Mount Saint Vincent University

Department of Family Studies and Gerontology

An exploration of how individual characteristics and facility features influence long-term care residents' personal relationships

by

Sacha Nadeau

A Thesis

submitted in partial fulfillment

of the requirement for the degree of

Master of Arts in Family Studies and Gerontology

September, 2014

Halifax, Nova Scotia

Mount Saint Vincent University

Department of Family Studies and Gerontology

An exploration of how individual characteristics and facility features influence long-term care residents' personal relationships

by

Sacha Nadeau

Approved:

Janice M. Keefe, Ph.D. Professor, Family Studies and Gerontology Director, Nova Scotia Centre on Aging and Lena Isabel Jodrey Chair in Gerontology Mount Saint Vincent University Thesis Advisor	Date
Pamela Fancey, M.A Associate Director, Nova Scotia Centre on Aging Member, Thesis Committee	Date
Melissa Andrew, MD, MSc (PH), FRCPC Geriatrician, Veterans' Memorial Hospital Member, Thesis Committee	Date

Abstract

Personal relationships are intrinsically connected to resident quality of life (QOL). In 2012, analysis of the Care and Construction project's InterRAI QOL resident survey indicated the personal relationships domain was the lowest scoring. Applying a mixed-methods ecological perspective, this research investigates how individual and/or environmental factors influence the domain of residents' personal relationships through a secondary data analysis of surveys of 319 long-term care residents from 23 facilities in Nova Scotia. Multi-level modeling was deemed inappropriate since environmental level variables between facilities (facility type, rural/urban) only accounted for 3% of variance in residents' relationships. As such, hierarchical regression analyses were used to determine the contributions of within-facility factors on residents' personal relationships. Statistically significant QOL domains within facilities included comfort, autonomy, food, activities, staff bonding and staff responsiveness. Individual risk factors for low personal relationships were widowhood and being over 85. Qualitative analyses of open-ended questions illustrated the lived-experience of residents and how care provision and facility features helped or hindered the maintenance and development of personal relationships. Results suggest that improved social engagement within facilities is needed; newer facility designs are not sufficient to foster the social engagement of residents. Holistic care should address both physical and social needs. As governments and the LTC sector strive to achieve the best fit between cost containment and improving QOL for residents, this research sheds light on the social experience of residents.

Acknowledgement

First and foremost, I would like to thank my supervisor Dr. Janice Keefe for cheerfully challenging me throughout this research thesis. I would like to express my sincere gratitude to my committee members, Pamela Fancey, and Melissa Andrew for their insightfulness and support, such an honour to have you on my committee.

I would like to acknowledge the Nova Scotia Centre on Aging and The Maritime Data Centre for offering the tremendous research opportunities, which have inspired this thesis. The supportive training environment they have provided has been invaluable to my masters' experience. On that note, I would like to express my sincere thanks to the NSCA and MDC staff, particularly Krista White, Christy Nickerson Rak and Rachel Ogilvie for their resourcefulness and enthusiasm throughout my project development. I cannot thank the statistically-savvy Judith Godin enough for her patient mentoring after imploring me to challenge myself learning a new program. I wish to extend thanks to the funders and participants of the Care and Construction project.

Thank you to my lab mates, Stephanie Chamberlain and Megan O'Hara for their comic relief and comraderie throughout this process- it is surreal to already be colleagues, helping each other from provinces away. Thanks to Alison Spurr, a fellow research assistant who had collected data, the first to hear and encourage this thesis topic.

I would like to thank my mother who inspired my interest in the field of gerontology, my father for his positive support and my brother for empathy as he undertook his thesis. And last but certainly not least, a sincere thanks to my partner, Darin, for his companionship during countless productive coffee shop dates and his calm, unwavering support throughout this experience.

Table of Contents

List of Figures

List of Tables

Introduction

North American nursing homes have been experiencing significant changes in recent decades. Facilities are undergoing 'culture makeovers' in order to incorporate new approaches to care which include changes in staffing approaches, physical designs and philosophies of care (Koren, 2010; Misiorski, 2003; Weiner & Ronch, 2003). A new body of research has begun to examine the influences of the new; more client-centered approaches to care, as well as the design of the physical environment (Fancey, Keefe, Stadnyk, Gardiner & Aubrecht, 2012; Rahman & Schnelle, 2008). Research has demonstrated that changes in building structure (i.e. increasing home-likeness) and care delivery (i.e. staff scope of practice) influence family engagement and resident quality of life (Weiner & Ronch, 2003). The shift to smaller, more home-like and less institutional facilities aims to promote increased interaction between residents, staff and family.

In line with this shift, Nova Scotia is pursuing infrastructure changes in the field of continuing care. In 2006, the province released the Continuing Care Strategy, which outlined how the province intended to expand and enhance the continuing care system (e.g., long-term care, homecare, caregiver benefits). Recommendations within the long-term care system included renovating existing facilities, building new facilities, and implementing new staffing approaches (NSHRF, 2006).

It is anticipated that such changes would lead to improved quality of life due to smaller, more home-like environments, fewer residents and greater familiarity with staff members; however, research had not yet thoroughly explored the influences of these changes on resident quality of life. As such, the implications of changing physical design and staffing approach were not yet fully understood in the context of Nova Scotia.

Fancey et al. (2012) produced a thorough literature review, which identified a gap in the literature surrounding the influence of physical structure of nursing homes on resident quality of life within Canada.

The lack of empirical evidence and limited knowledge surrounding the new physical designs and staffing approaches in Nova Scotian nursing homes was the impetus of a three year study: 'Care and Construction: Assessing Differences in Nursing Home Models of Care on Resident Quality of Life'. The Care and Construction project, based out of Mount Saint Vincent University's Nova Scotia Centre on Aging, was funded through a Partnerships in Health System Improvement grant from the Canadian Institutes of Health Research in partnership with the Nova Scotia Health Research Foundation. The project aimed to understand to what extent and in what ways changes in staffing approach and physical design influenced resident quality of life from the perspective of residents, family members and staff (Keefe et al., 2012). The Care and Construction project included a resident survey, a family survey, a staff survey, a case study approach as well an organizational profile survey completed by senior administrators of the home.

Upon synthesizing the literature related to the influence of care approach and physical design on quality of life, Fancey et al. (2012) produced visual conceptualization of resident outcomes which encompassed three overlapping emergent themes: 'Quality of Life', 'Quality of Care' and 'Resident Satisfaction'. At the heart overlap of this visual representation is relationships in the form of social interaction, as well as communication with staff. The current research stems from the Care and Construction project; focusing on residents' opportunities to engage in meaningful relationships within long-term care.

The current research investigated which factors influence residents' personal relationships within a long-term care setting.

Rationale

Given the increasing number of Canadians that will be residing in long-term care facilities (Statistics Canada, 2011), it is important to understand the impact of this environment on one's quality of life. Social engagement is a critical component of quality of life, and should be understood within the context of long-term care environments. The dynamics of long-term care residents' personal relationships are intricate in nature; as are all personal relationships. As a research assistant administering the Care and Construction quality of life resident surveys, I recognized a need to further understand the factors that influence residents' relationships. Despite strong rapport with staff, engagement with other residents and frequent communication with family, many residents still felt as though they were not needed or socially engaged. Residents' self-perceptions and other psychosocial factors may strongly influence the ways in which they engage or disengage within the long-term care environment (Andrew, 2010). Many of the responses relating to residents' personal relationships were an alarming discrepancy from my expectations, and so I proposed to disentangle the factors contributing to this phenomenon. Preliminary analyses presented at the Nova Scotia on Aging's Interdisciplinary Conference on Aging indicated that the Personal Relationships domain of residents' quality of life was in fact the lowest scoring domain; this finding merits further exploration (Keefe et al., 2012). With a growing number of seniors requiring long-term care, it is necessary to understand how these care environments can foster a meaningful, relationship-rich, quality of life.

Long-term Care in Canada

Nova Scotia's experimentation with new methods of care is timely in the face of Canada's rapidly aging population. Seniors are currently the fastest growing age group in the Canadian population. With the fastest growing proportion of seniors in Canada from 2006 to 2011, population aging disproportionately affects the Atlantic Provinces, with Nova Scotia hosting the highest proportion of residents over 65 at 16.6% (Statistics Canada, 2011). These population trends are concerning when considering the multifaceted care needs of the senior demographic. When care needs exceed the capacity of home care and/or informal caregiving, many seniors require long-term care (Black et al., 2010). Long-term care facilities provide care for an array of residents ranging from seniors to persons with mental illness; however, it is generally the older persons who become long-term care residents (Statistics Canada, 2007). Approximately one-fifth of the Canadian population aged 85 and over reside within long-term care facilities (McGregor & Ronald, 2011). Residents of long-term care facilities tend to demonstrate higher levels of frailty, and many residents are closer to the end of life upon admittance (McGregor & Ronald, 2011). The majority (70%) of residents are women with low incomes and a large proportion of residents have some form of dementia (Canadian Healthcare Association, 2009; Cohen, Murphy, Nutland, & Ostry, 2005).

A growing challenge in the realm of long-term care is resident engagement (Rahman & Schnelle, 2008). Achieving resident engagement is illustrated in the 'vision' of the relatively new Eden Alternative approach to long-term care: avoiding the three 'plagues' of residing in long-term care facilities: boredom, loneliness and helplessness (Monkhouse, 2003). The transition from community and family life to a congregate

living situation with care provision can be a difficult adjustment for many seniors and families (Parmenter, Cruickshank, & Hussain, 2012). The maintenance of personal relationships and continuity of self can greatly relieve the strain of transition to a long-term care facility.

Research has shed some light on the immense role personal relationships play in resident descriptions of quality of life, quality of care, and overall experience (Grau, Chandler & Saunders, 1995). The presence and quality of relationships plays a critical role in physical and mental health, as well as longevity (Tucker, Schwartz, Clark & Friedman, 1999; MacCourt, Wilson, & Tourigny-Rivard, 2009). Research has also demonstrated that seniors' social vulnerability is predictive of mortality (Andrew & Keefe, 2013). Despite the immense influence of relationships on quality of life and resident health, little research has focused primarily on the importance of relationships in long-term care (Wilson, Davies, & Nolan, 2009). Rather, research has included relationships as a component of an overall construct. As such, it is imperative that relationships in long-term care be further explored.

Further understanding the factors that influence residents' relationships can inform interaction-promoting physical design, relationship-centered recreational practices, relationship-oriented care approaches, and family engagement. Understanding the relationship between resident relationships and overarching resident quality of life may serve to shift priorities in care philosophies and further inform practitioners on how to alleviate the transition to long-term care. The current inquiry will identify factors that contribute to personal relationships, in order to better inform the development and implementation of nursing home programs and policies.

Theoretical Framework

It is anticipated that a large number of factors, both personal and societal, influence the development and maintenance of residents' personal relationships within long-term care. As such, a holistic perspective will be applied, looking at various influences, from individual factors such as health to environmental factors such as facility design in order to understand how they create a context to support or hinder resident personal relationships.

Bronfenbrenner's Human Ecological Model provides a conceptual framework that encompasses multi-faceted systems as well as interactions between and among these systems. This framework best captures the complexity of potential factors influencing resident's personal relationships. It will be applied in order to acknowledge the interactions of systems influencing residents' personal relationships. The Human Ecological Model, demonstrates how human development is influenced by interactions with a series of interconnected environmental systems: the microsystem, the mesosystem, the exosystem, the macrosystem and the chronosystem. The framework will assist in "examining human behaviors from the perspective of the individuals' interrelations with their environment" (Dill, 2009, p.11). The model is bi-directional in nature, with each system having a ripple effect on other systems, as outlined in Figure 1.

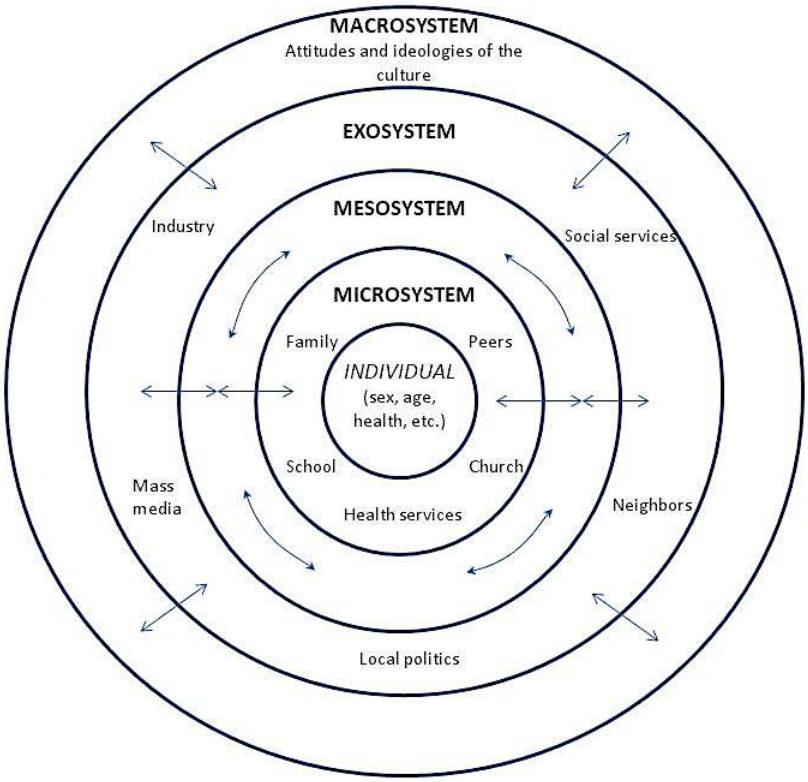


Figure 1. Bronfenbrenner's ecological framework (1973).

The application of the ecological model is advantageous for considering the interrelated contributing factors of multi-faceted social problems. The model incorporates the macrosystem social forces, which are embodied in the microsystem individual experiences (Bronfenbrenner, 1976; Bronfenbrenner, 1977; Bronfenbrenner, 1986). The Ecological Model illustrates the importance of context in understanding individual experiences. Moreover, Turner (1978) states that "the micro bias of individualistic theories renders them inadequate for understanding the full dynamics of human

interaction" suggesting that a more holistic theoretical perspective more thoroughly grasps the complexity of human interactions.

The ecological framework is fitting considering the relationships of residents in a long-term care are affected by a unique series of interrelated levels of influence. At a micro level, residents' individual factors such as health and gender play a critical role in their social interactions. At the mesosystem level, adjustments are being made within the resident's immediate network (e.g. family members interacting with care staff). Living in long-term care introduces an array of exosystem level influences, such as industry demand for nursing home beds due to population demographics and nursing home regulations. Societal views of aging, care ideologies, family trends, and cultural values all have overarching influence on long-term care at a macrosystem level. Macro system influences will be incorporated in the discussion and interpretation of results, drawing upon influences such as the Nova Scotian culture of nursing homes, values and policy frameworks. The evolution of the chronosystem (historical context), can be demonstrated by how the current policy climate and nursing home culture change affect the experiences of residents today. The components of these interrelated systems will be explored in relation to seniors' perceived personal relationships within long-term care.

The ecological approach has been applied in other research evaluating seniors' social support systems (Andrew & Keefe, 2013; Stephens, Alpass, Towers & Stevenson 2011; Temkin-Greener, Zheng & Mukamel, 2012). Stephens and colleagues (2011) sought to evaluate seniors' social support using an ecological model of ageing including upstream social context factors and downstream social support factors of social networks. Their results supported the importance of context in determining social network, which was a

significant predictor of perceived loneliness and social support. Their application of an ecological model was deemed effective in assessing social integration of seniors from multiple levels. The current research will aim to discuss contributing factors at various levels of influence in order to better understand the context and improve personal relationships in long-term care.

Literature Review

The following literature review will explore the role of personal relationships in resident quality of life using an ecological framework. The quality of a resident's personal relationships is connected to an array of interconnected individual and environmental factors. The following literature review will first highlight overarching constructs pertinent to residents' social engagement in long-term care. Subsequently, the review will address the influences of various factors influencing residents' personal relationships.

A literature review of quality of life in long-term care is beyond the scope of the current thesis; however, literature surrounding the conceptualization of resident quality of life is a critical component in understanding the role of personal relationships. Quality of life is often deemed a highly personal and subjective term (Peters, 2004), particularly since quality of life within a long-term care setting is generally captured from the resident perspective, heavily influenced by resident values and perception. As a result, quality of life can often be viewed as elusive, with resident responses largely contingent on how it is defined. Consistent themes emerge in quality of life research in long-term care settings with quality of life generally present when residents experience autonomy, connection to others, purpose, as well as comfort and safety (Fancey et al., 2012; Kane, 2001, 2003).

The overarching Care and Construction project (Keefe et al., 2012) initially conceptualized quality of life with five key components including home likeness, meaningful relationships and activities, resident autonomy and affect.

Activities and meal times are components of quality of life that theoretically contribute to social engagement of residents. Activities provide an outlet for residents to be social as events are generally group-based exercises, creative outlets, musical events and spiritual gatherings. Meal times exert a momentous influence on residents' experiences of daily quality of life, and are most often in a shared space with other residents, providing the opportunity for social engagement, particularly if residents do not participate in other organized activities. Food is central to social experiences across the lifespan, across cultures; and food enjoyment remains a significant predictor of resident quality of life in long-term care (Burack, Weiner, Reinhardt, & Annunziato, 2012). The quality of mealtimes and ambiance of a dining space are characteristically different in newer facilities, where central kitchens may be accessible, or where residents have fewer residents with whom to share the experience. The features related to dining in different styles of facilities could serve to normalize meal-times for residents, allowing residents to enjoy the experience, and interact with others.

Autonomy is an ever-important and complex factor in residents' quality of life; with increased consideration in recent decades. Autonomy is one of the core values behind the culture change toward a more person-centered approach (Weiner & Ronch, 2003). Autonomy in care settings has various moral, legal and care related definitions and implications. Conceptually, a sense of autonomy allows a resident to live authentically in the ways in which they desire (Boyle, 2008). Many care setting definitions of autonomy

capture the balance between resident choice, and a caregiver's duty to enhance health. Autonomy contributes to overall wellbeing and diminished distress in care environments (Kasser, & Rowe, 1999).

Although little is specifically known about the development of relationships in long-term care, research has recognized relationships as an essential component of the resident experience (Wilson & Davies, 2009). Grau, Chandler and Saunders (1995) stressed the importance of personal relationships when they discovered that residents had a tendency to describe their quality of life in terms of their relationships with staff, and family, with good relationships indicating a higher quality. This resident tendency demonstrates the relevance of personal relationships in definitions of quality of life. Few studies emerged in their review of relationship literature in long term care. Although relationships have been identified as integral to the experience of long-term care, from a practical standpoint, little is known about how to foster these bonds in this environment (Dewing, 2004). Research surrounding quality of life in nursing homes is vast and growing; the present literature review will review literature pertaining to the interpersonal components of resident quality of life.

Relationships in Long-term Care

The value placed on relationships makes it important to consider the presence and nature of relationships experienced by residents in long-term care settings. An interesting research study by Macinko and Starfield (2001) identified three types of relationships. These types included 'pragmatic relationships' which are instrumental and care-driven, 'personal and responsive relationships' which are more engaging and personalized to the needs of the resident and 'reciprocal relationships' which focus on the value of reciprocity

between residents, staff and family members. Their research suggested that reciprocal relationships are fundamental in creating a sense of community within the facility. As such, the ability to contribute to relationships in a reciprocal manner contributes to a sense of duty and quality of life. Interactions with residents living in long-term care are not unidirectional in nature. On the contrary, residents may provide advice, sit on committees, make staff feel valued, serve as family kin keepers, as family historians among an array of other possible contributions. The illusion of unidirectional exchanges in care environments is due to the challenge in both recognizing and attributing value to these contributions. However, it is important to note that not all residents have the chance or ability to engage meaningfully. Regrettably, opportunities to engage and contribute are not always accessible, reasonable or feasible for residents in long-term care. Staffing approach, recreational scope, physical space, equipment and facility ideologies can influence the degree to which residents can engage meaningfully and feel valued.

