal alcohol consumption, 25.8% had alcohol misuse, and 6.5% had alcohol misuse with liver damage. The frequency of drinking a standard alcohol containing beverage varied with 29% drinking monthly or less, 14.7% drinking 2 to 4 times a month, and 25.8% drinking 4 or more times a week. On a typical day, most (66.7%, n=30) drink 1 to 2 standard alcohol containing beverages. Data is conflicting as to how the rate of alcohol use compares with the general population of older people. Alcohol consumption decreases with increasing age (Lal & Pattanayak, 2017). Studies have shown that about 10%--15% of older adults in primary care and as many as 30% of hospitalized older adults have alcohol and drug use problems (Oslin, 2004; Caputo, Vignoli, Leggio, Addolorato, Zoli, & Bernardi, 2012). However, alcohol and drug use are likely underreported in this population.

Participants reported that their sleep is often interrupted, waking in the middle of the night (39.4%, n=33) or having to use the bathroom (57.6%, n=33) three or more times a week. Only 12%

(n=33) reported using a sleep aide three or more times a week. Despite the frequent nighttime wakefulness, all participants (n=33) rated their sleep as very good or fairly good.

The emotional health of some of the participants was concerning because of their survey responses. Of 33 participants, 9.1% reported they worried about their mood, and 18.2% reported that they often feel sad or depressed. Some (19.3%, n=32) participants reported feeling so down in the dumps that nothing could cheer them up: a little of the time (n=5), most of the time (n=1). More (48.4%, n=31) reported feeling downhearted and blue none of the time; however, 35.5% (11 of 31) reported these feelings a little of the time and 16.1% (5 of 31) reported these feelings some of the time. When asked about being nervous, 41.9% (13 of 31) reported being nervous; a little of the time (n=6), some of the time (n=5), a good bit of the time (n=2). Participants reported that their physical or emotional health interferes with normal social activities (37.6%, n=32). However, 80.7% (n=31) reported that they are happy all or most of the time; one person reported that he was only happy some of the time.

Maximize positive spirituality.

The role of spiritualty in overall health and wellbeing is clear. The spirituality of members of a vowed religious community were expected to be maximized already. However, the data revealed opportunities for enhancement. As expected, most participants felt that they were able to develop and grow their prayer life (84.8%, n=33) and avail themselves of spiritual direction, retreats, and other activities to support continued development of their prayer life (93.8%, n=33). Two-thirds of participants reported that their continuing education needs are being met. Most (90.9%, n=33) participants reported they were able to develop and maintain relationships with family and friends. Participants reported that they were able to develop and grow their personal interests and hobbies (72.7%, n=33); however, only 53.1% (n=32) felt supported in his efforts to grow in these areas.

Readiness for Change

Assessing a person's readiness for change, along with predictors for frailty, provides insight regarding interventions and approaches that might be helpful to improve the participants' health and wellbeing. The assessment of change readiness also helps guide efforts to mitigate the sequalae of frailty. When asked to indicate their readiness to make a change or improvement in their health and wellbeing, participants (n=26) reported being in the following stages of change according to the TMC: maintenance (19.2%), action (3.8%), planning (7.7%), contemplative (38.5%) and precomtemplative (30.8%) stages.

A variety of barriers to making a change related to their health and wellbeing were shared. These barriers also reflect some of the findings in the quantitative portions of the survey. Age-related changes such as hearing, and energy levels were reported. Other barriers include scheduling, time constraints, effort, will power and procrastination.

After presenting the findings of this project to The Provincial and Provincial Council, they were queried about their readiness and confidence in making systemic, programmatic changes in the health and wellbeing of the Province. The feedback the project received was first of gratitude. This project was the first opportunity for the membership of this vowed religious community to speak about topics such as these.

Discussion

The culture of a religious community can be discussed from the perspective of the individual, the local community, and the Province. Each contribute to the overall approach to health and wellbeing, as well as provide context for developing an improvement plan. For many vowed religious, their call to serve others through their ministries is often prioritized over their own needs. Many neglect their own needs or exhibit an unhealthy denial of their own diminishment or strategies to mitigate it. Additionally, many vowed religious have difficulty being self-advocates (personal communication with Province leaders, multiple occasions).