Important relationships that emerge in the lives of residents include resident-staff relationships, resident-family relationships and resident-resident relationships. The following sections will identify relevant research corresponding to each of these dyads.

Resident-staff relationships. Of the relationship research in long-term care, the majority of the existing literature focuses on the impact of resident-staff relationships, particularly the emotional component of care routines while supporting residents' needs (Wilson & Davies, 2009). Emotional aspects of care are seen as integral to the caregiving relationship. Wilson and Davies (2009) identify care approach as an important component affecting social engagement within the long-term care facility. When asked what is relevant to their experiences in care homes, the impact of interpersonal

interactions in the delivery of care was identified as highly valued. Some research has suggested residents feel disappointed with their staff relationships if they frequently experience a lack of reliability (following up on care-related agreements), which makes it challenging to foster close bonds (Slettebo, 2008) As such, quality of life indicators such as staff responsiveness and staff bonding are central to residents' social experiences within the nursing home.

Slettebo (2008) produced a succinct article about the lived experience of residents in long-term care. Appropriately named "safe, but lonely", the article sheds light on the positive benefits and features of living in a nursing home, namely: autonomy, security, respect and care. These positive factors are juxtaposed against a pervasive sense of loneliness within these environments: "the greatest difference between what residents wanted and what they experienced concerned the opportunities they had for close social relationships" (Slettebo, 2008, pg. 22). Core areas for improvement that emerged from this research included increasing the reliability of care staff, as well as increasing their scope to include the social needs of residents. In reflecting on lack of companionship, "Every respondent agreed that the failure to address the social needs of residents, made the days very long, lonely and boring" (Slettebo, 2008, pg. 23). In theory, it can be anticipated that the more consistent staffing approach within new models of care would facilitate greater familiarity with staff members, encouraging a greater degree of closeness and opportunities for social engagement. Although familiarity of staff is beneficial in terms of resident preferences and care routines, more interactions with fewer staff members could reasonably increase the social experience of residents in long-term care environments.

The development of reciprocal relationships between residents and staff is critical in establishing trust and community (Davies, 2001a). Residents contribute to interactions by exchanging personal information, providing advice, or helping with the provision of their care, which has been coined as 'care-as-relating' (Bowers, Fibich, & Jacobson 2001). Providing a context to share one's life and understand one another is important for reciprocity to take place. Grasser (1996) and Bowers, Fibich, and Jacobson (2001) recognized the need for residents to share their past identities, and receive care in a manner that supports these identities. Genuine reciprocity occurs when staff members participate in relating personally with residents. Interactions are contingent on the contributions of participants in the personal relationship and "have the potential to generate high-quality relationships, although this only will occur under certain circumstances" (Cropanzano & Mitchell, 2005, pg. 875). Sharing of personal information often enables the resident to feel like an equal stakeholder and participant in the personal exchange (Bowers, Fibich, & Jacobson 2001; Davies, 2001a).

Wilde et al. (1995) found that residents in long-term care appreciate the interpersonal components of care. Research has identified these staff members as ones that pay attention to the small individual details of care (Gjergberg, 1995; Jackson, 1997) while maintaining a positive, compassionate attitude (Deutschmann, 2001; Rantz, Zwygart-Stauffacher, 1999). The successful development of positive relationships within long-term care settings can improve the sense of community for residents, but also staff (Wilson, Davies, & Nolan, 2009). Long-term care environments with increased staff commitment, and satisfaction have been found to improve resident quality of life (Boldy,

Chou, & Lee, 2004); however, the overarching Care and Construction study did not support this finding (Keefe et al., 2012).

Staff and family members play a critical role in recognizing the resident as a person of value and worth. Family members appreciate staff members that deliver care in a manner that is compatible with valuing the resident (Duncan & Morgan, 1994; Hertzberg, Ekman & Axelsson, 2001). Seddon, Jones and Boyle (2002) claim that positive care interactions that depict valuing one another are based on mutual respect and shared positive experience. Family and staff recognize that quality health and social care requires recognizing residents as individuals with various personalities, preferences and care needs (Reed, 1992).

Resident-family relationships. Family members seek relationships in which staff value the resident's knowledge but also the family members' involvement in the care (Duncan & Morgan 1994). The positive outcomes of this triad include increasing the resident's sense of worth (Kellet, 1998), enabling family to negotiate their role, and maintaining family contribution to care (Seddon, Jones & Boyle, 2002). Although continued family involvement can be beneficial to both parties; the maintenance of family relationships through visitations significantly improves resident morale (Harel, 1981). In these visits, family members saw their duty as "maintaining their relative's dignity and sense of identity" (Harel, 1981, pg. 94). Family and/or friend visitations have been shown to maintain key relationships while linking residents to their communities, in turn promoting resident quality of life (Cook, 2006). Within the first year of transition to long-term care, family members of residents in long-term care strive to maintain consistency in their relationships (Gladstone, Dupuis & Wexler, 2006). Residents may

feel unable to engage in that they perceive to be meaningful ways, or that these interactions are perceived as valuable in comparison to their past family contributions (Keefe & Fancey, 1999). Gladstone, Dupuis and Wexler (2006) examined visitation patterns and concluded that women tend to visit more than men and families exhibit a slight decline in visitation over time while living nearby, being Caucasian, and having a relative without cognitive impairment were factors that influenced the frequency of visits.

Resident-resident relationships. A dearth of studies examined the relationships of resident-resident relationships in long-term care (Wilson & Davies, 2009). It seems the connections between residents are often overlooked. Living within in the same nursing home does not necessitate friendships development amongst residents, as residents living within nursing homes may have very different outlooks and backgrounds (Abbott et al., 2000). Although these relationships are significant, they don't appear to be reaching their full potential within the nursing home setting (Mattiason & Anderson, 1997). Werner (2008) identified stigma as a barrier in the development of relationships of residents with persons with dementia. The perception of dangerousness increased discrimination and avoidance, whereas pity decreased avoidance. Decreasing avoidance did not necessarily result in friendships; it resulted in neutral interactions, or the absence of discrimination. The progression of dementia can present challenges in communication as well as associated personality changes (e.g. apathy or mistrust) that may further strain relationship development (Andrew, 2010). There is a lack of research outlining the development of resident-resident relationships; the existing literature on resident-resident relationships describes 'missed opportunities' for residents to make

meaningful connections with one another in long term care environments (Mattiason & Anderson, 1997).

Social Factors' Influence on Health

The context of growing older introduces challenges for social networks. The influence of lowered social support on health outcomes has been referred to as social vulnerability. Andrew (2010) provides a conceptual overview of social vulnerability in old age ranging from individual to more group-based concepts including social supports, social networks, social engagement, social capital, social cohesion, social isolation, and social vulnerability. The article draws attention to the immense, and complex impact of social factors on health outcomes. The overview also draws attention to the relevance of community-level variables and their influence on health.

One such variable is social capital, a broad social term with a variety of definitions and measurements. Social capital has been linked to positive health status in both epidemiological and in-depth qualitative studies (Baum & Ziersch, 2003). The social capital review conducted by Baum and Ziersch (2003) concluded that the notion of Putnam's 'community' is central to fostering social capital. Community was defined as a sense of belonging, with each member understood to have the duty to care for another, sharing a common goal. Macinko and Starfield (2001) adopt Durkheim's approach to social capital, which emphasizes the relevance of 'group life' in boosting one's sense of purpose.

Individual level social capital was defined in a Finnish study by items such as religious participation, trust and having a helpful friend (Hyyppa & Maki, 2001). Previous research has also suggested that the influence of social capital may differ by

living situation (Andrew, 2005), which supports the exploration of similar constructs in various settings; which could be particularly different with the presence of care provision.

Social factors have an immense influence on longevity and mortality risk which has been illustrated through several noteworthy community-based studies (Andrew, 2010). One such example is the Terman Life-Cycle Study, a longitudinal study that began in 1922, which completed final series of interviews with the surviving cohort in 1986 and showed that a larger quantity and higher quality of interactions within social networks was predictive of lowered mortality risk (Tucker, Schwartz, Clark & Friedman, 1999). Extracting from these community findings, these results shed light on the impact that positive relationships can have in the lives of long-term care residents. These community studies demonstrated that richer networks and social connectedness led to lower mortality (i.e. better survival) at follow up than non-socially integrated counterparts. Research demonstrating the integral influence of personal relationships, and contributing factors to relationships in long-term care environments is sparse which is unfortunate, considering the frailer characteristics of residents who could benefit from such bonds. Residing in a care setting may have tremendous mediating influence on the role of personal relationships.

Keating (2009) demonstrates the how frailty of older adults can have mediating influences on their social capital (as measured by features of their care networks). Greater frailty or care needs of seniors were affiliated with an increased concentration of family members in care networks, generally including a smaller number of close kin. Spouses and adult children were identified as the most likely caregivers to maintain intimate relationships while younger diverse networks provided the least amounts of care.

Frail older adults found to mediate the contributions of family caregiving roles and formal care. Although Keating (2009) demonstrates how frailty and social networks intersect, the observed sample resided in the community, and many participants were not accessing formal care services, suggesting a lower level of frailty as compared to nursing home residents, where staff would presumably assume formal care in turn reducing the care duties of informal care networks despite maintaining the emotional components of care.

The following component of the literature review will reflect upon individual resident characteristics, domains of quality of life and environmental factors of residents in long-term care, and how these factors may influence their personal relationships.

Individual Factors Influencing Relationships

Age. Although most residents in long-term care comprise the proportion of the aged population termed the 'oldest old', aged 85 and older (McGregor & Ronald, 2011), residents' chronological age may influence engagement in personal relationships. Very limited literature described the interaction of age and relationships within long-term care environments. It is important to note that chronological age may be confounded by the presence of cohort effects. As such, age will be included as an exploratory variable and address an existing gap in the literature regarding how chronological age affects resident relationships.

Gender. Gender may play a unique role in personal relationships in long-term care. Research suggests men may struggle to adapt within the long-term care environment due to a series of factors, including emphasis on the group rather than on the individual, the expectation of conformity, and the presence of a hierarchy between residents and staff. In

addition, many activities may feel foreign to men as they are not related to their leisure interests and work experiences. These boundaries may make it challenging for men to develop relationships within a long-term care setting; particularly male friendships, as men are a minority within long-term care (Moss & Moss, 2007).

The influence of gender on residents' health emerged in a study by Sund-Levander, Grodzinsky, and Wahren (2007), which predicted factors of survival in residents in care facilities over a period of three years. Although age, functional and cognitive impairment were predictors of mortality irrespective of gender, their results suggested gender-specific techniques can be used to promote the health of residents in care settings. For women, emphasis was placed on improvement of activities of daily living and nutrition. For men, particular attention was given to mental health and coping, particularly anxiety prevention. These results highlight the relevance of including a variable such as gender, as this factor may have particular importance in the perception, maintenance and development of personal relationships within long-term care settings.

Relationship status. The relationship status of frail elderly has been shown to influence access to healthcare, utilization and health outcomes. Iwashyna and Christakis (2003) sought to understand the mechanisms that regulate this tendency in an American, hospital-based study of seriously ill seniors. Spouses' decision making and advocacy roles within hospital settings were viewed as significant benefits; ones that could be applicable in long-term care. Research by Korenman, Goldman and Fu (1997) suggests that widows generally depict lower overall health than their married counterparts. In terms of long-term care usage, Freedman (1996) suggests the married are less likely to reside in nursing homes. The effect of divorce and separation on residents' socio-

economic status, overall health and family networks requires further research, although it is plausible that any of these components could diminish residents' quality of life and personal relationships. Relationship status may have mediating benefits on residents' relationships, as this may influence the structure and nature of residents' social networks and may consequently result in different degrees of closeness and engagement.

Socio-economic status. Socio-economic status (SES) is "a broad concept that includes such factors as educational attainment, occupation, income, wealth and deprivation" (Andrew, 2010, pg. 198). It is often challenging to assess SES within the senior population as educational opportunities were more limited, and many older women did not have the opportunity to enter the workforce. In community dwelling seniors, low SES was associated with greater cognitive decline, while high SES enabled the use of neural compensation strategies (Czernochowski, Fabiani, & Friedman, 2008). In their report of guidelines for comprehensive mental health services for older adults in Canada, MacCourt, Wilson and Tourigny-Rivard (2009) identified a series of individual factors relating to SES that contributed to social exclusion and limited availability of a social support network. With the majority of residents in long term care being low-income women, SES could be a meaningful influence of diminished personal relationships.

Health. Residents' physical health can have a momentous impact on the maintenance and development of personal relationships. Residents' pain has been linked to changes in social networks and engagement (Cohen, 2004), where lowered mobility may limit one's ability to spend time in common areas or to engage in social activities (Andrew, 2010; Williams, Zimmerman, Sloane, & Reed, 2005). Residents in long-term care tend to demonstrate greater frailty, being closer to the end of life upon admittance

(McGregor & Ronald, 2011) which may lead to limited networks comprising of closer relationships with fewer family members aligned with the socio-emotional selectivity theory (Carstensen, 1992). Seniors in long-term care face challenges with regard to mental health and social engagement. The Canadian Institute for Health Information (CIHI, 2010) sampled nearly 50,000 seniors in long-term care and revealed that 44% of residents had a diagnosis and/or symptoms of depression. These CIHI data measured the degree of social engagement of residents in long-term care by using the Index of Social Engagement (ISE) which integrates the influence of physical and mental functional abilities on resident's social engagement. A total of 64% of residents scored a 3 or lower on the ISE (scale ranges from 0 to 6). Such outcomes depict the low degree of resident engagement within long-term care settings. Namely, seniors' declining health and mobility can create challenges for socially engagement.

Cognitive status. Andrew and Rockwood (2010) have produced a body of research considering the relationship between cognitive decline and social vulnerability in the senior population. Social vulnerability, as defined by their scale, was a clinically significant predictor of lowered cognitive ability as measured by the Mini Mental State Exam (MMSE). Seeman, Lusignolo, Albert and Berkman (2001) distinguished emotional social support as a factor supporting improved cognitive function. Such findings recognize the role of social networks in maintaining health, namely mental health and cognitive capacity. Previous research on emotional support has also demonstrated that involvement in social networks improved cognitive function on a series of tests over a span of nearly eight years (Seeman, Lusignolo, Albert, & Berkman, 2001). Alternatively, changes in a resident's cognitive status can greatly influence the engagement of their

social networks. Declining cognitive status can negatively influence family and friend visitations, to the point that many report dissatisfaction, discomfort and stress (McCallion, Toseland & Freeman, 1999; Port et al., 2001). Greater cognitive impairment has been linked to decreased family visitation (Gladstone, Dupuis, & Wexler, 2010). Residents' cognitive status scores may yield interesting discrepancies in personal relationship outcomes within long-term care.

Environmental Factors Influencing Relationships

Facility design/staffing approach. Facility design and staffing approach have the capacity to powerfully influence residents' personal relationships. Appropriately designed physical space has been shown to boost resident engagement with neighbours, which led to ensuing health benefits (Lochner, Kawachi, Brennan et al., 2003).New long-term care facilities in Nova Scotia are adopting a full-scope staffing approach, while many existing facilities are incorporating aspects of this staffing approach. Full scope facilities are generally smaller in size with a new design, commonly referred to as 'neighborhoods', 'clusters' or 'pods' which are smaller, self-contained units within the larger facility. These components generally house approximately 20-30 residents, each living within single rooms with private baths, cared for by full-scope trained staff members (staff trained in all aspects of care/daily living).

Another form of neighbourhood design which developed from the Eden Alternative approach includes 'The Green House Initiative' which houses 7-10 residents in a home-like environment with a common dining and leisure area with universal workers referred to as "Shahbazim" or "shahbaz" (Bowers & Nolet, 2011; Kane et al.,

2007). Despite a few Eden Certified facilities in Nova Scotia, the Green House Initiative more pervasive in the United States.

The full-scope staffing approach expands the continuing care assistants' scope of practice within long-term care. In this approach, the same staff member engages in all aspects of the residents' care and household including personal care, mobility assistance, emotional support, food preparation and housekeeping. Full-scope staffing encourages a client-focused philosophy of care through staffing consistency, enabling and promoting strong resident-caregiver relationships (Fancey et al., 2012). The emotional components of care, or staff bonding, and staff responsiveness are indicators of resident quality of life regardless of physical design. The present research will examine whether the changes in staffing approach affiliated with new models of care do in fact promote stronger resident-staff relationships.

Rural versus urban. Another environmental factor of interest is geographic location of a facility's and understanding how it influences resident relationships. Temkin-Greener, Zheng and Mukamel (2011) provide an overview of differences between rural and urban facilities' end of life care provision, concluding that individuals in rural communities may be receiving poorer end of life care. This contrasts Philips et al. (2004) who identified rural/isolated residents as experiencing higher quality on an array of measures. In a recent Australian study, Parmenter, Cruickshank and Hussain (2012) explored the social lives of rural Australian nursing home residents. They discovered that residents in rural nursing homes were at risk of social isolation as their social networks shrank considerably. These findings are somewhat unexpected, considering the widespread assumption that rural communities generally foster close-knit networks.

Research suggests residing in a rural nursing home may positively influence resident-family relationships (Ryan & McKenna, 2013). Rural location of nursing home influenced the degree of anxiety of family members adjusting to resident's transition to long-term care. They found that rural family caregivers had a strong sense of familiarity with the nursing homes in their area, resulting in a more positive transition than in more urban centers. These findings were linked to the high degree of social capital present in small rural communities, which may have created heightened familiarity through proximity and shared experiences. It is important to note the rural findings discussed above may not be the case in the rural Atlantic Canada context.

In sum, previous research has demonstrated the vast and complex influence of social engagement on health and cognitive functioning; however, the majority of existing findings related to social network in late life have been community based. Previous research points to the ways in which health, cognitive status and gender may influence the capacity to engage in meaningful relationships. The emphasis to date has been on relationships between residents and staff, reflecting the importance of reciprocity and emotional components of care, while research on residents' family relationships distinguish factors influencing family visitations, and the transition to a care environment.

Very little information is known about the factors that enable resident-to-resident relationship development and maintenance, which could be significant factors in alleviating the stress of transitioning to a long-term care environment. Even less is understood about the ways in which environmental factors and new staffing models may influence resident relationships. The present study sought to alleviate this gap by

exploring which specific variables contribute to residents' perceived personal relationships in long term care environments in Nova Scotia.

Research Questions

The research will assess how various factors contribute to residents' perceived personal relationships within long-term care. One can reasonably conclude that opportunities for personal relationships will influence one's overall quality of life, however, it is important to understand the individual and aggregate contributions of the variables influencing residents' relationships. The research questions are:

1. Applying a human ecological perspective, to what extent do resident characteristics such as age, gender, relationship status, education level, health and cognitive status, domains of quality of life, and facility design/location contribute to Nova Scotian long-term care residents' personal relationships?

It is hypothesized that the individual factors of age, gender, relationship status, education level, health and cognitive status will influence residents' personal relationships. Other quality of life domains are anticipated to be highly interrelated to residents' relationships, as most quality of life domains are internally consistent and highly contingent on one another. However, it is anticipated that overarching environmental factors, such as facility design and location, will exert a more powerful influence on the extent to which individual factors contribute.