The culture in the local communities is undoubtedly influenced by the actions of the individual. Those in local leadership have self-identified that they lack the skills to manage elders and their complex needs. Many of these leaders, as well as their community members, are unaware of the available resources or how to respond to elders requiring care. As the Province ages and there is a reduction in numbers and energy levels, there is increased difficulty in managing the demands of the order's ministry mission when there are so many health maintenance issues. The ability of the local community to provide the necessary support will vary, based on the community members and the needs of the individual requiring assistance. Although good hearted, many community members lack the necessary knowledge, skills, and abilities, to assist individuals through the complexities of their health needs. This is not only detrimental to the individual requiring assistance but also the overall health and wellbeing of the others in the community, as well as the Province (personal communication with Province leaders, multiple occasions).

Historically, in the Province, the roles associated with caregiving were filled solely by vowed religious. Under the current constraints, this is no longer possible. There is a desire to be more proactive rather than reactive, to support the general health and wellbeing of the individual religious, as well as the community at large (personal communication with Province leaders, multiple occasions).

Implications for Practice

The results from this survey provide a number of opportunities for practice. The participants have clearly spoken not only to their needs but also to their readiness to change. These men are challenged with expected age-related changes associated with mood, hearing, and mobility (physical activity, balance, ambulation). The implementation of interventions focused on the individual are key. In local communities, there is a need for health coaching related to general health topics, first aid, and response strategies to urgent/emergent concerns. However, due to the community structure in which these men function, targeted interventions in the communities, as well as guidance from the Provincial

and Provincial Council, could stimulate a paradigm shift from one of neglect and unhealthy denial to one of concern, support, and health. See Table 7 for a description of proposed interventions based on priority needs.

Implications for Future Study

The purpose of this project was to develop and implement a multifaceted assessment process to identify early predictors of frailty among members of a vowed religious community of Catholic men to support successful aging in place. The survey included numerous measures that were not included in the analysis due to the project's focus on frailty; consequently, those measures will be addressed in later initiatives. There are many opportunities for continued inquiry. Further evaluation of health outcomes related to physical/emotional changes, functional outcomes, service quality outcomes and financial outcomes would provide additional information regarding the individualized, therapeutic interventions implemented in this project (Coombs, 2006).

Conclusion

This project yielded valuable data related to the future of the men in this vowed religious community. As the first query of the health and wellbeing of the men in this community, multiple areas for potential intervention were identified. It is anticipated that multilevel, targeted interventions with individuals, local communities, and Provincial leaders will result in improved age- and disease-related outcomes. It is possible that findings from this project may not only guide other vowed religious communities but other populations where residents live within a community to pursue similar assessments and interventions. There are many similarities between vowed religious communities and those communities designed for the aging. Regardless of structure, it is vital that the specific needs of an aging population be assessed, respected, and addressed to promote successful aging.

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Table 1

Prevalence of Frailty of Those Over Age 65 Years

Country	Frailty	Pre-frailty	Reference
United States	6.3—15%	--	Bandeen-Roche et al., 2015
	48%	45.3%	Fried et al., 2001
	53.1%	9.8%	Espinoza et al., 2010
Canada	7.4%	49.7%	Song et al., 2010
Europe (multinational)	17%	42.3%	Santos-Eggimann, et al., 2009
	27%	51%	Kaiser, et al., 2010
Australia	15.2%	46.2%	Hyde et al., 2010
Asia (Taiwan)	35%	19.8%	Chang et al., 2014
Multinational (North America, Australia, Asia & Europe)	9.9%	44.2%	Collard, et al., 2012

Table 2

Description of Tools Used in Final Survey

	Description	Psychometrics

The Alcohol Use Disorders Identification Test (AUDIT-C)	The Alcohol Use Disorders Identification Test (AUDIT-C) is a 3-item alcohol screen that was developed to identify people with recent heavy drinking, as well as alcohol dependence (Bradley, Bush, McDonell, Malone, and Fihn, 1998). The AUDIT-C is a modified version of the 10 question AUDIT instrument (Bush, et al., 1998).
	