Methodology

Procedure

Overarching study. The present research will use secondary data, collected as part of 'Care and Construction: Assessing differences in nursing home models of care on resident's quality of life' (MSVU Ethics #2011-055). The project, funded through CIHR's Partnerships in Health Systems Improvement program, surveyed more than 300 nursing home residents, almost 400 family members and over 800 staff members on factors affecting resident quality of life within three different types of nursing homes and conducted six case studies at multiple points in time (for more information visit www.msvu.ca/nsca). The present research will involve a secondary analysis of the resident survey data.

Recruitment. The recruitment of participants and survey data collection for the Care and Construction project took place from May to August of 2012. A total of 23 nursing home facilities in Nova Scotia were purposively sampled (by facility type) to participate in the resident survey component of the research project. A letter was delivered to residents, explaining the purpose of the research project, as well as details pertaining to participation (Appendix A). The Care and Construction project manager was in contact with the sites to arrange a time for a research assistant to visit the facility for recruitment and data collection. Residents were invited to information sessions presented by research assistants visiting the facility. The information session provided an opportunity for residents and staff to learn about the project, ask questions, and express interest in participating. The research assistant arranged to meet individually with

interested residents. The resident was given a detailed overview of the project, and chose whether or not they wished to participate.

Informed consent. Residents interested in taking part would complete informed consent by answering a series of questions to ensure thorough comprehension of the research process (e.g. "What is the purpose of this research?", "What do you do if you do not wish to answer a question?"). The research assistants conducting the surveys were trained in using best judgment to assess whether or not residents were capable of consenting. If residents were deemed unable to provide informed consent, they were thanked for their interest and told they could not participate. If the residents were able to provide informed consent, they would either sign or verbally grant informed consent, which was digitally recorded and filed by the Project Manager. If complications arose due to communication challenges, the research assistants did everything in their capacity to enable a resident to participate (i.e. typing, pointing at letters) however, a proxy was not used if residents were unable to communicate clearly enough to confirm an understanding of consent. Once informed consent was confirmed, the survey process began with a research assistant administering the survey with residents. The survey process was approximately one hour in duration with a mean of 55.73 minutes (SD=20), but varied considerably ranging from 15 minutes to 170 minutes (2 hours, 50 minutes). After completing the survey, residents were debriefed, and thanked for their participation.

Ethical considerations and safeguards. The only risk to participating was that some questions might be upsetting. Residents were not required to respond to any questions with which they felt uncomfortable. Residents were reassured that they could withdraw from the research process at any time if any questions evoked emotional

disturbances. In the case of upset participants, research assistants engaged in active empathetic listening, and asked if the participant wanted a break or to cease participation. If participants seemed distressed after participating, the research assistants asked if the resident required any further assistance. If deemed necessary, the research assistant notified a staff member if the resident was upset; however, no information regarding the interview was shared due to confidentiality. In accordance with the MSVU Ethics Certificate, any suspected instances of abuse were reported to the Care and Construction project manager and Principal Investigator.

The signed consent forms were separated from the survey component, and participants were codified when placed into the data set. The secondary data set provided for the present research project was void of identifying data. The bias of the researcher, a research assistant for the Care and Construction project, was mitigated as best as possible. Although the collection of data inspired further exploration of the topic at hand, the research question was developed independently of the project, through consultation with related literature and thesis committee. In fact, the exposure to the long-term care environments and the familiarity with the survey tools were valuable assets in interpreting the survey data and subsequent results.

Sample

Criteria for inclusion in the study included living within the participating long-term care facility for a minimum of 1 month, and the capacity to functionally communicate in English. Residents were not excluded on the basis of their cognitive status, provided they had the capacity to provide informed consent. Resident demographics demonstrated in Figure 2 represent the sample's composition of gender,

age, relationship status, education level and duration of time in long-term care, respectively. Very few of the cases had missing data on these key demographic variables (missing data ranged from 0 to 5 cases on these variables).

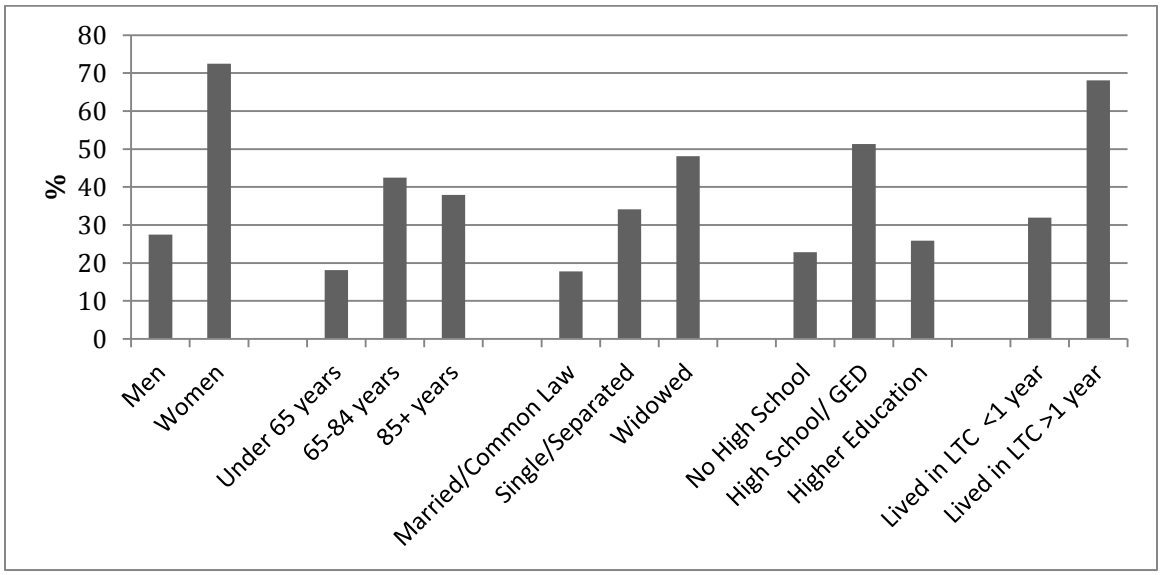


Figure 2. The percentage of residents in each subcategory of demographic variables.

A total of 319 long-term care residents participated in the survey; comprising of 231 (72.5%) women and 88 (27.5%) men. The mean age of respondents is estimated at 78 years with a standard deviation of 15 years due to the categorization of age. The sample did not exclude participants on the basis of age. The typical resident who participated was a female widow, approximately 78 years of age, with at least a high school education who had lived in the facility for more than one year.

Residents' health measures were calculated prior to the multiple imputations (the technique used to address the missing data), which means the values reported reflect the true values in the current sample. Residents' average score on the EQ5D Health index was .60 with a range of .38 to 1 with 1 being highest self-reported health (n=309). The average score on the Mini Mental State Exam cognitive assessment was 23.9, which

corresponds to 'mild dementia' (n= 298). Although the scores ranged from 10 to a perfect score of 30, it is important to note the current average Mini Mental score is higher than would be anticipated in the long-term care population. This higher than average mean score could be explained by the informed consent process which would have eliminated residents that were not able to provide informed consent, thus sampling residents with greater cognitive capacity.

Measures

The data were collected through structured survey questions including closed and open-ended questions (see Appendix B). The InterRAI Self Report Quality of Life assessment covers an array of domains including privacy, food, safety, comfort, autonomy, respect, staff responsiveness, staff bonding, activity and relationships. Answer cards with response options were provided to assist residents with closed-ended questions in the InterRAI Self-Report Nursing Home Quality of Life Survey (e.g., never, rarely, sometimes, most of the time, always, I don't know, prefer not to answer).

Dependent variable: personal relationships. The dependent variable of the present research is the personal relationship domain of the InterRAI Self Report Quality of Life assessment, including the following items:

a. Another resident here is my close friend.
b. I have people who want to do things together with me.
c. People ask for my help or advice.
d. I play an important role in people's lives.
e. I have opportunities for affection or romance.

A composite variable, "personal relationships", was created by taking a mean of the 5 items from the InterRAI Personal Relationships Domain (Appendix B). Cronbach's Alpha scale reliability coefficient for internal consistency was respectable at $\alpha = .763$. A reliability analysis of the alpha values if any of the above items were deleted demonstrated that the current alpha of the whole scale was highest, as such, no items were removed from the scale. A higher score on the composite variable indicates more positive responses to the above items, a positive quality of life factor. For the purposes of this study, the dependent variable, personal relationships, is defined with the content of the items in the relationship domain. The variable encompasses the presence of a friend, the presence of individuals with whom one can do activities, feeling needed or useful to others, feeling important in the lives of others, and having opportunities for affection or romance.

Other theoretically related quality of life domains included comfort and autonomy, food, activities, staff responsiveness and staff bonding. The items comprising these quality of life domains can also be found in Appendix B. Comfort and autonomy were viewed as personal items that measure the degree of ease in one's environment and the independence to do as one pleases. Food and activities were considered social domains which comprise of daily activities generally spent with other residents, considered opportunities to socially engage. Finally, the staffing domains of the InterRAI quality of life were selected as indicators of perceived warmth and skills of staff members.

Individual factors. The following individual factors were included in the analysis as anticipated predictors of residents' personal relationship scores: age, gender, relationship status, education, health, cognitive status, and duration of stay.

Age. There were 8 response options for ages that were collapsed into 3 categories: under age 65, 65 to 84, and 85 and older.

Gender. Gender was coded as a dichotomous variable, male and female.

Relationship status. Relationship status was recoded into three categories: widowed, common law/married, and single (divorced/separated and never married).

Education. Residents' educational attainment was used an indication of SES. Level of education was collapsed from six response categories into three: no high school (8th grade or less), high school or some high school/GED and any attainment of higher education.

Health. Residents' health was measured by the standardized EQ-5D Health Scale. This tool contains the EQ-5D descriptive system, which includes 5 health-related dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each dimension has 3 closed response options: no problems, some problems, severe problems. Residents then indicated (with the aid of a visual analogue scale) their current perceived state of health on a scale of 0 to 100. EQ-5D descriptive system and the EQ visual analogue scale can be referred to in Appendix B.

Cognitive status. Residents' cognitive status was assessed using the Mini Mental State Examination (MMSE). This standardized tool is used to measure cognitive impairment and allocates points for correct responses, up to a possible total score of 30 (Appendix C). The tool was developed by Folstein (1975) and assesses items such as

orientation to time and place, registration, attention and calculation, recall, language, repetition and complex demands (Folstein, Folstein, & McHugh, 1975). Residents were not excluded from the research process on the basis of their MMSE score.

Duration of stay. Duration of stay was a dichotomous variable, categorized as either living in the long-term care facility more or less than one year.

Environmental factors. Environmental factors included larger systems of influence in the resident's life such as facility type (encompassing physical design and care approach), and category of geographic location.

Facility type. Facility type was categorized and defined by the overarching Care and Construction project. The resident data is nested by this environmental variable. The factor encompasses components of both care provision and facility design.

> *Model A.* Model A nursing homes incorporate the "neighbourhood" physical design (small groupings of residents in self-contained units within larger facilities) with a full-scope staffing model. Within the full scope staffing model, care staff are to be involved in all aspects of resident care (e.g., personal care, food preparation, housekeeping), and staff work in one "neighbourhood".
>
> *Model B.* Model B nursing homes incorporate the "neighbourhood" physical design (small groupings of residents in self-contained units within larger facilities) with an augmented-traditional staffing model. Within the augmented traditional staffing model, care staff are to be involved in a wider range aspects of resident care (though they are not involved in food preparation or housekeeping) and staff typically work in one "neighbourhood".

Model C. Model C nursing homes incorporate a traditional physical design, with a traditional staffing model, whereby staff change assignments and units on a rotational basis. (Keefe et al., 2012).

Rural versus urban. In order to assess the influence of geographic location in which the nursing home is located, a dichotomous variable was created to categorize the facilities as either rural or urban. The 23 facilities were separated by the population size of their geographic location. In consultation with my thesis supervisor who is also the lead Investigator of the Care and Construction Project, the facilities were categorized based on the following rural-urban coding system**:** rural area (less than 30,000) and urban population center (30 000 or more). Upon applying this system, a total of 14 nursing home facilities were rural and 9 were urban. This categorization should be interpreted carefully, considering the qualitative variability within the categories and the nature of the Nova Scotian landscape. Population size is merely a single indicator of a community and does not capture many important components such as density.

Analyses

Missing Data

The dataset, void of identifying data, was provided upon receiving ethics approval. The data were cleaned, with missing values left blank for the multiple imputations. The resident survey data had a large proportion of missing data. When the proportion of missing data exceeds 5%, measures should be taken to account for the missingness, otherwise analyses can result in reduced power and biased estimates, particularly if the missing data is not random (Graham, 2009). There are two techniques for dealing with missing data; multiple imputations were chosen over single imputation

as it is more flexible in accommodating varying types of analyses (Azur, Stuart, Frangakis, & Leaf, 2011). Missing data were addressed using multiple imputations which addresses the uncertainty inherent in having missing data and provided more power than traditional techniques, such as list-wise deletion or mean imputation (Schafer & Olsen, 1998; Enders, 2010). Multiple imputations were conducted using the MICE package in R (Buren, & Groothuis-Oudshoorn, 2011; Team, 2010). This process created multiple 'complete' datasets, leaving real values and imputing missing values "based on the observed values for a given individual and the relations observed in the data for other participants" (Azur, Stuart, Frangakis, & Leaf, 2011).

Methodological guidelines regarding the number of imputed datasets varied, with initial advisements of 5-10 imputations and recent research suggesting increasing the number of imputations based on the proportion of missing data in order to improve power (Graham et al., 2007). As such, a total of 20 imputations were conducted, which means 20 predictions were created for each missing value thereby reducing the uncertainty in the imputations, reflected in accurate standard errors (Azur, Stuart, Frangakis, & Leaf, 2011). Limits and rounding were applied to the imputations in order to only have theoretically plausible values (i.e. MMSE score should not exceed the maximum possible score of 30).

An important item to note is that the MICE procedures assumed the data were missing at random; measures were taken to reduce bias in the procedures (Collins et al., 2001; Schafer, 2003). A predictor matrix was created prior to the imputation, including items with a minimum of r=.20. It was determined that many of the facility profile variables were too highly correlated (i.e. room type was encompassed by model).

The multi-colinearity introduced challenges in the imputation, and thus certain facility level variables were excluded. The researcher manually ensured that every variable placed in the model had at least another variable capable of predicting it. In addition, many facility profile variables did not have any variability and thus did not bring further explanatory value to the model. In the predictor matrix, the individual facility code variable was assigned a value, which categorized this variable as an identifier (i.e. how the dataset was nested). Statistical tolerance was checked in order to assess overlap of variables and to remove variables from the predictor matrix. Patterns of clusters, or, multi variate multi colinearity were assessed and items were manually removed from the predictor matrix if they were too closely correlated with other variables. For categorical data that was dummy coded (relationship status, education, age), one of the variables was set to null to avoid perfect colinearity. As per Azur, Stuart, Frangakis, and Lead (2011), variables were imputed at the item level as opposed to the scale level, as there were relatively few items used to construct the scales within the InterRAI.

Multi-Level Model

It is important to note that the data were nested; residents were categorized by their facility, which could further be categorized by facility model: A (full-scope), B (mixed) or C (traditional). One concern of simply using a regression analysis is that the technique would not account for the nested data (i.e. residents within different types of nursing homes). As such, a multi-level approach was selected in order to acknowledge various levels of data or layers of influence. By creating a multi-level model, the analysis can distinguish the individual as well as aggregate contributions of the predictor variables

on the outcome variable: resident personal relationships. Multilevel modeling demonstrates how the individual is 'nested' within several layers of influence and includes these contextual effects as opposed to studying variables in isolation.

The analyses took place in two steps, first, a Pearson correlation to determine the relationships between individual factors, and second, a multi-level analysis including environmental factors. This approach allowed more selectivity with the individual variables included in the multi-level model. Figure 3 below visually represents the conceptual framework that was developed to guide the multi-level model.

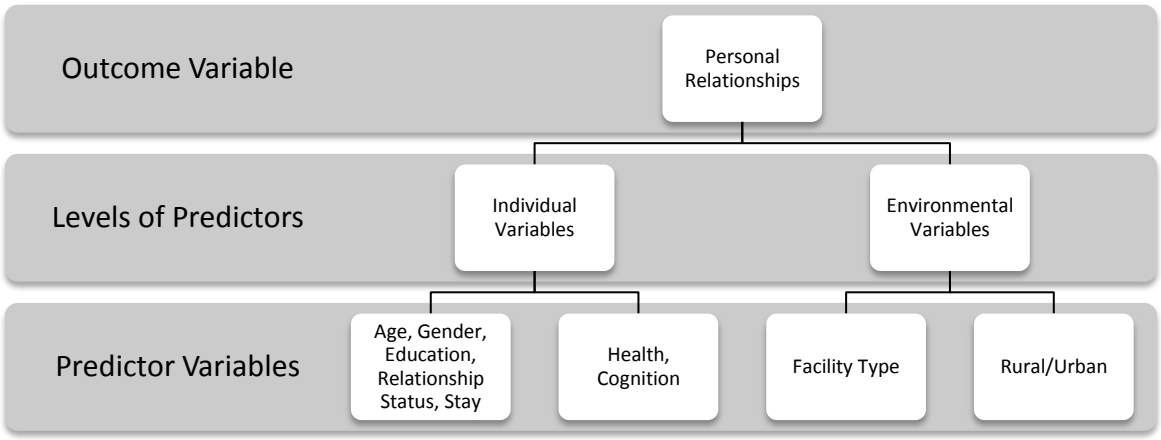


Figure 3. The conceptual framework of individual and environmental factors influencing residents' personal relationships.

Intra-class correlation is a measurement of how much correlatedness exists in a hierarchical data set. The intra class correlation was explored in order to assess if a multi-level model was an appropriate analysis. With an ICC=0.03, only 3% of the variance in the dependent variable, personal relationships, was between facilities. As such, a multi-

level model was not appropriate, as the grand majority of variance (97%) in the outcome variable (personal relationship score) is accounted for exists within facilities. A small ICC indicates that the variance in the outcome variable stems from individual differences within facilities as opposed to between groups.

Regression Analysis

An analytical statistical approach to determining the contributions of various factors on an outcome variable is a regression analysis. A regression analysis was used to determine what proportion of residents' personal relationship scores were explained by individual variables. The assumptions of linearity, homoscedasticity, and normality were satisfied, however, due to the nested nature of the data by facility, the assumption of independence was violated (the initial justification for a multi-level model).

Since a multi-level model was not deemed appropriate, other quality of life domains were included in the regression analysis in order to encompass facility related features that would impact resident relationships. In order to understand the contributions of other components of quality of life to residents' personal relationships within the facility, related domains were added to the regression analyses. Theoretically related quality of life domains were included as predictor variables of residents' relationship scores. In order to make the analyses more stringent, the InterRAI domains were paired and categorized in the order in which they were entered in a hierarchical regression analysis with variables being entered in the following theoretically justified order:

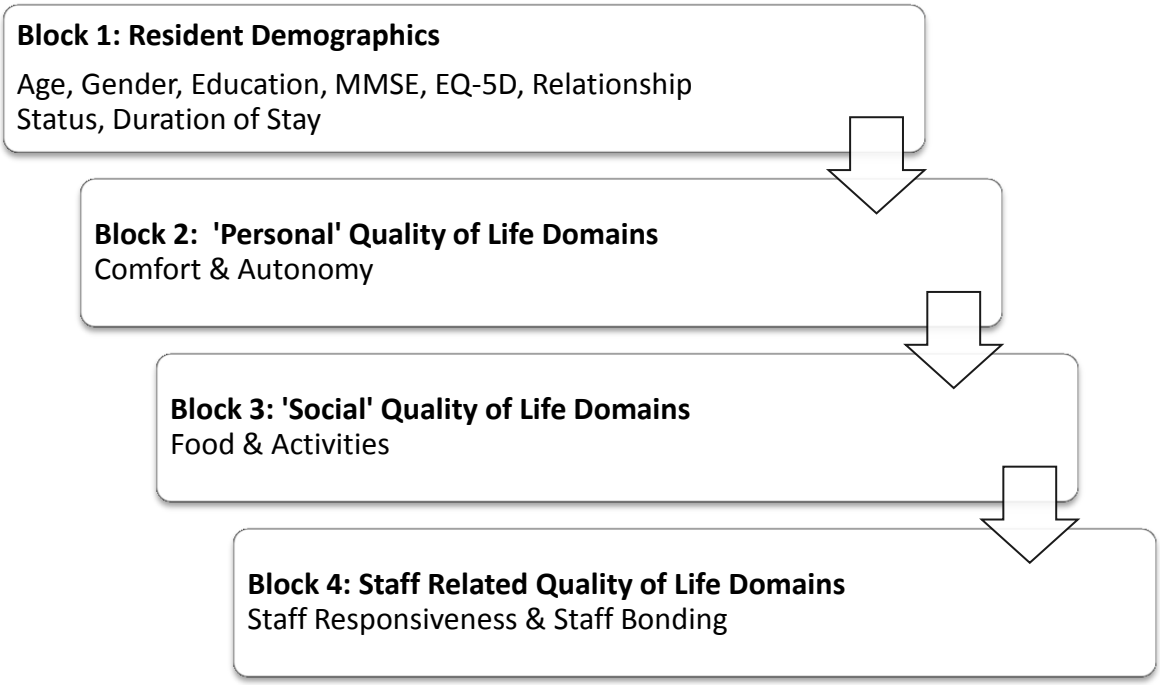


Figure 4. The order of blocks and respective variables entered in the hierarchical regression analysis.

Qualitative Context

The resident survey concluded with open-ended questions regarding the influences of physical design and care approach on personal relationships (Appendix B). In order to achieve greater depth of analyses, the relationships section of the open-ended survey data were explored in order to provide further context to residents' responses. There were not enough qualitative data to perform structured and thorough qualitative analysis; however, the data was included as it served to complement existing quantitative analyses. It is important to note the large proportion of missing data in the open-ended questions of the survey.

Of 319 survey respondents, the proportion of missing data within the qualitative relationship questions is depicted below in Table 1.

Table 1:

Qualitative questions by proportion of missing responses

Question: Thinking about relationships with friends and family…	Missing Responses	
	N	%
1. What features of the nursing home support those relationships?	65	20.4
2. What features of the nursing home challenge those relationships?	192	60.2
3. What features of the way care is provided here support those relationships with friends and family?	247	77.4
4. What features of the way care is provided here challenge those relationships?	142	45.5

Table 1 depicts the number of responses missing by question, with the corresponding proportion of residents per category. Table 2 shows the total number of qualitative questions answered. Only 34 residents answered all four qualitative questions. Similarly, 31 residents did not provide any responses for the open-ended questions relating to relationships. The majority of residents (106) answered half of the questions.

Table 2:

Total number and corresponding proportion of qualitative responses

Responses	N	%
0/4 questions answered	31	9.7
1/4 questions answered	81	25.4
2/4 questions answered	106	33.2
3/4 questions answered	67	21.0
4/4 questions answered	34	10.7

A one-way ANOVA was conducted to assess whether certain resident characteristics influenced the likelihood of responding to the open ended questions. Non-response bias per question and by total questions answered was assessed by facility location, EQ-5D, MMSE, gender, age, relationship status, education and duration of stay in facility. In addition, the likelihood of responding was assessed in relation to residents' overall measures of quality of life and experience within the facility. At $p<.05$ level of significance, none of the factors significantly influenced the likelihood of responding to the open ended questions. The only factor that approached significance was education, $F=2.361$ (4, 314) $p=.053$. Post hoc tests indicated that residents with some form of higher education were more likely to have answered all four questions.

General qualitative themes were established prior to observing the qualitative data. The topics were guided by correlation analyses of individual InterRAI items with the relationship scale. Criteria for inclusion of an item included being significantly correlated ($p<.05$) with at least one of the 5 items comprising the relationships scale. A total of 37 items from the InterRAI emerged as factors significantly correlated with residents' relationship scores. The items were then assessed and collapsed based on overlap of constructs. The overarching themes that emerged were nursing home features, staff, family/friends, food, activities, autonomy and means of contact. Sub categories were then established in each of the above themes upon reviewing the data in order to better capture the nature of comments.

The responses were open and axial coded in Microsoft Excel, conducting constant comparison of content and coding. Statements that were completely neutral or irrelevant were not coded. The frequencies of codes were calculated in order to give a sense of key topics and common themes. Many comments had multiple codes. The researcher updated themes while reviewing the data. The overarching main topics were: Nursing Home Features, Staff, Family/Friends, Food, Activities, Autonomy and Means of Contact. Within these overarching main topics, there existed up to six sub themes that better captured the content of comments. For example, Nursing Home Features were further organized by the following: physical space/design/accessibility; ambiance/homelikeness, privacy/safety, outdoor space, proximity/geographic location, and noise level/smell.

Summaries of themes by question were conducted, and subsequently collapsed to be reported at a broader level.

Results

The present study sought to understand the contributions of personal and facility-level factors influencing residents' personal relationship scores. As facility factors did not significantly contribute to personal relationships, they were not included in further statistical analyses. InterRAI Quality of Life domains were thus included in order to capture facility level features to residents' personal relationships. Table 3 illustrates the descriptive statistics of the InterRAI Quality of Life domains that were included in the regression analysis. The outcome variable of interest, personal relationships, yielded the lowest scores.

Table 3:

Descriptive statistics of InterRAI Quality of Life domains from the resident survey

Domain	Mean	N
1) Comfort	2.70	216
2) Autonomy	2.99	221
3) Food	2.56	273
4) Activities	2.62	242
5) Staff Responsiveness	2.99	235
6) Staff Bonding	2.78	246
7) Personal Relationships	2.00	206

Note: Missing InterRAI Quality of Life domains: privacy, safety, and respect. Mean values incorporate imputed data (n=319). N values reflect number of raw data responses. SD cannot be pooled for imputed data.

Pearson correlations were computed to determine the relationships between the predictor variables to be placed in the regression analysis. The correlation coefficients and corresponding significance among predictor variables of personal relationships are reported below in Table 4. Noteworthy from Table 4 are the intercorrelations between the

relationship category of being single/separated/divorced and residents' gender, age and MMSE score. Gender and being single/divorced/separated were significantly correlated r=.227, p=0.01. Autonomy and EQ-5D self-reported health were significantly correlated at .188, while autonomy and comfort are significantly correlated at r=.528, p=0.01.

Activities and food were equally correlated with comfort at r=.447, p=0.01., suggesting that these constructs contribute equally to residents' sense of comfort within long-term care. In terms of staff-related domains, staff bonding and staff responsiveness were significantly correlated at r=.556, p=0.01. The InterRAI scale was created to provide a comprehensive assessment of many important domains contributing to resident quality of life. In fact, as can be noted in the table, many of the InterRAI Quality of Life domains are intercorrelated, which demonstrates that conceptually, these indicators of quality of life are highly related and often contingent on one another.

Table 4:

Correlation coefficients of predictor variables of personal relationships

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1) Age 65-84																
2) Age 85+	-.687**															
3) Gender	.044	-.189**														
4) High School	-.121*	.134*	-.010													
5) Higher Education	.022	-.053	-.060	-.610**												
6) MMSE	.017	-.108	-.043	.043	.149*											
7) EQ 5D Index	-.006	.084	.005	.116*	-.054	-.106										
8) Single/Separated	-.070	-.353**	.227**	-.075	.136*	.165**	-.065									
9) Married/CL	.170**	-.103	.050	-.029	.002	-.123*	.077	-.332**								
10) Widowed	-.064	.413**	-.254**	.094	-.130*	-.063	.004	-.696**	-.446**							
11) Time in Facility	.029	-.012	-.006	-.049	.036	.137*	-.133*	-.014	.020	-.002						
12) Comfort	.026	.021	.001	.109	-.094	.092	.146*	-.052	-.002	.051	-.109					
13) Autonomy	.015	-.014	.027	.099	-.105	.072	.188**	-.042	-.106	.121*	-.028	.528**				
14) Food	-.013	.147**	.065	.093	-.117*	-.050	.156**	-.078	-.039	.103	-.146*	.447**	.285**			
15) Activities	.065	-.029	.046	.074	.003	.070	.152*	.053	-.035	-.024	-.017	.447**	.431**	.333**		
16) Responsiveness	.012	.122*	-.012	.163**	-.083	.046	.181**	-.128*	-.042	.153**	-.075	.557**	.481**	.465**	.428**	
17) Staff Bonding	.037	.033	.014	.129*	-.117*	.077	.100	-.037	.009	.028	-.006	.559**	.403**	.384**	.493**	.556**

Correlation is significant at the *p < .05, **p < .001. (2-tailed).

Hierarchical Regression

Table 5 depicts the contribution of the predictor variables to the dependent variable: Personal Relationships. The hierarchical regression demonstrated how each block contributed to residents' relationships in long-term care. The first block including residents' demographics did not explain any significant amount of variance in residents' relationship scores (0.6%). The second block including autonomy and comfort was the most significant predictor, explaining an additional 15.2% of unique variance. Following this, block three explained a significant 11.4% of variance with the social domains of activities and food. Although contributing a smaller portion of unique variance, block four including staff bonding and staff responsiveness was significant, accounting for 3.6% of variance in relationships. Blocks 2, 3 and 4 were statistically significant at the $p<.001$ level. The entire regression model accounted for a nearly a third of variability in residents relationships (30.8%).

The pooling of multiply imputed data presents an increased risk of Type 1 error (falsely concluding the presence of a significant result); however, it is important to note that even when considering a more stringent $p<.001$, the results in Table 5 would still be statistically significant.

Table 5:

Summary of hierarchical regression analyses for variables predicting residents' personal relationships (N=319)

	Block 1		Block 2		Block 3		Block 4	
Variable	*SE B*	*β*	*SE B*	*β*	*SE B*	*β*	*SE B*	*β*
65 to 84 years	.170	-.003	.159	-.021	.151	-.145	.149	-.168
85or older	.190	-.205	.179	-.189	.170	-.310	.166	-.339
Gender	.130	.069	.121	.041	.113	-.002	.111	.003
High School	.141	.136	.130	.113	.120	.057	.119	.051
High School +	.162	-.001	.149	.076	.140	.009	.138	.045
MMSE	.013	-.017	.013	-.029	.012	-.028	.012	-.030
EQ_5D	.218	.174	.207	-.098	.190	-.193	.187	-.167
Married	.172	-.007	.161	.001	.150	.088	.147	.073
Widowed	.152	-.108	.142	-.183	.134	-.088	.132	-.073
Duration of Stay	.116	-.095	.108	-.032	.102	-.037	.099	-.063
Comfort			.101	.433	.107	.199	.112	.065
Autonomy			.082	.228	.078	.099	.077	.080
Food					.067	.110	.068	.079
Activities					.070	.406	.071	.332
Responsiveness							.086	-.017
Staff Bonding							.084	.309
R^2 *adj*	0.006		0.158		0.272		0.308	
ΔR^2	0.006		0.152		0.114		0.036	
F for change in R^2	1.616		4.676***		5.829***		5.306***	

Note: Age, relationship status and education were represented with 3 dummy variables, each having one category at 0 as a reference group.

Qualitative Results

The following themes emerged from the qualitative questions exploring the influence of nursing home features and care provision on residents' personal relationships.

Physical layout. Residents identified many nursing home features that supported their relationships. The most commonly noted feature was physical layout of the facility, including size of rooms and common areas, as well accessibility of spaces. These physical details were mentioned in a total of 60 responses.

Social spaces. Not being confined to one's room for visitations with multiple people was helpful. Residents mentioned the usefulness of visitor-specific spaces such as an overnight room for guests, or spaces that could be booked for functions/gatherings. This feature pleased many residents, one in particular stated, "They have a family room and if it's not in use you can book it anytime. They have birthday parties too, they are well set up for that here." A number of respondents also alluded to the importance of having child-friendly spaces for grandchildren and/or other young visitors. This meant not only having a space for the children to play freely, but also a sense that young guests were welcome and encouraged to visit. Physical layout served to facilitate contact with staff in one facility. One resident thought this was beneficial and claimed, "there are chairs in front of the nursing stations where residents can sit and chat with the staff at the nursing station." It is clear that many residents recognize that the physical dynamics of a nursing home can facilitate or impede daily dialogue.

The private/shared room debate. The present sample showed mixed sentiments about having a private room. Residents expressed valid reasons for both living arrangements, with personal preference varying. Residents who had experienced both room arrangements exhibited a 'grass is greener' complex, with conflicting views on which living arrangement was best suited to their needs. As such, it would appear that the answer lies somewhere in between, providing opportunities for both privacy and companionship.

Appreciating privacy. While common areas were appreciated by many of the residents, the ability to have a private conversation behind closed doors was also highly valued, "I like my privacy and I like when people knock first." The common reaction to sharing a room was aligned with the following resident's viewpoint, "it's challenging having a room-mate & the space not being mine, they're fine people, it's just challenging to share." Oddly enough, privacy was also mentioned as too much of a good thing, as many residents in single rooms expressed wanting an increased sense of community and shared space.

Craving companionship. Of the residents that mentioned whether they were in a single room, most commented positively on the privacy, however, a few residents did mention missing the camaraderie of living with others. Despite the widespread understanding that private rooms are desirable by improving the comfort of residents and the visitations of family, there were a few accounts of residents missing the companionship of a roommate. In one situation where a woman had gone from a shared room to a single, she admitted, "I sometimes miss having a roommate for company." When considering the changes in structure of families, from family trees with multiple children to beanpole families that

are geographically sparse, the role of fictive kin in social networks may be enhanced in later life.

Although a rare occurrence (three cases), it is worth mentioning the valued ability to live with a spouse. Residents no longer residing with their partner expressed feelings of separation anxiety and concern about the challenges of visitation for the partner residing in the community. Although facilities were tactful in engaging partners, and residents were relieved partners were alleviated from physical caregiving duties, the separation remained challenging for both parties. With the gap between total lifespan of genders closing and the ensuing shifts in resident demographics, shared living space for couples with differing care needs may be an important consideration for the admission processes and development of new facilities.

An open door policy was mentioned as welcoming for those who first arrive at the long-term care facility, when it can be challenging to make connections. Living in a congregate living arrangement can be daunting and having this policy is helpful to familiarize with neighbours. One particularly positive resident shared:

> "I'm happy with how things are. I never expected a whole lot out of life. I wish people could come talk to me one on one if they're hesitant about coming to a nursing home, not all people know what to expect. One woman came & I put her under my wing. I try to explain it's like one big family, you walk by people's doors and wave."

Design downfalls. Despite predominantly positive reviews, residents identified many physical features that challenged their relationships. The impact of how physical space affected socializing was well-articulated by one resident who compared her current

experience to a previous living arrangement, "I'm alone a lot more here- used to have a room-mate used to spend more time socializing in the large [room]- now people are too spread out." One resident had a particularly detailed account of challenging features:

> "Poorly designed - far from my room to the front door - get tired before I get to the car for a drive with family. Not a friendly building - in old building, living room was at front entrance - easy to go out - now people don't go out - miles of hallway. Need an army of volunteers to get folks to activities. Old design was much more friendly...people would visit more... mealtimes end abruptly, people go back to their rooms."

Another resident commented on the accessibility of the facility for those requiring assistance with doorways, stating, "there aren't nearly enough handicap buttons" which is alarming considering the characteristics of the population residing in long-term care. While most residents appreciated spaces with greater square footage, a few noted that their space was too large and lacked character.

Ambiance. Residents described a somewhat intangible facility aura that existed over and above physical layout, which encompassed feelings of warmth and welcome, or institutional sterility. Many residents appreciated how features such as décor and furniture contributed to a positive impression of the nursing home. Details pertinent to facility ambiance also included the general cleanliness and odour of the space, with these details being particularly relevant to guests' first impressions.

Having an appropriate noise level made the facility feel more home-like and comforting for family visits, however, it was clear that the appropriate noise level for one resident was quite different from another. The sheer presence of others/having a bustling

environment with many people (e.g., staff, residents, visitors) was described as comforting and less isolating to some, while anxiety provoking for others.

Stigma. Stigma against nursing homes was mentioned as a hurdle to having family and friends visit, regardless of facility type. One resident reflected on her lack of guests and commented, "A lot of friends are inhibited by the idea of a nursing home... don't want to/visit - they're intimidated." This sentiment was echoed by one resident missing home, "A nursing home is never like your home." Not being "home" was a commonly mentioned theme throughout the qualitative survey component asking about home-likeness. Another resident claimed the lack of ambiance was a reason for not having more visitations, "this place is not really an uplifting place, not a nice place to visit so I don't get many visitors. People like to visit happy places." More time may be required for residents and their families to perceive the present culture change within long-term care, or, the present culture change may require more time to improve the experience of residents and perceptions of loved ones. It is only then that society can foster more positive attitudes toward care facilities, improving the experience for those visiting, working and residing in nursing homes.

Making it 'home'. Residents appreciated the ability to personalize their rooms to make it feel more home-like. These details provided a gateway to understanding residents' values and interests, creating opportunities for pleasantries with staff and other residents. Personalizing ones room, or 'placemaking', boosted residents' comfort in the new space, and also made the space feel less foreign for visitors, thus enhancing the experience visits (Misiorski, 2003). The ability to have one's cherished art, furniture, photographs and 'knick-knacks' was also a conversation piece for staff. Placemaking

often compensated for the dissatisfaction with physical feature of the rooms, highlighting the values of residents. For example, one wheelchair restricted female resident shared, "it would be nice if the room was bigger but I'm happy with it & I can put up my pictures & colored sheets." This comment illustrates that although the functional design of a nursing home is fundamental, so too is the ability to inject character into the space in order to incorporate residents' personal preferences.

Mapping the facility. The geographical location and proximity of the nursing home to family and friends was an important factor in the frequency of visitations and the duration of visits. The location of the nursing home was mentioned 26 times as a factor in 'what features of the nursing home supported relationships' in the open-ended questions. Residents with geographically spread families mentioned that this was a source of loneliness. The accessibility of parking and public transit were also mentioned as features important to visitors. On this note, proximity/location of the facility presented a few struggles for maintaining relationships, particularly ease of access. One resident commented, "The parking is terrible, they have to hurry to get back to their cars, sometimes its 12 dollars." The view from a resident's window was mentioned; not only for aesthetic appeal, but for engagement with outside life (one resident was pleased that people would wave to her). Having a connection to the outdoors, especially an accessible outdoor space for visitation was considered important.