	This tool was used in its entirety in this project and recommended scoring was used.
		Cutoff score ≥3 of 12
		• Sensitivity
		  ○ Patients with active alcohol abuse or dependence—90%
		  ○ Heavy drinking—98% (specificity 60%)
		Cutoff Score ≥4 of 12
		• Sensitivity—86%
		• Specificity—72%%
		(Bush et al., 1998)
		
		AUDIT tool compared to provider recognition
		Sensitivity
		• AUDIT tool—96%
		• Provider recognition—44%
		Specificity
		• AUDIT tool—96%
		• Provider recognition—99%
		(Isaacson, Butler, Zacharke, & Tzelepis, 1994)

Risk Instrument for Screening in the Community (RISC) Cari Instrument	The RISC instrument, originally called the Community Assessment of Risk Screening Tool or CARST, is an instrument for predicting risk of adverse outcomes in community dwelling older adults. The instrument takes 2—5 minutes to complete (O'Caoimh et al., 2012; O'Caoimh et al., 2015). This tool was used in part; therefore, recommended scoring could not be used.	Inter-rater reliability (Fleiss' Kappa = 0.86-1.0) Internal consistency (Cronbach's alpha = 0.94) (O'Caoimh et al., 2012)

Edmonton Frail Scale	The Edmonton Frail Scale is a brief assessment tool that can be easily integrated into any routine provider exam to identify signs of frailty and provide proactive care. The EFS assesses ten domains. Performance-based testing is used to assess domains associated with cognitive impairment, balance, and mobility. Additional domains include: health attitudes, functional independence, social support, medication use, nutrition, mood, continence, burden of medical illness and quality of life (Rolfson, Majumdar, Taher, & Tsuyuki, 2000). This instrument is in the public domain. This tool was used in part; therefore, recommended scoring could not be used.	Internal consistency: Crohnbach's coefficient=0.62 Inter-rater reliability: Kappa coefficient=0.77 (Rolfson et al., 2006) Predictive validity: mortality, institutionalization/Cox's proportional hazards model; postoperative complications/ logistic regression model (Armstrong et al., 2010) Concurrent validity: comorbidity, MMSE, incontinence, depression /logistic regression (Chang et al., 2011) Construct validity: Barthel Index, Rolfson and colleagues' GCIF/Pearson correlation (Rolfson et al., 2006); MMSE score & the Functional independence measure (Fabricio-Wehbe et al., 2009)
Health Care Empowerment Inventory (HCEI)	The HCEI allows a patient to provide an evaluation of their involvement in their healthcare. Two domains are explored: (1) ICCE—informed, committed, collaborative, engaged and (2) TU—Tolerance of uncertainty (Johnson, Rose, Dilworth, & Neilands, 2012). This tool was used in part; therefore, recommended scoring could not be used.	Internal reliability (HCCE-ICCE)—p=0.78, 95% CI=0.73, 0.83 Internal reliability (HCE-TU)—p=0.86, 95% CI=0.82, 0.89 Only one study identified (Johnson et al., 2012)
Health Literacy Questionnaire (HLQ)	The HLQ measures nine independent domains of health literacy to capture the lived experiences of people attempting to understand, access and use health information and services (Hawkins, Gill, Batterham, Elsworth, & Osborne, 2017). This tool was used in part; therefore, recommended scoring could not be used.	Composite Reliability 0.77-0.90 (Osborne, et al., 2013)

Geriatric Depression Scale	The Geriatric Depression Scale (GDS) is a 30-item or 15-item questionnaire in which participants are asked to respond by answering yes or no about how they felt over the past week (Yesavage et al., 1983). This shorter form can be completed in approximately 5 to 7 minutes, making it ideal for those easily fatigued or are limited in their ability to concentrate for longer periods of time. The GDS may be used with healthy, medically ill and mild to moderately cognitively impaired older adults. It has been extensively used in community, acute care, and long-term care settings (D'Ath, Katona, Mullan, Evans, & Katona, 1994; Marwijk, Wallace, de Bock, Hermans, Kaptein, & Mulder, 1995). This instrument is in the public domain. This tool was used in part; therefore, recommended scoring could not be used.	Sensitivity—92% Specificity—89% In a validation study comparing the Long and Short Forms of the GDS for self-rating of symptoms of depression, both were successful in differentiating depressed from non-depressed adults with a high correlation ($r = 0.84$, $p < .001$) (Sheikh & Yesavage, 1986).