Outings. Despite having relatively positive attitudes toward their nursing home, residents were grateful for opportunities to leave the facility. Whether outings were organized by the facility, or with family/friends, residents were pleased to have a change of pace and environment. Outings did not necessarily have to be specific activities or

destinations, as qualitative responses suggested the ability to go for a leisurely walk or drive were equally valued. Being able to leave the nursing home environment was refreshing for resident morale, provided opportunities for participating in the community, as well as bonding time outside of the facility. On a similar note, a sense of autonomy was mentioned in conjunction with several outing responses. As such, the relative ability to 'do what you want, when you want' within, and outside the facility was important in allowing residents to have the spontaneity and independence to maintain personal relationships when and where and in the ways in which they desired.

Technological connection. Technology was mentioned as a facilitator for keeping in touch, primarily having a phone in one's room to make calls in private, mentioned in 31 interviews. Some computer-savvy residents were grateful to have access to a communal computer and Internet to keep in touch with family and friends. Younger residents were more likely to have their own personal computer. One younger resident was alarmed that a wireless Internet connection was not provided to residents. The nursing home administrator was taken back by the request, indicating that a communal computer was available for all residents to share. Such accommodations may have sufficed with previous generations in long-term care facilities, but looking forward at the lifestyle of incoming residents (i.e. expectations of the baby boomers), further infrastructure to support technological connectivity will need to be a top priority.

Home-likeness. At any stage in the lifespan, meals are an important component of quality of life, and intrinsically connected to socializing. Residents appreciated having other residents' company during meals, particularly if the seating was arranged, allowing familiarization and relationship development with table–mates. Residents in facilities

with access to a kitchen were very grateful for this feature, and most recognized it was not common practice elsewhere. The positive commentary around mealtime showed how meals in long-term care facilities can be normalized, moving away from the more institutionalized, medical model. This feature contributes to a sense of home, with one resident stating, "I like having access to the kitchen. Freedom to make food, it's just like home." Whether residents loved or despised the quality of food within the facility, it was apparent that meals were a social time that brought structure to the day. The ability to bring in favorite foods and snacks was a positive feature, especially in the case of visitors. Residents appreciated when visitors were offered light refreshments as the residents would offer within their own homes. In addition to light snacks, a few residents were delighted by the option to purchase tickets to have guests join for meals. This enabled the joy of sharing a meal with family, without the burden of coordinating an outing.

The family balance. In addition to meals, residents were pleased that family and friends were encouraged to join in facility events and functions such as weekly music events. Having things to do and places to go was important for family visits, particularly with children. Pets were mentioned as a feature that made the facility more home-like and provided a sense of unity in the facility; something to look forward to as well as conversation when guests came to visit.

Residents felt as though living in the facility relieved stress from their family members, which improved the quality of their relationships, "They don't have anything to worry about they know I'm well looked after." Although most residents felt a sense of relief that they had care staff taking responsibility from their family/friend caregivers, a

few residents appreciated having staff supporting family members to provide care. "They let [husband] help, the care they give here makes him happy he couldn't lift me, he would need extra help. They're very special to him, that's part of him visiting that's 'cause he feels welcome."

Family members appeared to play the role of mediators in advocating for care, especially when many of the residents were not comfortable with these types of conversations, "no, [daughter] talks to them, I don't complain much." If the relationship between the family members and staff was not a positive one, this may present stress for visitations or limit their occurrence, "staff relations - my children are not comfortable with some of the staff." The hesitancy to complain was apparent with both qualitative questions alluding to shortcomings in the facility or staff care provision, with residents tactfully prefacing complaints, or apologizing for their views.

One challenge beyond the scope of the facility was the residents' families' schedules. Many residents wished family could not only visit more frequently, but also stay longer. It seemed many residents struggled to find a balance between feeling lonely in the facility, and resisting asking for companionship out of fear of being burdensome.

The power of policies. Nursing home regulations and/or specific facility rules were another feature that helped or hindered residents' relationships. For example, while overarching provincial policies govern certain components of care provision, facilities often have their own policies governing volunteering and visitation.

Limited visiting hours was mentioned as an obstacle in one facility, "[there are] only certain hours for visitation - close down early in the evening – [my] children all work during the day." In another facility, one resident complimented the flexibility of visiting

hours, stating, "My family can come in whenever they want." Another resident expressed chagrin about how the facility handled a romantic relationship claiming, "[significant other] unfortunately can't stay later than midnight, we watch movies together & fall asleep & they wake us up. I just want to wake up in their arms and fall asleep in them too. They can only come in at 9:30 in the morning." Experiencing explicit rules monitoring or limiting exchanges resulted in a lack of autonomy and clearly affects the opportunities to interact with loved ones.

Although one resident's frustration alludes to measures taken to protect the health of residents, it can be understood how these safety regulations would be frustrating and hinder the maintenance of relationships, "Restrictions, wing was locked down for 30 days during flu - no guests allowed - not even family." One resident could not articulate an example about how living within the nursing home challenged relationships but simply stated, "nothing other than the fact that it's an institution".

The hierarchy within the nursing home was a point of contention for one resident, alluding to disorganization and a lack of consistency as well as fear of punition, "the floors don't agree on what to do, and they're scared the 'head lady' finds out." Policies and rules were frustrating barriers to living the life residents desired, simple items like when to go to sleep and rise were important details to residents, "there are a few that are sticks in the mud, a month ago I wanted to go to bed at 12:45 after [television show] but they wouldn't let me. It's not what I'm doing, it's out of principle." Although facility policies are most often implemented for efficiency and safety, the impact on residents' autonomy and quality of life should be considered in the development of and how they are implemented.

The influence of illness and frailty. Relationships were also challenged by the influence of illness and frailty. The passing of family members, friends, and even fellow residents was one component of residents' limited social networks. The other struggle was the cognitive ability of other residents. The presence of residents with dementia introduced communication challenges, and discomfort related to invasion of privacy. One resident expressed a desire for separate quarters, "I have to close my door due to wanderers- makes me more closed off- I wish they would separate wanderers."

As can be anticipated, residents' perceptions of loss of autonomy were frustrating for relationship maintenance, particularly in the face of frailty and/or physical disability. Residents that mentioned these details were still coping with the loss of autonomy. For example, the fear of falling led to a decreased willingness to venture out to common areas, resulting in feelings of seclusion. One major theme linked to autonomy was the inability to drive, which was mentioned multiple times. Aside from the desire to drive, the topic of transportation was raised with residents desiring improved accessible transit options in order to visit family and friends with greater ease.

Staff character. Staff were mentioned as integral facilitators of, and participants in, residents' relationships. By far the most important theme about care provision was the character of staff, mentioned a total of 69 times. This theme encompassed staff warmth, personality, flexibility, a sense of humour and general rapport. The theme was often present with another: staff actively facilitating friendship/relationship contact for residents, mentioned 15 times. For example, during data collection, the research assistant witnessed a CCA dropping in to clarify if the resident was going to the movies and called his friend for him to arrange the plans. Staff played the role of hosts as well, "staff are

very friendly to the guests, they're invited for tea or lunch, very nice, get to know her friends." Residents were at ease to know that staff would greet their visitors and guide them to the room. While it was important to have personable staff, it was equally important for staff to know when to provide privacy, "they respect privacy when they [family] visit. Very welcoming and friendly to family and friends. They know who my friends and family are."

It seemed many staff members put particular attention into making sure residents were ready for visitors, encouraging residents to socialize, facilitating when possible. One resident shared, "If I have to go out anywhere they help me get ready for when my daughter gets here so she doesn't have to do it. They get my pills and get me dressed." Staff were flexible in accommodating care routines in order to enable residents to socialize, noted by one resident relieved to have formal care, "I wasn't here a week and it already felt like home, I didn't want to involve family in my care. They'll put off my bath until I am ready if I'm on the phone."

Residents did not provide much context as to how care provision challenged their relationships. There were far fewer responses to this question, which may be a result of multiple reasons. Perhaps the way care is provided was perceived as separate from the maintenance of relationships, or that the care was provided in such a way that it did not pose challenges. Alternatively, the question may have been misinterpreted or residents did not feel comfortable speaking negatively about staff members.

Of the comments that were made, a few cases alluded to staff personality being a challenge, lacking the beneficial traits mentioned in other responses, such as warmth and friendliness. Similarly, staff competence was mentioned three times as posing challenges

for the maintenance of relationships. Privacy and timing were necessary in respecting visitors and abiding by care routines. One resident was irritated by the intrusion of care staff during visits, "giving me medication, regardless if they are there. They come in regardless of what we are doing."

It was apparent that residents were affected by staffing ratios, as seven residents alluded to frustrations waiting for care, annoyance with turnover, desiring consistency in staff and feeling as though staff were too busy to provide proper care. One resident spoke to staffing ratios and ensuing guilt for residents requiring care, "Not enough of them- understaffed, doesn't like bothering them when they're busy." Another resident commented on how changes in staffing can disrupt care routines, with staff having to learn residents' preferences, "When the staff change, it's harder - they don't know the residents' routines."

Staff skills. Staff competence was mentioned a total of 19 times. This code encompassed sentiments regarding the staff skill level, attention to detail, and professionalism. Residents also mentioned respect as being a critical feature of care provision, reflected in providing privacy and even choice of vocabulary, "staff is respectful, she said clothing protector instead of bibs, they knock on my door." Staff members' attitudes were important in making residents feel respected and at ease; "They make you feel like you're at home in your own residence. I feel a sense of respect living." Skilled staff was noted as ones who found a balance of providing excellent care, but also freedom, "Staff work hard, do more than what they have to do. He has freedom, can go into other people's rooms, doors are open, friendly space." The quality of care provision negatively affected the visitations of a resident with advanced multiple sclerosis who

expressed, "I think sometimes the care is not good & not kind so that makes it unpleasant, so any friend that cares for me doesn't want to see that. It can be painful to hear."

Some residents felt as though staff should play a more active role in facilitating relationships:

> "Staff should encourage people to socialize a little more. I use the community TV and phone but find that others want their own private things (a bit more reclusive). I have tried to spruce and liven up the living room, but [that] hasn't helped. Wish people would socialize more. People need more assistance to visit and socialize more because family is so spread out."

Some residents desired more socializing with staff members, and even wished they could engage during family visits, "Staff are very busy - would like it if they could visit with family." It seems as though staff are seen as a common resource to foster a more socially engaging environment.

Unfortunately residents did not deliberately comment on staffing approach. Residents' most common reactions reflected staff character and skills, with other comments alluding to facilities being short-staffed. The phrasing of 'features of the way care is provided' may have been too ambiguous. Perhaps more direct questions related to staff consistency and types of duties performed would have evoked feedback on features of different staffing approaches. In would also be challenging for residents to decipher the features of different models of care, particularly if they have no baseline or comparison experience as most would have only lived in one facility. Aside from the possible confounding variables of survey wording and contextual details, the lack of commentary on staffing approach could indirectly indicate a few possible conclusions.

Residents' lack of commentary may indicate that either the full scope staffing is in place and not significantly influencing residents' experiences of relationships, or that the full scope staffing approach is not being executed in alignment with its intended features.

Discussion

The lowest scoring domain in residents' assessment of quality of life was their personal relationships; the purpose of this thesis was to understand what factors contributed to this phenomenon. Low scores on the relationship outcome variable could indicate fewer opportunities to engage socially, and/or poorer quality of social interactions. Reflecting on its operational definition, residents with particularly low scores on this domain did not feel as though they: had a friend, had someone with whom to do activities, could offer help or advice, were important in the lives of others, and/or had opportunities for romance or affection. The present research sought to understand why long-term care residents in Nova Scotia had poor relationship outcomes.

Reflecting on current literature, although the role of personal relationships has been recognized as a fundamental component of resident quality of life, much less is known about which personal characteristics and facility features help or hinder residents' meaningful relationships (Wilson, Davies, & Nolan, 2009). Using an ecological perspective, this study served to narrow this gap by exploring the contributions of individual and environmental variables on residents' relationships within long-term care in Nova Scotia.

Triangulation

Triangulation of method was deemed effective for the current inquiry. The qualitative responses to the open-ended questions regarding the influence of physical features and care provision on personal relationships provided greater depth than would be present with quantitative data alone. The use of the residents' voice enabled a deeper

illustration of how the statistically significant domains influenced residents' personal relationships. The variables included in this research were by no means an exhaustive list of contributing factors. The research has demonstrated, however, that specific resident characteristics are predictive of measures of residents' personal relationships.

Key Findings

Multi-variate analyses revealed that the contributions of environmental variables at the facility level were negligible in contrast to individual factors. The low intra class correlation in the nested dataset is a result in itself, demonstrating that although properly designed physical space can facilitate such interactions, residents' personal relationships and quality of life are items fostered within a building where residents' perceptions of features within the facility play a more important role. As such, individual characteristics, and quality of life domains were further explored to understand their effect on relationships within long-term care. Seeing as it was not appropriate to pursue the multi-level model including the environmental factors, these analyses did not assist in quantitatively understanding the exosystem, macrosystem and chronosystem levels of influence. As a result, the second research question, "At an environmental level, how does facility design and geographic location influence residents' personal relationships within long-term care?" was assessed through the qualitative analyses.

Qualitative analysis of open-ended questions provided additional context through the residents' voice as to the ways in which individual and environmental factors facilitated meaningful relationships. In general, residents were pleased by the safety of having people in the vicinity at all times within long-term care, but often felt lonely and as though staff members were too busy for them. Preferences varied for physical space

and design, but most residents agreed that a balance between communal and private areas was very important.

The following sections will articulate key qualitative findings in parallel to the quantitative findings, reflecting first on resident specific factors, and then quality of life domains such as autonomy and comfort, social quality of life domains such as activities and meals, and staff-related results.

Resident Demographics

The hierarchical regression did in fact illustrate important contributions to residents' quality of life in long-term care environments. The first block including residents' demographics did not explain any significant amount of variance in residents' relationship scores. This was surprising considering previous research outlining the complex relationships between health, cognitive status and social engagement. Qualitatively, residents mentioned the influence of frailty, in that when feeling unwell, they were much less likely to engage socially within the facility. Residents spoke to the challenges of certain behaviours associated with Alzheimer's and other related dementias on socializing within the facility. Another variable in this block worthy of mention was residents' duration of stay. One would anticipate that a longer period of stay in a facility would increase familiarity with the staff and other residents within the facility and thus foster more opportunities for a greater sense of social engagement. This was not the case, which may suggest that duration of stay may not be as relevant as the facilities' philosophy of care or culture. If a facility does not have person-centered, or relationship-centered care at the forefront of daily life, duration of stay would likely be irrelevant, and less predictive of residents' relationships. Qualitative responses alluded to a challenging transitional period, where residents were adjusting to their new home, and accepting the

necessity of living there. It may be plausible that after this transition period, duration of stay is relative and does not exert much influence on residents' daily quality of life, or social engagement. Another personal variable that was mentioned qualitatively but did not emerge in analyses was residents' age. Young residents (under 65) alluded to feeling slightly alienated within long term care, particularly in terms of entertainment being less relevant and fewer opportunities for meaningful social engagement with like-minded peers of their cohort.

Personal domains: autonomy and comfort

The second block of the multiple regressions was the most significant predictor, explaining 15.8% unique variance, including autonomy and comfort. Autonomy entails residents' sense of involvement in daily decisions regarding care and activities, and such engagement has been linked to improved perceptions of self worth (Campbell, 2003). The ability to live autonomously then, may empower residents, and enable them to live in accordance with their values. Qualitative comments described this authenticity as being able to do what you want, when you want, which would have considerable influence on how, when, where and with whom residents engage. Comments about autonomy alluded to the presence of trust within staff and resident relationships, in that, residents appreciated being trusted, and treated like adults, when making decisions about their lives. Being one's authentic self emerged in commentary about being able to maintain one's sense of humour and 'carry on' with staff.

The concept of comfort aligns with a sense of ease in one's space, which may foster a more positive environment for social engagement. Having a private space customized with placemaking could help to maintain a residents' dignity and sense of

individuality, which has been linked to more meaningful visitations (Kane, 2003; Chou, Boldy & Lee, 2003). Residents described comfort differently, but common comfort topics that enhanced social time included including private rooms, personally decorated room, and having furniture for guests.

Social domains: meals and activities

The third block of the regression contributed a significant additional 11.4% of variance with the social domains of activities and food. This block was less significant than more personal domains of autonomy and comfort, which is surprising considering the communal nature of these features in facilities. Although significant, these features are contributing only a small proportion to residents' engagement, and thus may not be meeting their full potential contribution to residents' relationships.

Meals were frequently mentioned as means to maintain social relationships. When residents had visitors, they greatly appreciated when family and friends were offered refreshments, making them feel at home. In addition, residents were grateful for meal plans that enabled family members or friends to visit and share a meal with them, as well as the ability to rent a space and have a social gathering with family/friends. Meal times within the facility with other residents were not mentioned in qualitative commentary as improving social engagement, which may suggest room for improvement in terms of normalizing meal time, and facilitating meaningful social engagement.

Staff-related domains: staff bonding and responsiveness

Although contributing a smaller portion of unique variance, the fourth block including staff bonding and staff responsiveness accounted for 3.6%. It appears as though this may be a conservative estimate as these domains may not be capturing the full extent of staff members' role in residents' relationships, which was illustrated frequently in the

qualitative responses. The most frequent commentary related to staff members' personalities and character which encompassed friendliness, warmth, and sense of humour. Residents also appreciated staff tact and professionalism, particularly in the case of visiting family, where by staff would arrange care before or afterward, and would be friendly but respect the resident's privacy during visitations. These features made staff more approachable to residents. In addition to care-related duties, many residents mentioned staff actively facilitating residents' relationships, such as introducing residents, or facilitating outings for residents and family. These items are also self-report resident responses and may not capture more exosystem level variables to reflect staff such as philosophy of care, care ratios, training in particular programs, localization in the facility etc.

The entire model accounted for a sizeable amount of variability in residents' relationships, nearly a third at 30.1%. Although a significant proportion of variance was explained by residents' perceptions of comfort, autonomy, activities, food, staff bonding and staff responsiveness, questions arise considering what could be contributing to the remaining, unexplained variance. The tools used to collect residents' perspectives were self-reported data; however, the survey process did not encompass psychosocial items such as residents' self esteem, resilience, self worth, or assessments of mental health which have been linked to exert great influence on residents' perceptions of quality of life and quality of care (Kane et al., 2003; Kane et al., 1983).

Integration of the Model

The Human Ecological model was used to guide the current inquiry. Upon completing analyses, further context was provided at each of the layers of influence.

Personality was an important microsystem factor that emerged from qualitative analyses as a feature that may influence residents' personal relationships. Namely, being introverted may decrease one's willingness to engage in particular group activities, and may lead to poorer outcomes on the personal relationships composite. In the context of day-to-day life within the facility, this may manifest itself in various ways but ultimately emphasizes the importance of a truly person-centered approach and acknowledging individuality and residents' varying degrees of desire for emotional closeness.

Although this study did not encompass clinical assessments of resident wellbeing, being over the age of 85 has been consistently linked with greater degrees of frailty and reduced mobility (McGregor, & Ronald, 2011). The EQ5D self-assessed physical health was not a statistically significant predictor of relationship scores, but qualitative responses illustrated how physical challenges may present significant barriers to engaging socially within or outside of the facility. Residents' wellbeing can influence their daily schedules, the degree to which they wish to participate in meals and activities, and their openness to visitations. By the same token, residents' cognitive and physical abilities may alter their capacity to socially engage. Highly prevalent neurodegenerative diseases such as dementia impair one's memory, ability to communicate and process emotions, which may introduce significant challenges in the development and maintenance of personal relationships (O'Connor et al., 2007). Although quantitative analyses did not reveal cognitive status as a significant predictor of residents' relationships, it is important to consider the MMSE score belonged to the resident responding to the survey, and was not a reflection of how others' capacity influenced relationships. If multi-level modeling had been appropriate, factors such as estimated proportion of residents with cognitive

impairment might have been more illustrative of the complex effects of the cognitive capacity of residents. Several qualitative responses alluded to the desire for specialized dementia care units, as residents expressed fear or misunderstanding of challenging, often anti-social behaviors exhibited by agitated residents with dementia.

The implications of these challenges are somewhat sensitive to address in attempts to improve social engagement. For example, some residents may require facilitation to assist their relationships, such as conversation starters or memory prompts. Mattiason & Anderson (1997) concluded that relationships in long-term care environments were not meeting their full potential. With increased awareness of these challenges and practical solutions to overcome them, residents could benefit from the many missed opportunities for meaningful relationships.

Providing an audience-appropriate education session addressing common communication challenges within long-term care environments could diminish the pervasive effects of stigma. Qualitative responses, researcher field notes and anecdotal details from the data collection alluded to misunderstandings, stigma and fear surrounding others' abilities which has been linked to diminished willingness to connect (Werner, 2008). Some of these challenges can also be alleviated by appropriately designed physical space, where quiet, private areas can improve functionality, diminish the degree of competing stimulus, and provide a space to disengage when agitated (Brawley, 1997; Lawton et al., 1984).

Although staff play a critical role in residents' social networks by facilitating existing relationships, it appeared as though residents were not cognizant of the influence of new, full-scope staffing models. The present findings highlight the growing

importance of staff recognizing their role as not only facilitators of but participants in residents' meaningful relationships. Staff members are often deemed to be significant sources of social support in the daily lives of residents. Some residents admitted to feelings of alienation when they lacked a supportive, emotional bond with staff members. The social wellbeing of residents should be on the agenda of residents' care, with particular relevance for sought-skills during staff recruitment and interpersonal training.

Family engagement and family relations with staff were not directly addressed or incorporated in the quantitative analyses. Fortunately, at the mesosystem level, the current qualitative findings illustrate the importance of relationship development between staff and family. Residents take comfort in camaraderie between staff and family members, and look forward to time with staff with which they have fostered strong connection. These mesosystem interactions demonstrate a buffering effect on residents' loneliness. Alternatively, residents' awareness of disaccord between family members and staff can create stress. Family of frail residents have reported changes in contact due to personal, social, health, and institutional, conditions (Gladstone, Dupuis, & Wexler, 2006). These changes may increase stress and guilt during visits, which may be a factor in limited visitations and poorer relationship scores. Creative ways to engage family members have shown success in other research, in the form of activity-based interventions (Crispi & Heitner, 2002) and/or therapeutic family leisure programs (Dupuis & Pedlar, 1995). In addition, research suggests that the development of bonds between staff and family members provides a positive outlet for visiting family, who may have poorer quality visits with the increasing frailty of their resident family member (Gladstone & Wexler, 2002, Gladstone, Dupuis &Wexler, 2006).

Residents alluded to the importance of continuing engagement in the community through outings. The ability to participate in external activities, or participate in outings was a rejuvenating feature that boosted resident morale. These topics allude to exosystem influences in the lives of nursing home residents. This involvement may have a cyclical benefit for the community, as it may diminish stigma and fear surrounding these care environments that are foreign to many, a factor likely further contributing to residents' sense of social isolation.

It appeared as though residents were hesitant to complain about their situation within long-term care. Residents provided qualifiers when they expressed disappointed with the quality of their relationships. These tendencies may be explained by a cohort effect, as this generation may be less likely to complain. It is also possible that residents were sensitive to the needs of others and neglected their own, a trend noted by Slettebo (2008, pg. 24) "is it the residents who show empathic understanding for the stressful situations that the nurses endure, and might this lead to the residents not demanding more strongly that their social needs should be met?". The willingness of some residents to put others' needs first may play a role in diminished relationship scores.

The dominant generation of the sample showed distinctive ideologies and values. The respondents demonstrated themes of gratitude, and hypersensitivity to the realities of others (not wanting to be burdensome to family or staff). Macrosystem level stigma surrounding care environments was ever present in the qualitative data, with commentary alluding to the management of facilities, the nature of institutions, how expectations were a barrier to adjusting and how the stigma had influenced visitations.

It seemed as though residents' social needs were not always met, and that many residents balanced this with their personal expectations about getting old. For some, living in long-term care was the appropriate decision, and such feelings of loneliness were an expected consequence. These societal views, or macrosystem influences, have major implications if it means that residents are accepting feelings of social isolation as a 'part of the process' when in fact social engagement throughout the lifespan is highly important for one's wellbeing (Cook, 2006). Over and above facility design and the provision of care, it was apparent that resident characteristics, such as resilience, strongly influenced their perceptions of living within long-term care and how this affected their maintenance of existing, and development of new, personal relationships.

The present research provided results from residents' perceptions at one point in time, and thus did not quantitatively or qualitatively assess the impact of chronological time on residents' social experiences. Given the present political context of nursing home reform and culture change, the chronosystem influences on the present sample would be vastly different 20 years ago, prior to the delineation from a medical model to a person-centered approach and alternative physical designs. Looking forward, it can be anticipated that the future 'baby boom' generation of nursing home residents may have vastly different interpretations of these environments, with significantly different worldviews and expectations. For example, developing infrastructure for technological connection will be of growing importance for the maintenance of relationships of incoming residents. This has already been mentioned as a point of contention for a few younger residents within the current sample.

Figure 5 visually represents selected key findings from the current analyses mapped onto the ecological framework.

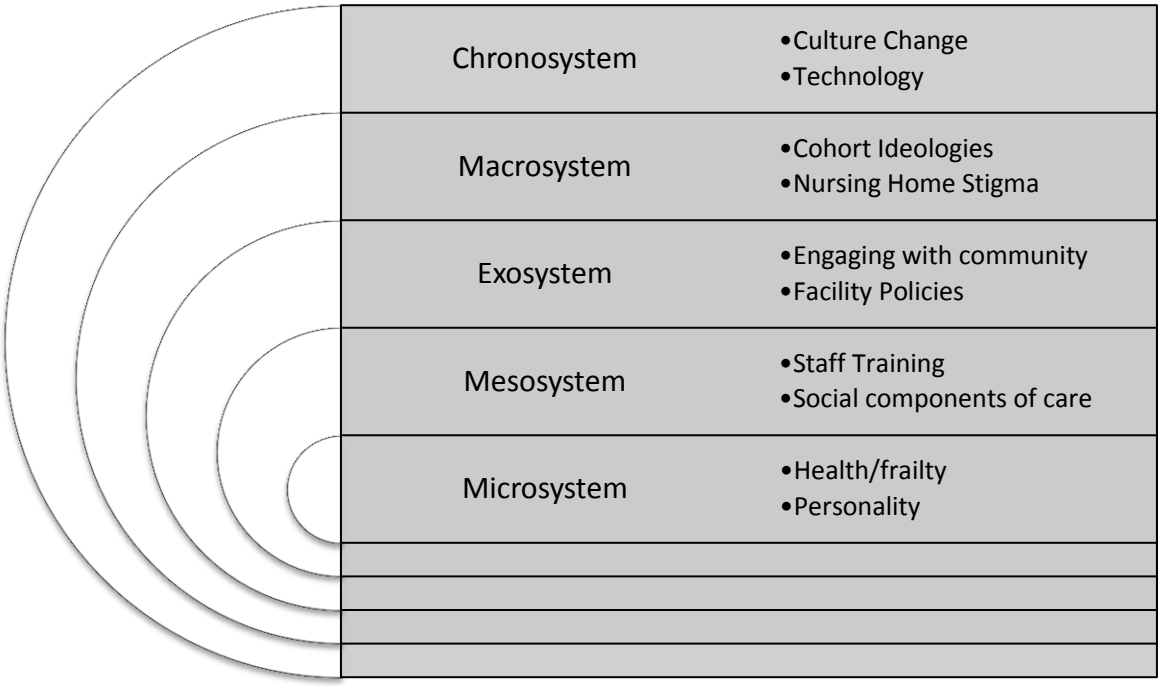


Figure 5. An overview application of Bronfenbrenner's ecological framework to factors influencing residents' personal relationships.

Pertinent Theoretical Frameworks

Residents' low scores on the relationship component of quality of life align with socio-emotional selectivity theory, considering the changes in the size and composition of residents' networks (Carstensen, 1992). Despite the presence of new opportunities for relationships and the presence of residents and staff, the transition to long-term care can be an isolating experience for many (Cook, 2006). It is important to consider the shrinking nature of social networks of residents over the age of 85. Qualitative responses alluded to shrinking social networks with the passing of loved ones. The experiences of loss and the transition to a new living situation are powerful factors influencing residents'

social wellbeing. Although residents tended to have fewer, but closer members of their inner social network, feelings of dissatisfaction were ever-present. Gladstone, Dupuis and Wexler (2006) applied Continuity Theory to their study observing the dynamics of family relationships at two points in time after a loved one's transition to long-term care. The theory was depicted in their results, whereby family members strived to maintain their roles by expressing care in new ways and rebalancing their duties after the transition to long-term care. As outlined by Continuity Theory, individuals' relationships are resilient to life changes, however, situations which cause disruption of roles can be anxiety provoking until a balance is negotiated and achieved.

Practice and Policy Implications

The current findings suggest that fostering strong relationships within long-term care has more to do with residents' individual level variables (self-reported quality of life domains such as autonomy, comfort, food, activities, staff bonding and staff responsiveness) than environmental factors (differences between various facilities).

From a policy perspective, these findings shed light on the role of structural and staff changes on residents' relationships. Given recent trends of culture change within long-term care, this finding is empowering for facilities that may feel subjectively disadvantaged on the fronts of environmental facility factors such as physical design. Avoiding the complex 'plagues' of resident loneliness, boredom and despair are ever-present challenges for nursing home administrators. Addressing these multifaceted 'plagues' can be daunting in the face of budgetary constraints for restructuring physical facilities and/or staffing scope and ratios. On a positive note, the present research demonstrates that, with regards to the opportunities for social engagement within long-

term-care, much can be done within existing structures to improve the lived experience of residents. Addressing residents' poor outcomes in the domain of personal relationships means adapting the way we conceptualize care and the roles of staff. Cohen and Weisman (1991) distinguished design features that were supportive to individuals with dementia. The nine principles were highly reflected in qualitative context of residents' experiences in long-term care, namely the following five: meaningful activity, appropriate environmental stimulation and challenge, positive social milieu, maximize autonomy and control, and privacy (Lawton, Fulcomer, & Kleban, 1984). Although developed to support individuals with dementia, the principles are highly relevant to the present results.

Practical Interventions

The following list is by no means exhaustive but may provide a useful starting point for facilities interested in assessing how their philosophy of care and/or physical environment is influencing residents' personal relationships. Implementation of these interventions may improve the degree of social connectedness of residents, with a likelihood of ripple effect on others involved in the lives of residents.

- Empowering/training all staff to be person-centered
- Fostering a welcoming, home-like environment
- Promoting open communication
- Providing opportunities for reciprocity
- Reviewing if policies/regulations challenge relationships
- Therapeutic family leisure programs/activity-based interventions
- Engagement with the community to diminish stigma

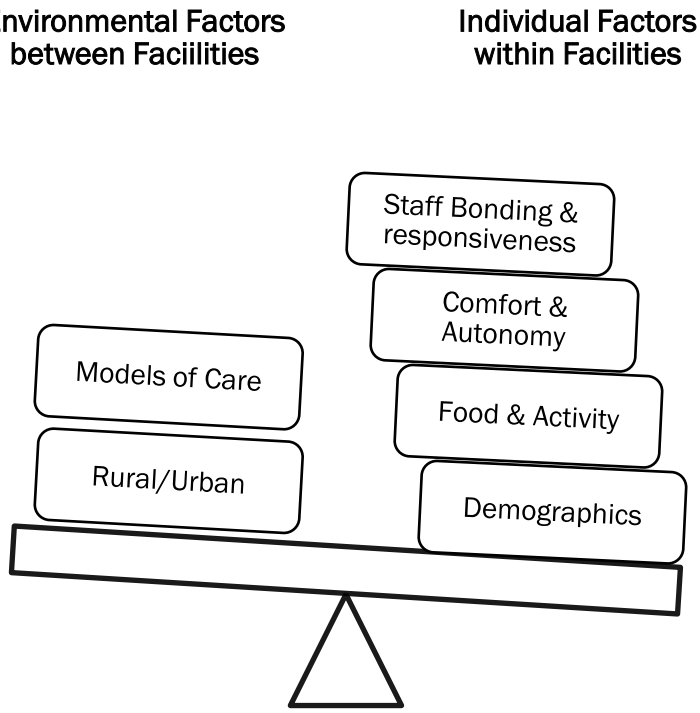


Figure 6: The conceptual depiction of environmental and individual factors' influence on residents' personal relationships.

The weight and value of personal relationships within long-term care environments should be acknowledged in strategic planning regarding staff recruitment, training, and retention (Dill, 2009). Meeting the care needs of the current population in long-term care requires not only a technical skill set, but also an intangible character component. Practitioners in these environments may feel overwhelmed when trying to balance the social component of care without imposing additional time demands on already strained schedules. Simply, asking staff to foster meaningful relationships with residents and facilitate resident-resident relationships is a tall order given existing time

constraints pervasive in these environments, a multifaceted exosystem influence and may be crossing professional-resident boundaries.

The present results are timely given the recent changes to the Continuing Care Assistant scope of practice, an ever-changing coordination of multidisciplinary team members, and the expansion of professionals' scope of practice. The fact that residents' relationship scores on their quality of life assessments are by far the lowest, may suggest that the emotional components of care may be lacking. Staff members play an ever-more important role in the case of residents without family and friends, the prevalence of which will likely increase given the changing structure of family networks. Slettebo (2008) provides a succinct, albeit lofty goal suggesting:

> "society should consider meeting the challenge of creating a more vibrant social life in nursing homes by including the residents in social settings and providing enough nurses to take care of both the social as well as the physical needs of their residents". (p. 25)

Family-oriented care policies and person-centered approaches are critical to remedying the social engagement of residents.

Although the current research acknowledges the importance of meaningful relationships for nursing home residents, improving the current state of residents' relationships should not be imposed upon residents. Autonomy is fundamental for residents' quality of life; as such, residents' social preferences should be respected in order to avoid infantalization (i.e. staff imposing friendships). Applications of this research should avoid forcing inorganic relationships, but rather, endeavour to provide the most opportunistic environment for their facilitation.

Limitations

Albeit not a goal of the present study, the ability to quantify the social exchanges between residents, family and staff may further contextualize residents' responses. Unfortunately, the present research cannot link residents to their respective family members and staff caregivers. It would have been beneficial to consider interactions from all three perspectives in order to contextualize experiences. The ability to link data would have also provided insight into the dynamics and reciprocity within relationships. It should be noted, however, that the Care and Construction project does have a case study component, which encompasses a more in-depth analysis of 'care constellations' (triads of resident, family, and staff), which may address this gap.

The application of the ecological model encompasses factors from both individual and societal levels. Due to the self-report response of the survey instrument, the research focused solely on the perspectives of the residents. The nature of survey data captured the participant's interpretation of their social experience. As such, others' perceptions and the mesosystem and macrosystem influence of these experiences are not available.

The proportion of missing data for the relationship component of the InterRAI survey did present challenges for analysis and subsequent interpretation. Multiple imputation techniques were applied to remove the influence of missing data. The trends of missing data in the personal relationships domain were not significantly related to other variables. The large proportion of missing data on the relationship item alluding to physical affection may suggest that this population does not experience enough physical affection or may simply reflect the private values of this generation. The proportion of missing data may also be attributed to the length of the survey tool. Residents may have

demonstrated response fatigue during the survey process. Many factors (e.g. time of day, medication side effects, hearing challenges) could have influenced the degree to which residents were capable or desired to engage in the survey process.

On the same note, the current research does not capture the perspective of the frailest residents living within long-term care, referred to as silence by proxy (Andrew, 2010). The frailest residents may have been unable to attend information sessions and/or were incapable of consenting to participate. The use of proxies to participate in the survey was not permitted, as the Care and Construction project also had a family survey component in which family members could share their perspectives. It is important to reiterate that MMSE score was not a factor in determining whether or not a resident could participate. While this does provide a sample with a wide range of cognitive abilities, those with higher levels of cognitive impairment were likely unable to consent and/or understand the research process and therefore they were not able to participate.

The language spoken by staff was mentioned as a quality of life barrier by Slettebo (2008), which would be challenging to decipher in the present study, as those unable to speak English were excluded. One can speculate that this could be a challenge in Nova Scotian nursing homes, particularly in urban areas with greater diversity, and in pockets of the province with French Acadian roots. Even if there were a resident and staff member within a facility who both spoke a less common language, it would be challenging to modify the staff schedule to accommodate one resident's needs.

It is important to be mindful of residents' personal preference while interpreting the findings of the present research. Although the sample size included various ages, locations and functional challenges, it should be acknowledged that these findings do not

represent the opinions of all residents in long-term care in Nova Scotia. By the same token, different personality types may experience care environments in vastly different ways. The present research was flexible in its conceptualization of personal relationships. Residents' self-reports likely interpreted relationships with varying standards and values. The extent to which residents desire to develop and maintain close relationships is a personal preference and may or may not be reflected in this research. Although individual variables such as personality and life experience were not captured by the quantitative data, such context was present in some qualitative responses and showed how these components of one's identity could mediate relationship outcomes.

Future Research

Common to secondary analysis, one can contrast the current study versus the 'ideal study'. In the current case, it would have been beneficial to have other conceptually relevant measures at the individual level such as self-esteem, true socioeconomic status incorporating income and/or occupational info, as well as personality. In addition, quantitative information on the size, density, composition and quality of residents' networks would be beneficial context to residents' outcomes on the relationship domain. The exploratory nature of this research provides insight into further variables that can be explored in future research pertaining to relationships in nursing homes.

The existing research focusing solely on resident relationships in long-term care is sparse. In particular, further research should focus specifically on the role of resident-resident relationships in supporting resident quality of life. Given recent media portrayals, and academic inquiries regarding resident altercations (Rosen et al., 2008),

further research is required to understand how to facilitate harmonious congregate living situations. Such understandings could greatly improve the outcomes of resident-resident interactions.

A longitudinal research design could capture a resident's baseline and monitor relationships over time. Research examining the development and maintenance of relationships over time could provide helpful insights into the evolution of the social networks of residents. Such research would depict the trajectory of relationship scores and trends experienced in social networks when transitioning to a long-term care environment. This approach that was effective for Gladstone, Dupuis and Wexler's (2006) in their assessment of family member's roles.

Conclusion

Using an ecological perspective, the present study sought to understand factors influencing residents' relationships within long-term care in Nova Scotia. The differences between facilities were not meaningful predictors of residents' relationships. Features within respective facilities that were influential included comfort, autonomy, food, activities, staff bonding and staff responsiveness. At a practice level, particular attention should be spent on engaging widows and residents over the age of 85, as they were more vulnerable to lower outcomes on personal relationships. The present study demonstrates that much can be done to improve social engagement within existing facilities, and that newer facility designs are not sufficient to foster/improve the relationships of residents within long-term care. Results point to the continual need to challenge the status quo and enable facilities and their staff to provide holistic care, including physical and social

needs. The challenge is also extended to family members, friends, volunteers and communities to socially support and meaningfully engage residents in long-term care.

References

Abbott, S., Fisk, M., & Forward, L. (2000). Social and democratic participation in residential settings for older people. *Ageing and Society, 20*, 327–340.

Agich, G.J. (1990). Reassessing autonomy in long-term care. Hastings Cent Rep, 20(6): 12–17.