Hearing Handicap Inventory for Elderly: Screening version (HHIE-S)	The Hearing Handicap Inventory for the Elderly Screening Version (HHIE-S) is a 10-item screening tool developed to assess how an individual perceives the social and emotional effects of hearing loss. The higher the HHIE-S score, the greater the handicapping effect of a hearing impairment (Ventry & Weinstein, 1983; Newman, Jacobson, Hug, Weinstein, & Malinoff, 1991; U.S. Preventive Services Task Force, 2012).
	Permission was granted by The Hartford Institute for Geriatric Nursing, New York University, Rory Meyers College of Nursing to reproduce, post, download, and/or distribute, this material regarding the HHIE-S for not-for-profit educational purposes (McCabe, 2019).
	
	This tool was used in part; therefore, recommended scoring could not be used.
		Internal consistency reliability (Cronbach's alpha)—0.87
		
		Test-retest reliability—0.84 ($P< .0001$).
		
		Compared to audiogram-defined hearing loss has been
		• Cutoff score >10
		  ○ Sensitivity—63-80%
		  ○ Specificity—67%-77%
		• Cutoff Score >24
		  ○ Sensitivity—24-42%
		  ○ Specificity—88-98%
		(Milstein, & Weinstein, 2007).

Mini-Nutritional Assessment Short-form (MNS-SF)	The Mini-Nutritional Assessment Short-Form (MNA®-SF) is a screening tool used to identify older adults who are malnourished or at risk of malnutrition (Guigoz, Vellas, Garry, 1994; Kaiser et al., 2009, Vellas et al., 2006). The MNA®-SF consists of 6 questions on food intake, weight loss, mobility, psychological stress or acute disease, presence of dementia or depression, and body mass index (BMI). This tool was used in its entirety in this project and scored as recommended.	Internal consistency and inter-observer reliability to range from 0.51 to 0.89 (Guigoz, 2006). <u>General</u> Sensitivity—89% Specificity—82% Strong positive predictive value (Youden Index = 0.70) (Kaiser et al., 2009). When compared to the full MNA • MNA-SF to identify older adults at risk of malnutrition o Sensitivity 82.7—89.3% o Specificity 87.9—91.6% • MNA-SF to identify older adults with malnutrition o Sensitivity—82.7—100% o Specificity—94.1—97.2% (Kostka, Borowiak, & Kostka, 2014).
Program of Research on Integration of Services for the Maintenance of Autonomy (PRISMA-7)	The PRISMA-7 is a case finding tool to identify older adults with moderate to severe disabilities. The questionnaire has seven items and includes domains such as age >85 years, male gender, health problems that limit activities, need for support by others, health problems that require staying at home, having someone to count on, and use of stick or walker or wheelchair. Each positively answered item received one point. A score of three or more indicates frailty and warrants a further evaluation (Raîche, Hébert, Dubois, 2008; Yaman & Unal, 2018). This tool was used in part; therefore, recommended scoring could not be used.	Test-retest reliability ($r=97.5$; $p<0.05$) Internal consistency (Cronbach's alpha=0.714) Sensitivity (81.5%) Specificity (88.2%) Yaman & Unal, 2018

Short Emergency Geriatric Assessment (SEGA)—modified	Schoevaerdts and colleagues (2004) developed a simple tool to detect frailty in elderly subjects from a population of French-speaking older adults admitted to the emergency department, namely the Short Emergency Geriatric Assessment (SEGA). This tool is increasingly used by geriatric medicine specialists in French speaking countries (Conde' et al., 2007). It identifies frail elderly people who could benefit from early targeted interventions. This tool was used in part; therefore, recommended scoring could not be used.	Internal consistency (Cronbach's alpha coefficient: 0.68) Test-retest (intra-class correlation: 0.88) Discriminant validity showed a significant difference, mainly for nutritional status, fall risk, dependency, mood and depression risk, and comorbidities. (Oubaya, et al., 2017)
The Pittsburgh Sleep Quality Index (PSQI)	The Pittsburgh Sleep Quality Index (PSQI) is used to measure the quality and patterns of sleep in the older adult. It differentiates "poor" from "good" sleep by measuring seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month (Buysee, Reynolds, Monk, Berman, & Kupfer, 1989; Alessi et al., 2008). A global sum of "5" or greater indicates a "poor" sleeper (Buysee et al., 1989). This tool was used in part; therefore, recommended scoring could not be used.	Internal consistency—Cronbach's alpha 0.83 (Buysse et al., 1989)