Andrew, M. K. (2010). Social vulnerability in old age. In K. Rockwood, H. Fillit & K. Woodhouse (Eds.), *Brocklehurst's textbook of geriatrics and gerontology* (7th ed.,pp. 198-204). Philadelphia: Saunders Elsevier**.**

Andrew, M. K. & Keefe, J. (2013). Social vulnerability among older adults: a social ecology perspective from the National Population Health Survey of Canada: editing.

Andrew, M. K., Mitnitski A., & Rockwood, K. (2008). Social vulnerability, frailty, and mortality in elderly people. PLoS One, 3(5):e2232.

Andrew, M.K., & Mitnitski, A. (2008). Different ways to think about frailty? Am J Med. 121:e21

Andrew, M. K., & Rockwood, K. (2010). Social vulnerability predicts cognitive decline in a prospective cohort of older Canadians. *Alzheimer's & Dementia*, *6*(4), 319–325.e1. doi:10.1016/j.jalz.2009.11.001

Azur, M. J., Stuart, E. A., Frangakis, C., & Leaf, P. J. (2011). Multiple Imputation by Chained Equations: What is it and how does it work? *Int J Methods Psychiatr Res, 20*, 40–49. doi:10.1002/mpr.329.

Baum, F. E., & Ziersch, A. M. (2003). Social capital. *J Epidemiol Community Health, 57*(5), 320-323.

Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine (1982)*, *51*(6), 843–57. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10972429

Black, S. E., Gauthier, S., Dalziel, W., Keren, R., Correia, J., Hew, H., & Binder, C. (2010). Canadian alzheimer's disease caregiver survey: Babyboomer caregivers and burden of care. *International Journal of Geriatric Psychiatry, 25*(8), 807-813. doi: 10.1002

Bronfenbrenner, U. (1976). The Experimental Ecology of Education. *American Educational Research Association, 5,* 5-15.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*. doi:10.1037/0003-066X.32.7.513

Bronfenbrenner, U. (1986). Ecology of the Family as a Context for Human Development: Research Perspectives. *American Psychological Association 22,* 723-742.

Bowers, B. J., Fibich, B. & Jacobson, N. (2001). Practice concepts. Care-as-service, care-as-relating, care-as-comfort: understanding nursing home residents' definitions of quality. *The Gerontologist, 41*(4), 539-45.

Bowers, B., & Nolet, K. (2011). Empowering direct care workers: Lessons learned from The Green House model. *Seniors Housing & Care Journal, 19*, 109-120.

Boyle, G. (2008). Autonomy in long-term care: a need, a right or a luxury? *Disability & Society*. doi:10.1080/09687590802038795

Burack, O. R., Weiner, A. S., Reinhardt, J. P., & Annunziato, R. A. (2012). What matters most to nursing home elders: Quality of life in the nursing home. *Journal of the American Medical Directors Association*, *13*, 48–53.

doi:10.1016/j.jamda.2010.08.002

Buren, S. V. & Groothuis-Oudshoorn, K. (2011). MICE: Multivariate Imputation by Chained Equations in R. *Journal of Statistical Software, 25*(3), 1-68.

Brawley, E. C. (1997). *Designing for Alzheimer's disease: Strategies for creating better care environments.* New York: John Wiley & Sons, Inc.

Canadian Healthcare Association. (2009). New directions for facility-based long-term care. Ottawa.

Canadian Institute for Health Information (2009-2010). CCRS Profile of residents in continuing care facilities. Toronto.

Carstensen, L. L. (1992). Social and emotional patterns in adulthood: support for socioemotional selectivity theory. *Psychology and Aging, 7*, 331–338. doi:10.1037/0882-7974.7.3.331

Chou, S., Boldy, D. P., & Lee, A. H. (2003). Factors influencing residents' satisfaction in residential aged care. *The Gerontologist, 43*, 459-472. doi: 10/1093/geront/43.4.459.

Crispi, E. L., & Heitner, G. (2002). An activity-based intervention for caregivers and residents with dementia in nursing homes. *Activities, Adaptation & Aging*. doi:10.1300/J016v26n04_06

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*(8), 676-684. doi:10.1037/0003-066X.59.8.676

Cohen, M., Murphy, J., Nutland, K., & Ostry, A. (2005). *Continuing care renewal or retreat? BC Residential and Home Health Care Restructuring, 2001-2004.* Ottawa: Canadian Centre for Policy Alternatives. Accessed March 13, 2013.

http://www.policyalternatives.ca/publications/reports/ continuing-care-renewal-or-retreat

Cohen, U., & Weisman, G. (1991). *Holding onto home: Designing environments for people with dementia.* Baltimore: John Hopkins University Press.

Collins, L.M., Schafer, J.L., & Kam, C. M. (2001). A comparison of inclusive and restrictive strategies in modern missing data procedures. *Psychological Methods*. 2001; 6:330–351. [PubMed: 11778676]

Cook, G. (2006). The risk to enduring relationships following the move to a care home. *International Journal of Older People Nursing, 1*, 182–5.

Cropanzano, R. & Mitchell, M. (2005). Social Exchange Theory: An Interdisciplinary Review. J*ournal of Management, 31*, 874. DOI: 10.1177/0149206305279602

Czernochowski, D., Fabiani, M., & Friedman, D. (2008). Use it or lose it? SES mitigates age-related decline in a recency/recognition task. *Neurobiol Aging, 29*(6), 945-958.

Davies, S. (2001). Wanting What's Best for Them: Relatives' Experiences of Nursing Home Entry: A Constructivist Inquiry. Unpublished Ph.D thesis, School of Nursing and Midwifery, University of Sheffield, Sheffield, UK.

Dewing, J. (2004). Concerns relating to the application of frameworks to promote person-centredness in nursing older people. *International Journal of Older People Nursing, 13*, 39–44.

Deutschman, M. (2001). Redefining quality and excellence in the nursing home culture. *Journal of Gerontological Nursing, 27*, 8, 28-36.

Dill, D. (2009). Factors Influencing Recruitment of Continuing Care Assistance to Home

Care in Nova Scotia. (Masters Thesis). Mount Saint Vincent University. Retrieved from Department of Family Studies & Gerontology.

Duncan, M. T., & Morgan, D. L. (1994). Sharing the caring: Family caregivers' views of their relationships with nursing home staff. *The Gerontologist, 34*(2), 235-235.

Dupuis, S. L., & Pedlar, A. (1995). Family leisure programs in institutional care settings: Buffering the stress of caregivers. *Therapeutic Recreation Journal*, *29*, 184–205. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1998-00990-004&site=ehost-live

Enders, C. K. (2010). *Applied Missing Data Analysis.* New York: Guilford Press.

Fancey, P., Keefe, J., Stadnyk, R., Gardiner, E. & Aubrecht, K. (2012). Understanding and assessing the impact of nursing home approach to care and physical design on residents and their families: a synthesis of the literature. *Seniors Housing & Care Journal*, *2*(1), 99-114.

Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). ""Mini-mental state". A practical method for grading the cognitive state of patients for the clinician". *Journal of Psychiatric Research 12* (3): 189–98. doi:10.1016/0022-3956(75)90026-6

Gladstone, J. W., Dupuis, S. L., & Wexler, E. (2006). Changes in family involvement following a relative's move to a long-term care facility. *Canadian Journal on Aging*, *25*, 93–106. doi:10.1353/cja.2006.0022

Gladstone, J.W., & Wexler, E. (2002). Exploring the relation- ships between families and staff caring for residents in long-term care facilities: Family members' perspectives.

Canadian Journal on Aging, 21, 39–46.

Gjerberg, E. (1995). Nursing home quality: different perspectives among residents, relatives and staff, a qualitative study. *Vard I Norden: Nursing Science and Research in the Nordic Countries, 15,* 4, 4-9.

Graham, J.W. (2009). Missing data analysis: making it work in the real world. *Annual Review of Psychology. 60,* 549–576.

Graham, J.W., Olchowski, A.E., & Gilreath, T.D. (2007). How many imputations are really needed? Some practical clarifications of multiple imputation theory. *Prevention Science, 8*, 206–213. [PubMed:17549635]

Grasser, C. (1996). Reciprocity in staff/resident interactions in nursing homes. *Journal of Women and Aging*, *8*, 1, 5-19.

Grau, L., Chandler, B., & Saunders, C. (1995). Nursing home residents' perceptions of the quality of their care. *Journal of Psychosocial Nursing & Mental Health Services, 33*(5), 34-41.

Harel, Z. (1981). Quality of care, congruence, and wellbeing among institutionalized aged. *The Gerontologist, 21*, 5, 523-531.doi: 10.1093/geront/21.5.523

Hertzberg, A., Ekman, S. & Axelsson, K. (2001). Staff activities and behaviour are the source of many feelings: relatives' interactions and relationships with staff in nursing homes. *Journal of Clinical Nursing*, *10*, 3, 380-8.

Hyyppa M. T., & Maki J. (2001). Individual-level relationships between social capital and

self-rated health in a bilingual community. *Prev Med, 32*(2), 148-155.

Iwashyna, T. J., & Christakis, N. A. (2003). Marriage, widowhood, and health-care use. *Social Science and Medicine*, *57*, 2137–2147. doi:10.1016/S0277-9536(02)00546-4

Jackson, E. M. (1997). Dimensions of care in five United States nursing homes: Identifying invisible work in care-giving. *International Journal of Nursing Studies, 34*, 192-200.

Kane, R. A. (2001). Long-term care and a good quality of life: Bringing them closer together. *The Gerontologist, 41*, 293-304. doi:10.1093/geront/41.3.293

Kane, R. A. (2003). Definition, measurement, and correlates of quality of life in nursing homes: Toward a reasonable practice, research, and policy agenda. *The Gerontologist, 43*, 28-36. doi:10.1093/geront/43.suppl_2.28

Kane, R. A., Lum, T. Y., Cutler, L. J., Degenholtz, H. B., & Yu, T. (2007). Resident outcomes in small-house nursing homes: A longitudinal evaluation of the initial green house program. *American Geriatric Society, 55*(6): 832-839.

Kasser, V. G., & Ryan, R. M. (1999). The relation of psychological needs for autonomy and relatedness to vitality, well-being, and mortality in a nursing home. *Journal of Applied Social Psychology, 29*, 935–954. doi:10.1111/j.1559-1816.1999.tb00133.x

Keating, N., & Dosman, D. (2009). Social capital and the care networks of frail seniors. *Canadian Review of Sociology, 46*, 301–318. doi:10.1111/j.1755-618X.2009.01216.x

Keefe, J., Fancey, P., Stadnyk, R., Gardiner, E. et al. (November, 2012). Care and Construction: Assessing Differences in Nursing Home Models of Care on Resident Quality of Life. Nova Scotia Centre on Aging Multidisciplinary Conference on Aging.

Keefe, J. & Fancey, P. (1999). Work and Eldercare: Reciprocity between older mothers and their employed daughters. *Canadian Journal on Aging, 21*(2), 229-241.

Kellett, U. M. (1998). Meaning-making for family carers in nursing homes. *International Journal of Nursing Practice, 4*, 2, 113-9.

Koren, M. J. (2010). Person-centred care for nursing home residents: The culture-change movement. *Health Affairs, 29*, 312-317. doi: 10.1377/hlthaff.2009.0966

Korenman, S., Goldman, N., & Fu, H. (1997). Misclassification bias in estimates of bereavement effects. *American Journal of Epidemiology, 145*, 995–1002.

Lawton, M. P., Fulcomer, M., & Kleban, M. (1984). Architecture for the mentally impaired elderly. *Environment and Behavior*, 16, 730–757. doi: 10.1177/0013916584166004

Lochner K. A., Kawachi I., Brennan R. T., & Buka, S. L. (2003). Social capital and neighborhood mortality rates in Chicago. *Soc Sci Med, 56*(8), 1797-1805.

MacCourt, P., Wilson, K. & Tourigny-Rivard, M.F. (2009). Mental Health Commission of Canada: Guidelines for Comprehensive Mental Health Services for Older Adults in Canada.

MacMillan, R., Copher, R. (2005). Families in the life course: Interdependency of roles, role configurations, and pathways. *Journal of Marriage and Family, 67*(4), 858-879.

Macinko, J., & Starfield, B. (2001). The utility of social capital in research on health

determinants. *Milbank Quarterly, 79,* 3.

Mattiasson A. & Andersson L. (1997). Quality of nursing home care assessed by competent nursing home patients. *Journal of Advanced Nursing, 26,* 1117–1124.

McCallion, P., Toseland, R. W., Lacey, D., & Banks, S. (1999). Educating nursing assistants to communicate more effectively with nursing home residents with dementia. *The Gerontologist, 39,* 546–558. doi:10.1093/geront/39.5.546

McGregor, M. J., & Ronald, L. A. (2011). Residential long term care for Canadian seniors. *IRPP Study*. Retrieved November 1, 2013 from http://irpp.org/wp-content/uploads/assets/research/faces-of-aging/residential-long-term-care-for-canadas-seniors/IRPP-Study-no1.pdf

Misiorski, S. (2003). Cover feature: pioneering culture change in long-term care management. *Nursing Home Magazine*, 26-31.

Monkhouse, C. (2003). Beyond the medical model- the eden alternative in practice: a Swiss experience. *Journal of Social Work in Long-Term Care, 2*, 339-353.

Moss, S. Z., & Moss, M. S. (2007). Being a man in long-term care. *Journal of Aging Studies, 21*(1) ,43-54.

NSHRF (2006). Continuing care strategy long-term care attachment: The new approach to long-term care in Nova Scotia. Retrieved November 6, 2013 from http://www.healthteamnovascotia.ca/files/Continuing_Care_Strategy06.pdf

O'Connor, D., Phinney, A., Smith, A., Small, J., Purves, B., Perry, J. … Beattie, L. (2007). Personhood in dementia care: Developing a research agenda for broadening the vision. *Dementia*, *6*(1), 121–142. doi:10.1177/1471301207075648

Parmenter, G., Cruickshank, M., & Hussain, R. (2012). The social lives of rural Australian

nursing home residents. *Ageing and Society*, *32*(2), 329-353.

Peters, R. (2004). Quality of life: Definitions, measurement, and application to practice. Retrieved from: http://www.coag.uvic.ca/ resources_research_snapshots_qol.htm

Phillips, C., Holan, S., Sherman, M., Williams, M., & Hawes, C. (2004). Rurality and nursing home quality: Results from a national sample of nursing homes. *American Journal of Public Health, 94*, 1717-1722.

Port, C. L., Gruber-Baldini, A. L., Burton, L. B., Baumbarten, M., Hebel, J. R., Zimmerman, S. I. & Magaziner, J.(2001). Resident contact with family and friends following nursing home admission. *The Gerontologist, 42*(5), 589-96.

Powers, B.A. (1988). Social networks, social support and elderly institutionalized people. *Advances in Nursing Science, 10*, 40–58.

Powers, B. A. (1992). The roles staff play in the social networks of elderly institutionalized people. *Social Science & Medicine, 34*, 1335–1343.

Rahman, A. N. & Schnelle, J. F. (2008). The nursing home culture-change movement: Recent past, present and future directions for research. *The Gerontologist, 48*, 142-148.

Rantz, M. J., & Zwygart-Stauffacher, M. (1999). Nursing home care quality: A multidimensional theoretical model integrating the views of consumers and providers. *Journal of Nursing Care Quality*, *14*, 1-16.

Reed J. (1992). Individualized patient care: some implications. *Journal of Clinical Nursing*, *7*, 12-37.

Reed, J. & Payton, V. R. (1997). Understanding the dynamics of life in care home for older people: implications for de-institutionalising practice. *Health and Social Care in the Community, 5,* 261–268.

Rosen, T., Lachs, M. S., Bharucha, A. J., Stevens, S. M., Teresi, J. A., Nebres, F., & Pillemer, K. (2008). Resident-to-resident aggression in long-term care facilities: insights from focus groups of nursing home residents and staff. *Journal of the American Geriatrics Society, 56,* 1398–1408. doi:10.1111/j.1532-5415.2008.01808.x

Ryan, A., & McKenna, H. (2013). 'Familiarity' as a key factor influencing rural family carers' experience of the nursing home placement of an older relative: a qualitative study. *Health Services Research, 13,* 1-10. doi:10.1186/1472-6963-13-252

Schafer, J.L. (2003). Multiple imputation in multivariate problems when the imputation and analysis models differ. *Statistica Neerlandica, 57,* 19–35.

Schafer, J. L., & Olsen, M. K. (1998). Multiple imputation for multivariate missing-data problems: A data analyst's perspective. *Multivariate Behavioral Research*, *33*(4), 545-571.

Seddon, D., Jones, K. & Boyle, M. (2002). Committed to caring: carer experience after a relative goes into nursing or residential care. *Quality in Ageing*, *3*(3), 16-26.

Seeman, T. E., Lusignolo, T. M., Albert, M., & Berkman, L. (2001). Social relationships, social support, and patterns of cognitive aging in healthy, high-functioning older adults: MacArthur studies of successful aging. *Health Psychol*, *20*(4), 243-255.

Slettebø, A. (2008). Safe, but lonely: Living in a nursing home. *Vard 1 Nordon: Nursing Science and Research in the Nordic Countries, 28*, 22-25.

Statistics Canada. (February 07, 2011). From urban areas to population centres. Definitions, data sources and methods. Retrieved Aug 12th, 2013. URL: http://www.statcan.gc.ca/subjects-sujets/standard-norme/sgc-cgt/notice-avis/sgc-cgt-06-eng.htm

Stephens, C., Alpass, F., Towers, A., & Stevenson, B. (2011). The effects of types of social networks, perceived social support, and loneliness on the health of older people: Accounting for the social context. *Journal Of Aging & Health, 23*(6), 887-911. doi:10.1177/0898264311400189

Sund-Levander, M., Grodzinsky, E., & Wahren, L. K. (2007). Gender differences in predictors of survival in elderly nursing-home residents: a 3-year follow up. *Scandinavian Journal of Caring Sciences, 21*(1) 18-24.

Team, R. D. C. (2010). R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing. Retrieved from http://www.R-project.org

Temkin-Greener, H., Zheng, N. T., & Mukamel, D. B. (2012). Rural-urban differences in end-of-life nursing home care: facility and environmental factors. *The Gerontologist, 52*(3) 335-44.

Tucker, J. S., Schwartz, J. E., Clark, K. M. & Friedman, H. S. (1999). Age-related changes in the associations of social network ties with mortality risk. *Psychology and Aging, 14*, 564-571.

Terman, L. M., et al. (1992). Terman Life-Cycle Study of Children with High Ability, 1922-1991. ICPSR08092-v3. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]. doi:10.3886/ICPSR08092.v3

Turner, J. (1987). Social exchange theory: Future directions. In K.S. Cook (Ed.), *Social exchange theory* (pp. 223-238). California: Newbury Park Sage Publications.

Weiner, A.S., & Ronch, J.L. (Eds.). (2003). *Culture change in long term care*. A compilation of the *Journal of Gerontological Social Work, 2*(1/2) and *2*(3/4). New York: Haworth Press.

Werner, P. (2008). Discriminatory behavior towards a person with Alzheimer's disease: Examining the effects of being in a nursing home. *Aging & Mental Health, 12,* 6, 786-794.

Wilde, B., Larsson, G., Larsson, M., & Starrin, B. (1995). Quality of care from the elderly person's perspective: subjective importance and perceived reality. *Aging (Milan, Italy), 7*(2), 140-9.