Short form-36 Item Assessment (SF-36)	The SF-36, developed as part of the Medical Outcomes Study (MOS), is a set of generic, understandable, and easily administered self-reported quality of life measures. The SF-36 measures limitations in physical activities because of health problems, limitations in social activities because of physical or emotional problems, limitations in usual role activities because of physical health problems, bodily pain, general mental health (psychological distress and well-being), limitations in usual role activities because of emotional problems, vitality (energy and fatigue), and general health perceptions (Ware & Sherbourne, 1992). *This instrument is in the public domain.* This tool was used in part; therefore, recommended scoring could not be used.	Scalability (using Mokken scaling model)—All sub scales of the SF-36 demonstrated strong scalability except for general health and mental health that showed medium scalability. Internal consistency—Cronbach's alpha was between 0.70 and 0.92 (Mishra et al., 2001). (Mishra et al., 2011)
Others	Health Questionnaire for Local Senior Priests-2018 (HQLSP) Essential Documents of the Province These tools were used in part and there are no recommended scoring parameters.	Not published and no psychometrics available Not published and no psychometrics available

Table 3

Frailty Predictors, Instruments and Sample Questions

Frailty Predictor (number of questions)	Sample Questions (origin)
Age-related changes	
Energy level (4)	Do you feel full of pep? (SF-36) Do you a lot of energy? (SF-36, GDS) Do you feel worn out? (SF-36) Did you feel tired? (SF-36)
Nutritional status (7)	Change in food intake (MNA-SF, SEGAm) Use of provider prescriber diet plan Number of meals per day Average meal's salt/fat intake Caffeine use
Incontinence (2)	Urinary/Bowel incontinence (EFS, SEGAm)
Hearing (3)	Anyone suggested hearing less than good (HHIE-S) Describe hearing (HHIE-S) Does hearing limit personal/social life? (HHIE-S)
Vision (2)	Describe sight/vision
General Health	
Chronic/comorbid conditions (9)	Systems based medical history (SEGAm)
Polypharmacy (3)	Number of prescription medications, OTC medications and, vitamin and herbal supplements (EFS, SEGAm)
General health status (2)	Self-reported health now and compared to a year ago (SF-36, EFS, SEGAm)
Functional Performance	
Cognitive function (2)	Problems with memory (GDS, MNA-SF, SEGAm) Has anyone suggested your memory is less than good?
Ease of ADLs (4)	Problems with work or daily activities due to physical health? (SF-36, PRISMA-7) Difficulty with washing or dressing (SEGAm) Difficulty making hot drinks/meals (SEGAm)
Mobility (12)	History of dizziness, falls, difficulty with walking or balance (SEGAm) Worried about falling Steps/Stairs in the home Difficulty getting up or down stairs Use of assistive devices (SEGAm, PRISMA-7) Difficulty related to the bed, chair, and toilet
Demographics	
Age (1)	Age range (PRISMA-7)
Gender (1)	All men sample (PRISMA-7)

Weight (5)	Height, weight, BMI (MNA-SF) Weight loss in last 3 months (EFS, MNA-SF) Trying to lose weight
Advance Care Planning (5)	Completion of living will, health care surrogate, updated medication list, updated provider list and updated Province Vowed Health Care Record
Lifestyle	
Alcohol use (4)	AUDIT-C questions
Health literacy (8)	Feel understood and supported by HCP Enough Information to effectively manage health Time spent actively managing health Verify accuracy of new health information Able to actively engage with HCP Able to navigate healthcare system Access to good/understandable health information
Health promotion behaviors (4)	Last primary care and dental exam Vaccinations (influenza & pneumococcal)
Nicotine use (5)	Current/Former/Never used variety of nicotine containing products
Physical activity (11)	Does health limit activities? (SF-36) Description of type of exercise done
Sleep patterns (6)	Reasons for having trouble sleeping (PSQI) Use of sleep aide (PSQI) Overall rate of sleep (PSQI)
Psychosocial Health	
Caregiver availability (3)	When you need help, how confident are you that you will be able to count on someone who is willing and/or able to meet your needs? (EFS, PRISMA-7) I have at least one person who can come to medical appointments to support me (HL)
Emotional wellbeing (8)	Problems with work or daily activities due to emotional problems? (SF-36, GDS) Have you been a very nervous person? (SF-36, GDS) Have you felt so down in the dumps that nothing could cheer you up? (SF-36) Have you felt downhearted and blue? (SF-36) Have you been a happy person? (SF-36, GDS) Worry about mood? (SEGAm)
Social participation/ interaction (4)	Physical or emotional problems interfere with normal social activities (SF-36) Are you able to develop and maintain relationships with family and friends?
Spiritual wellbeing (4)	Have you felt calm and peaceful? (SF-36) Are you able to develop and grow your prayer life? Do you avail yourself to spiritual direction, retreats, or other activities to support continued development of your prayer life? Are you able to develop and grow personal interests and hobbies?

ADLs—activities of daily living; AUDIT-C—Alcohol Use Disorders Identification Test-Compressed; BMI—body mass index; EFS—Edmonton Frail Scale; GDS—Geriatric Depression Scale; HCP—Health Care Provider; HL—Health Literacy; HHIE-S—Hearing Handicap Inventory for Elderly: Screening version; MNA-SF—Mini-Nutrition Assessment Short Form; PRISMA-7—Program of Research on Integration of Services for the Maintenance of Autonomy; SEGAm—modified Short Emergency Geriatric Assessment; SF-36—Short-form 36 Item Assessment

Table 4

Determination of Significant Findings According to Survey Content

CONTENT	SIGNIFICANT FINDINGS
Demographics	
• Contact information • Date of birth/Age • Last medical & dental exam • Height/Weight	• Age greater than 70 • Last medical/dental exam greater than 12 months ago or does not have a medical/dental provider • Any utilization of health care services • BMI greater than 30
Health Habits	
• Exercise • Nutrition and diet • Alcohol use • Tobacco/Nicotine use • Vaccination status	• Sedentary exercise • Eat greater than 4 times per day • Rank fat/salt intake as high • Intake of greater than 400 mg of caffeine (e.g., 4 cups of brewed coffee, 10 cans of cola or two "energy shot" drinks) (Mayo Clinic, 2018) • Positive AUDIT-C score (see below) • Current Tobacco Use • Out dated vaccinations for influenza and pneumonia
Medical History	
• Review of systems	• Diagnoses in 3 or more systems • 3 or more diagnoses in a single system (i.e., cardiovascular, respiratory, etc.)
Mobility	
• Fall risk • Mobility • Use of assistive devices	• Any complaints of dizziness in last 12 months • Any fall in last 12 months • Any difficulty with walking or balance • Expressed concern about falling (moderate amount or greater) • Difficulty using stairs (moderate difficulty or greater) • Use of ambulatory aide

SF-36	
• Limitations in physical activities due to health problems • Limitations in social activities due to physical or emotional problems • Limitations in usual role activities due to physical health problems • Bodily pain • General mental health (psychological distress and wellbeing) • Limitations in usual role activities due to emotional problems • Vitality (energy and fatigue) • General health perception	• Physical functioning (max score 1000, 10 items, mean) • Role limitations due to physical health (max score 400, 4 items, mean) • Role limitations due to emotional problems (max score 300, 3 items, mean) • Energy/fatigue (max score 400, 4 items, mean) • Emotional well-being (max score 500, 5 items, mean) • Social functioning (max score 200, 2 items, mean) • Pain (max score 200, 2 items, mean) • General health (max score 500, 5 items, mean) • Total SF-36 score (max 36,000, 36 items, mean)
Activities of Daily Living	
• Activities of daily living • Change in food intake	• Difficulty performing any activity of daily living (moderately or greater) • Decreased food intake and/or weight loss greater than 3 kg in 3 months
Age Related Changes	
• Urinary and Fecal incontinence • Cognitive function/memory • Hearing and vision • Mood and depression	• Reports of frequent or complete incontinence • Reports of bowel problems • Reports of memory problems (moderate, quite a bit or extremely) • Hearing screen positive • Visual screen positive
Medications	
• Number of pills (prescription, OTC, vitamins, and supplements) • Memory related to medications • Use of medication planner	• Psychoactive drug use • Use of 5 or more medications/ OTC daily • Expressed difficulty related to remembering medications (on time or forget)

Sleep Quality	
• Reasons for trouble sleeping • Use of sleep aides • Overall sleep quality	• Sleep assessment score greater than or equal to 5 (high score 18)
Ministry Activities/ Religious Life	
• Ministry • Community Life • Spiritual direction • Personal growth • Relationships	• These topics will not be addressed within this current work. Findings will be discussed directly with the Provincial Superior. • Will need to determine overall scoring method—a mean less than 50% would indicate a need for follow-up
Future Perspectives	
• 12-24-month perspective as to status	• Informational
Health Care Empowerment	
• ICCE subscale	• 4 item scale, max score 20 • Mean less than 50% would indicate need for follow-up
Health Literacy	
• Relationship with healthcare provider • Social support for health • Health information (amount and appraisal) • Engagement in care	• Benchmarks for each of the items assessed are between 3 and 3.5. If greater than 2 of the 4 questions has a response less than or equal to 3, follow-up will be needed.
Advanced Care Planning	
• Assessment of completion of essential documents identified by Holy Cross Province	• Any response that is a NO or Unsure.

ICCE subscale: Informed, Committed, Collaborative, and Engaged subscale of the Health Care Empowerment Inventory (HCEI); **OTC**—over the counter

Table 5

Comparison Between National Survey of Older Population and Vowed Religious Community—Part I

	2017 Profile of Older Americans	Vowed Religious Community
Hearing	15%	59.4% (n=32) reduced hearing with or without hearing aids
Vision	7%	15.6% (n=32) reduced vision with or without correction 52.9% a little bit; 15.6% (moderate/quite a bit) (n=32)
Cognition	9%	23 of 33 (69.7%) report having some problem with memory, of which 5 of 23 (15.2%) report more than mild memory issues and that others have suggested their memory is less good than it used to be.
Ambulation	23%	50% (n=32) difficulty with walking/balance
Self-Care	8%	18.8% (n=32) some difficulty with bathing
Independent Living	15%	9.4% (n=32) some difficulty with household tasks
Vaccinations Influenza Pneumococcal	 71% 69%	 93.5% (n=31) 62.1% (n=29)
Physical Activity	Regular Activity 44% (65-74 yo) 29% (≥ 75 yo)	Regular Vigorous Exercise 23.3% (n=30) Occasional Vigorous Exercise 8.8% (n=30) Mild exercise 60% (n=30) Sedentary (no exercise) 6.7% (n=30)

yo—year old

Table 6

Comparison Between National Survey of Older Population and Vowed Religious Community—Part II

	2017 Profile of Older Americans	Vowed Religious Community
Self-assessment of health	(excellent or very good) 45% (≥65 yo) 64% (18-64 yo)	Fair 8.8% (n=3) Good 38.2% (n=13) Very Good 38.2% (n=13) Excellent 8.8% (n=3)
Chronic Conditions		
Hypertension	58%	50% (n=32)
Hyperlipidemia	48%	37.5% (n=32)
Arthritis	31%	55% (n=29)
Ischemic Heart Disease	29%	9.4% (n=32)
Diabetes Mellitus	27%	22.6% (n=31)
Body Mass Index (BMI)		
Normal (18.5-24.9)	Unknown	37.5% (n=32)
Overweight (25-25.9)	Unknown	31.3% (n=32)
Obese (≥ 30)	31% (>60 yo)	31.3% (n=32)

yo—year old

Table 7

Proposed Interventions Based on Priority Needs

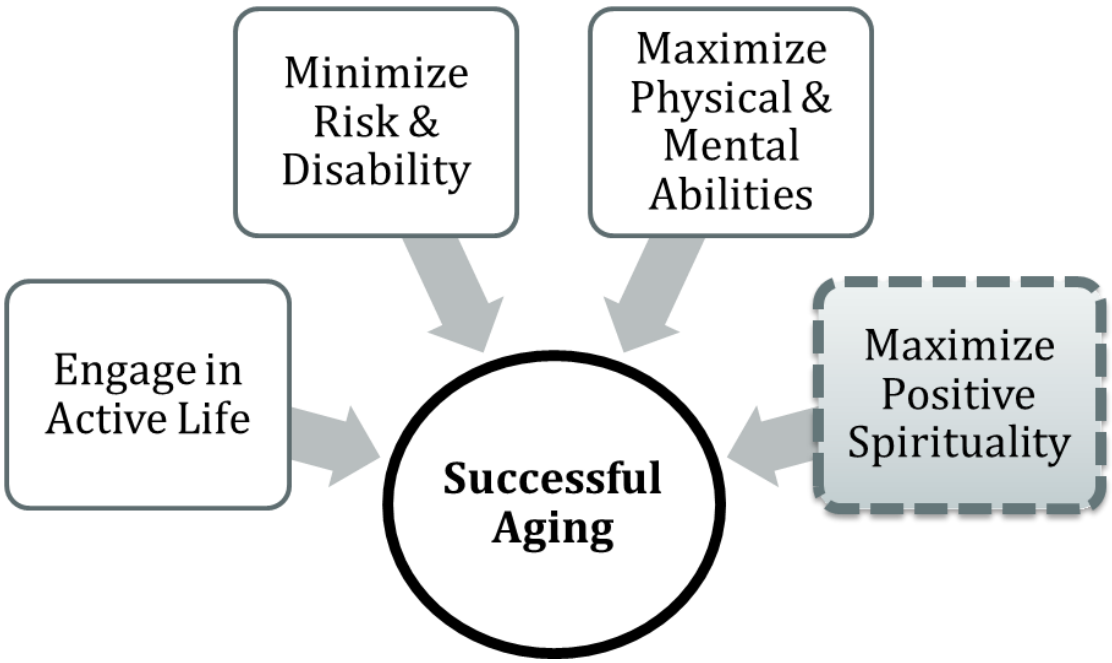
Mobility
• Education regarding risks associated with dizziness, imbalance, ambulation and falls (I). • Education regarding the use of assistive devices to aide ambulation (I). • Encourage further evaluation from PCP (I). • Conduct survey of local community's mobility hazards and risks (L). • Provide resources to local leaders regarding how to assess for mobility hazards/risks (L).
Physical Activity
• Education regarding the benefits of physical activity for overall health and reduction of joint / arthritic pain (I). • Provide education program resources (Go4Life) that build endurance, strength, balance, and flexibility (I).
Health Promotion Activities
• Encourage continued attention towards maintaining current vaccination record (I) • Men's health screenings (I). • Encourage all community members to have a PCP and dentist (I, L, & P) • Encourage all community members to visit their PCP at least annually and dentist every six months (I, & L) • Provide education regarding current vaccination recommendations (I & P)
Alcohol Use Behaviors
• Education regarding alcohol use standards and risks associated with alcohol misuse (I & P). • Provide guidance regarding alcohol use at Province gatherings (P).
Hearing
• Education regarding the impact of hearing loss on cognition and social interactions (I). • Encourage further evaluation by PCP or audiologist (I). • Make accommodations during Province activities/gatherings regarding optimal hearing (P).
Incontinence
• Education regarding what is an expected vs. unexpected change in urinary continence when a person ages (I). • Provide resources for managing incontinence with dignity (I). • Encourage further evaluation by PCP (I).
Cognitive Function
• Education regarding what is an expected vs. unexpected change in memory / cognitive function (I). • Encourage further evaluation by PCP (I).
Emotional Wellbeing
• Encourage further evaluation of anxiety and depression with PCP (I). • Provide resources tailored to the unique mental health needs of vowed religious (I & P).
Social Interaction
• Education regarding how problems with pain, physical and emotional health can contribute to social limitation or isolation (I).
Social Support / Caregiver Availability
• Encourage individuals to find a buddy that can provide this support (I). • Establish a point person in each community to address health related concerns (L).

Advanced Care Planning
• Encourage completion of essential documents (I&P). • Provide resources to support the completion of these documents (I, P).
Other
• Incorporate more breaks into the schedule for Province meetings. This will allow time to get up and move, use the bathroom, and perhaps take a nap. This is crucial to be sensitive to the age-related changes that are occurring among the membership of the community (P).

I=individual level intervention; **L=**local community level intervention; **P=**Province level intervention; **PCP**=Primary Care Provider

Figure 1

Model of Successful Aging



Rowe & Kahn, 1997; Rowe & Kahn, 1998; Crowther, et al., 2002; Post, 2003