Williams, C. S., Zimmerman, S., Sloane, P. D. & Reed, P. S. (2005). Characteristics associated with pain in long-term care residents with dementia. *The Gerontologist, 45,* Special Issue I, 68–73.

Wilson, C., Davies, S., & Nolan, M. (2009). Developing personal relationships in care homes: Realising the contributions of staff, residents and family members. *Ageing And Society*, *29*(7), 1041-1063.

Appendices

Appendix A. Resident Recruitment Letter

[INSERT NURSING HOME X LOGO]

Dear Resident,
[Nursing Home X] is working with a team of researchers to better understand the experience of residents, family members and staff at [Nursing Home X]. Dr. Janice Keefe, Professor and Canada Research Chair, Mount Saint Vincent University is the lead researcher on this project, which is called, "Care and Construction: Assessing Differences in Nursing Home Models of Care on Resident Quality of Life."

Since you live here at [Nursing Home X], you are being invited to participate in this study by completing a survey with the assistance of a research assistant from Mount Saint Vincent University. The survey will take about one hour. You will be asked to answer questions about what it is like to live here. If you agree to participate, the research assistant will visit you at [Nursing Home X].

The research assistant will ask you about various aspects of the day-to-day experience of living in [Nursing Home X]. Topics include the physical design and home-likeness of the nursing home, privacy, respect, relationships you have with staff, family and friends, and the activities you enjoy. Family members and staff members of [Nursing Home X] are also being invited to complete a different survey from their own perspective as part of this study.

The study has been reviewed by the Research Ethics Boards at Mount Saint Vincent University, Dalhousie University, Saint Mary's University, University of Prince Edward Island and Capital District Health Authority. It is completely your choice whether you would like to participate in the

survey, and the care you receive here at [Nursing Home X] would not be affected by your decision to participate or not to participate. Your participation will be kept private between you and the research team, and your name would never appear in a report or presentation. We, the nursing home administrators, will never know your responses to the survey questions.

The research assistant will be visiting [Nursing Home X] on [Dates] to complete the surveys with residents. If you know you would like to participate, please fill out the form below and place it in the drop box at the reception desk. The research assistant will speak to you to set up a time to complete the survey while he/she is visiting. If you would like to learn more about the Care and Construction study, there will be an information session in [Room] at [Nursing Home X] on [Date/Time] and you are invited to attend. For more information, you may also contact the project office by telephone at 457-6218, toll-free at 1-877-302-4440, by e-mail at careandconstruction@msvu.ca or visit www.careandconstruction.ca.

I hope you will consider participating in this research. If you do not want to participate, you do not have to do anything.
Sincerely, [Administrator X]

This research is funded by Canadian Institutes of Health Research and Nova Scotia Health Research Foundation.

☐ I am interested in participating in the Resident Survey on Nursing Home Quality of Life.

Name: _____

Room Number:

_____

Phone Number:

_____

Appendix B. Care and Construction Resident Survey

166 Bedford Highway, Halifax, NS, B3M 2J6 902-457-6788

Resident Survey on Nursing Home Quality of Life

A Component of the Care and Construction Study

Date: _____
Case ID: _____
Start Time: _____
Finish Time: _____

INTRODUCTION:
This survey asks you to share *your perspective,* as a resident of a nursing home, on your experience of living in the nursing home. Topics include; physical design and home-likeness of the nursing home, privacy, respect, relationships you have with staff, family and friends, the activities you enjoy, and other general questions related to your experience living here.

If this survey is found, please return to:
Care and Construction Project Office
Nova Scotia Centre on Aging
166 Bedford Highway
Halifax, NS, B3M 2J6
T: (902) 457-6218; 1-877-302-4440
E: careandconstruction@msvu.ca

I'd like begin by asking you a few general questions about yourself.

How old are you? [Select one]
18 to 34
35 to 44
45 to 54
55 to 64
65 to 74
75 to 84
85 to 94
95 or older

What is your gender? _____

What is your relationship status? [Select one]
Never married
Common-law
Married
Divorced/Separated
Widowed

What is the highest grade or level of school that you have completed? [Select one]
8th grade or less
Some high school but did not graduate
High school graduate or GED
Some college/university
College/university graduate
More than 4-year university degree

What is the name of your nursing home? _____

What is the name of your floor, unit/wing or neighborhood? _____

In total, about how long have you lived in *this* nursing home? [Select one]
Less than 1 month
1 month to almost 3 months
3 months to almost 6 months
6 months to almost 12 months
12 months to almost 24 months
24 months or longer

Have you requested or are expecting a transfer to another nursing home?

○	○
No	Yes

[Ask questions from MMSE, transfer answers from questions 1.5 for building & 1.6 for floor of building]

RESIDENT QUALITY OF LIFE (inter*RAI* Survey on Nursing Home Quality of Life©)

First, I am going to ask you about your quality of life. We want to determine how well this facility is providing service to people. There are no right or wrong answers, and the whole discussion concerns what life is like for you here. **[Show participant response cards]**

Privacy Items

First, I'd like to talk with you about privacy. *For each statement please answer with one of the following choices:*
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. I can be alone when I wish.	0	1	2	3	4	8	9
b. When I have company, I can visit in private.	0	1	2	3	4	8	9
c. My privacy is respected when people care for me.	0	1	2	3	4	8	9
d. My personal information is kept private.	0	1	2	3	4	8	9

Food/Meal Items

The items that follow are about food.
For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. I like the food here	0	1	2	3	4	8	9
b. I enjoy mealtimes.	0	1	2	3	4	8	9
c. I get my favorite foods here.	0	1	2	3	4	8	9
d. I can eat when I want.	0	1	2	3	4	8	9
e. I have enough variety in my meals.	0	1	2	3	4	8	9

Safety/Security Items

Now let us talk about safety.

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. I feel my possessions are safe.	0	1	2	3	4	8	9
b. I feel safe when I am alone.	0	1	2	3	4	8	9
c. People ask before using my things.	0	1	2	3	4	8	9
d. I feel safe around those who provide me with support and care.	0	1	2	3	4	8	9
e. If I need help right away, I can get it.	0	1	2	3	4	8	9

Comfort Items

The items that follow focus on your life here.

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. I get the services I need.	0	1	2	3	4	8	9
b. I would recommend ___ (this site/this organization) to others.	0	1	2	3	4	8	9
c. This place feels like home to me.	0	1	2	3	4	8	9
d. I can easily go outdoors if I want.	0	1	2	3	4	8	9
e. I am bothered by the noise here.	0	1	2	3	4	8	9
f. I tend to be happier than most other people.	0	1	2	3	4	8	9

Make Daily Decisions Items

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. I decide when to go to bed and get up.	0	1	2	3	4	8	9
b. I decide how to spend my time.	0	1	2	3	4	8	9
c. I can go where I want on the "spur of the moment."	0	1	2	3	4	8	9
d. I control who comes into my room.	0	1	2	3	4	8	9
e. I can have a bath or shower as often as I want.	0	1	2	3	4	8	9
f. I decide how my money is spent.	0	1	2	3	4	8	9

Respect Items

Now I'd like to discuss how you feel about staff here.

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. Staff pay attention to me.	0	1	2	3	4	8	9
b. I can express my opinion without fear of consequences.	0	1	2	3	4	8	9
c. I am treated with dignity by the people involved in my support and care.	0	1	2	3	4	8	9
d. I am careful about what I say around staff.	0	1	2	3	4	8	9
e. Staff respect what I like and dislike.	0	1	2	3	4	8	9

Responsive Staff Items

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. Staff respond quickly when I ask for assistance.	0	1	2	3	4	8	9
b. My services are delivered when I want them.	0	1	2	3	4	8	9
c. The care and support I get help me live my life the way I want.	0	1	2	3	4	8	9
d. Staff act on my suggestions.	0	1	2	3	4	8	9

Staff-Resident Bonding Items

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. Some of the staff know the story of my life.	0	1	2	3	4	8	9
b. Staff take the time to have a friendly conversation with me.	0	1	2	3	4	8	9
c. Staff talk to me about how to meet my needs.	0	1	2	3	4	8	9
d. I consider a staff member my friend.	0	1	2	3	4	8	9
e. Staff are open and honest with me.	0	1	2	3	4	8	9

Activity Option Items

Now, let us look at how you feel about activities.

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. I have enjoyable things to do here on weekends.	0	1	2	3	4	8	9
b. I do things that keep me mentally active.	0	1	2	3	4	8	9
c. I can take part in activities off the unit.	0	1	2	3	4	8	9
d. I participated in meaningful activities in the past week.	0	1	2	3	4	8	9
e. If I want, I can participate in religious activities that have meaning to me.	0	1	2	3	4	8	9

Personal Relationships (Presence of Friends) Items

We will talk about your relationships with others here.

For each statement please answer with one of the following choices:
Never, Rarely, Sometimes, Most of the time, Always

	Never	Rarely	Some-times	Most of the Time	Always	Don't Know	Don't want to Answer
a. Another resident here is my close friend.	0	1	2	3	4	8	9
b. I have people who want to do things together with me.	0	1	2	3	4	8	9
c. People ask for my help or advice.	0	1	2	3	4	8	9
d. I play an important role in people's lives.	0	1	2	3	4	8	9
e. I have opportunities for affection or romance.	0	1	2	3	4	8	9

General Well being

This next section is about your general wellbeing and will include questions about the activities you do on a daily basis and how you feel about those activities.

How would you describe your level of mobility? [1] [**NOTE:** If the individual is in a wheelchair, encourage them to choose the answer that feels most appropriate to them, please make a note that they are in a wheelchair]

[Select one]

I have no problems walking about

I have some problems walking about

I am confined to bed

How would you describe your ability to perform self-care? [2] [Select one]

I have no problems with self-care

I have some problems washing or dressing myself

I am unable to wash or dress myself

How would you describe your ability to perform usual activities? [4] [**Note:** If definition of usual activies is required: activities such as housework, leisure, social activities,work (paid and unpaid), study,. ´Usual´ means activities carried out on a regular basis, but not necessarily on a daily basis. The activities should be "usual for you"]

[Select one]

I have no problems with performing my usual activities

I have some problems with performing my usual activities

I am unable to perform my usual activities

How would you describe your level of pain? [2] [Select one]

I have no pain or discomfort

I have moderate pain or discomfort

I have extreme pain or discomfort

How would you describe your level of anxiety and/or depression?[2]

[Select one]

I am not anxious or depressed

I am moderately anxious or depressed

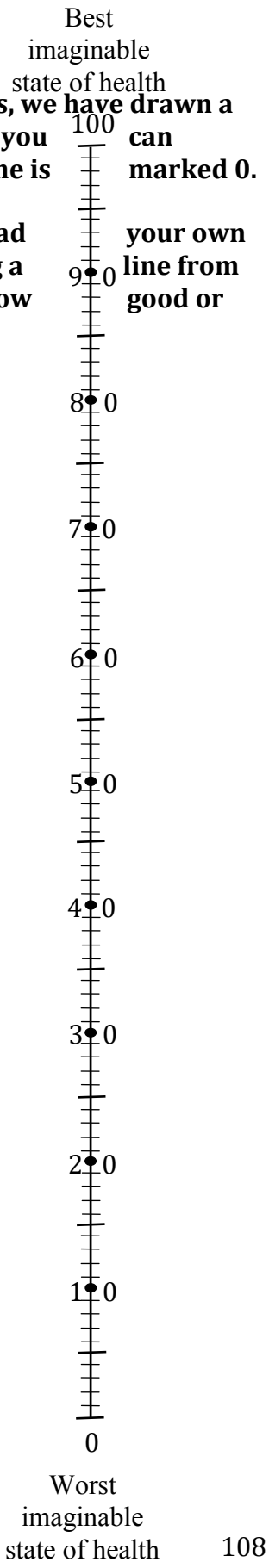
I am extremely anxious or depressed

[1] Full EQ-5D Scale

To help people say how good or bad their state of health is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.

We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your state of health is today.[1]

Your own state of health today



Fear of Falling[2]
On a scale from 1 to 10, with *1 being very confident and 10 being not confident at all*, how confident are you that you do the following activities without falling? [Show reponse card to participant]

	Very confident									Not confident at all	Don't Know	Don't want to Answer
Taking a bath or shower.	1	2	3	4	5	6	7	8	9	10	88	99
Reach into cabinets or closets.	1	2	3	4	5	6	7	8	9	10	88	99
Walk around the home.	1	2	3	4	5	6	7	8	9	10	88	99
Prepare meals/ snacks not requiring carrying heavy or hot objects.	1	2	3	4	5	6	7	8	9	10	88	99
Getting in and out of bed.	1	2	3	4	5	6	7	8	9	10	88	99
Answer the door or telephone.	1	2	3	4	5	6	7	8	9	10	88	99
Getting dressed and undressed.	1	2	3	4	5	6	7	8	9	10	88	99
Personal grooming (i.e., washing your face).	1	2	3	4	5	6	7	8	9	10	88	99
Getting on and off the toilet.	1	2	3	4	5	6	7	8	9	10	88	99

Physical Activity[3]
Do you engage in regular exercise?

○ No ○ Yes

If Yes, then:
How often? [Select one]
3 times a week
Once a week
Less than weekly

[2] Falls Efficacy Scale (complete scale)
[3] From Canadian Study of Health and Aging (Davis et al, 2001)

Type of physical activity? [Select one]
More vigorous than walking
Walking
Less vigorous than walking

Do you feel that you would have the opportunity to increase your level of physical activity level if someone recommended you do so?[4]

○ No ○ Yes

Would you like to increase your level of physical activity?

○ No ○ Yes

Think about the amount of your usual physical activity during the past few years. Choose from five response options: [Select one]
Reduced a lot
Reduced a little
Remained as before
Increased a little
Increased a lot

Fatigue

How much influence does fatigue have on your daily life (the everyday life at home and at work) and on your relationships? **[Ask participant to mark spot on the line to indicate level of influence]**

[4] Rantakokka et al. (2010). Unmet Physical Activity Need in Old Age.

Experience in the nursing home

In this section, we would like to ask you about your experience in the nursing home. Some of the questions may sound similar. We are trying to understand how similar parts of living in the nursing home impact different parts of your life.

Thinking about your relationships with friends and family…**[Definition: Relationships includes visits with them, communication with them (phone, letters, email)]**

What features of the nursing home support those relationships with friends and family? [**Definition**: features of the nursing home includes layout of the building, space, furniture, décor]
Please print: _____
_____

What features of the nursing home challenge those relationships with friends and family?

Please print: _____
_____

What features of the way care is provided here support those relationships with friends and family?
Please print: _____
_____

What features of the way care is provided here challenge those relationships with friends and family?
Please print: _____
_____

Thinking about the relationship between you and the staff who work with you…**[Definition: Relationships includes interactions when care is given, other interaction (casual interactions), communication with staff]**

What features of the nursing home support those relationships with staff?
Please print: _____
_____

What features of the nursing home challenge those relationships with staff?
Please print: _____
_____

What features of the way care is provided here support those relationships with staff?
Please print: _____
_____

What features of the way care is provided here challenge those relationships with staff?
Please print: _____
_____

Now thinking about the activities you take part in here… **[Definition: Activities include exercise, social/activity groups, classes/lectures, games (bingo, cards, etc), parties, religious services, arts/crafts)**

What features of the nursing home support you to take part in activities [i.e., make it easier]?
Please print: _____
_____

What features of the nursing home challenge you to take part in activities [i.e., make it harder]?
Please print: _____
_____

4.3.c What features of the way care is provided here support you to take part in activities [i.e., make it easier]?
Please print: _____
_____

What features of the way care is provided here challenge you to take part in activities [i.e., make it harder]?

Please print: _____
_____

Now thinking about your mood…

What features of the nursing home have a positive impact on your mood?
Please print: _____

What features of the nursing home have a negative impact on your mood?

Please print: _____
_____

What features of the way care is provided here have a positive impact on your mood?
Please print: _____
_____

What features of the way care is provided here have a negative impact on your mood?
Please print: _____
_____

How would you describe your overall quality of life? [Check one]

- Very poor
- Poor
- Neutral
- Good
- Very good

Given your health status, how would you describe your overall experience of living in this nursing home? [Check one]

- Very poor
- Poor
- Neutral
- Good
- Very good

Do you have any other comments or thoughts you would like to share about your experience of living in this nursing home?

Please print: _____

Appendix C: Mini-Mental State Exam (MMSE)

Capital Health

Mental Health Program

MINI-MENTAL STATE EXAMINATION

Education:_____ Date:_____ Score:_____

Occupation:_____ Examiner:_____

Write response next to each question. Ask each question a maximum of 3 times, ensuring that the question is heard. If no response, score 0. Do not give hints (e.g. head shaking, etc.)

1. ORIENTATION TO TIME **Score**

a. **What year is this?** _____ _____ (1)
Accept exact answer only.

b. **What season is this?** _____ _____ (1)
During the last month of the old season, or the first month of the new season, accept either season.

c. **What month of the year is this?** _____ _____ (1)
On the first day of new month, or last day of the previous month, accept either month.

d. **What is today's date?** _____ _____ (1)
Accept previous or next date, e.g. on the 7th accept 6th or 8th

e. **What day of the week is this?** _____ _____ (1)
Accept exact answer only.

2. ORIENTATION TO PLACE

a. **What country are we in?** _____ _____ (1)
Accept exact answer only.

b. **What province are we in?** _____ _____ (1)
Accept exact answer only.

c. **What city are we in?** _____ _____ (1)
Accept exact answer only.

d. **What is the name of this hospital?** _____ _____ (1)
Alternate: What is the street address of this house?

e. **What floor are we on now?** _____ _____ (1)
Alternate: What room of the house are we in?

8D0178MR_02_06 Page 1 of 4

3. REGISTRATION

I am going to name 3 words. After I have said all 3 words, I want you to repeat them. Remember what they are because I am going to ask you to name them again in a few minutes.

BALL CAR MAN

Please repeat the 3 items. ____ (3)
Score 1 point for each correct reply on the first attempt; if not correct, repeat all 3 items until they are learned (maximum of 5 times).
Standardized alternatives: Boll, Jar, Fan / Bill, Tar, Can / Bull, War, Pan

4. CONCENTRATION/ATTENTION

Spell WORLD; now spell WORLD Backwards ____ (5)
Count the number of correct letters before the first mistake (e.g. DLORW - 2).

5. RECALL

What were the 3 words? _____ _____ _____ ____ (3)
Score 1 point for each correct response regardless of order.

6. What is this called? _____ ____ (1)
Show wristwatch; accept wristwatch or watch, not clock, time, etc.

7. What is this called? _____ ____ (1)
Show pencil (pen); accept pencil (pen) only.

8. Repeat this phrase after me: "No ifs ands or buts" (1)
Repetition must be exact.

9. Read the words on this page and do what it says ____ (1)
Show enlarged CLOSE YOUR EYES. If patient does not close eyes, repeat instructions up to 3 times. Score 1 point only if patient closes eyes.

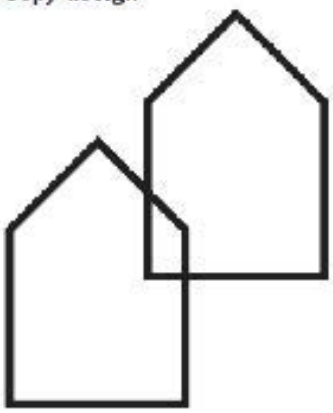
10. COMPREHENSION (3)
Ask if the patient is right or left handed; if the patient is right handed, say
"Take this piece of paper in your left hand, fold the paper in half with both hands, then put the paper on the floor"
Score 1 point for each instruction executed correctly.

11. Write a sentence ____ (1)
Score 1 point for a complete sentence that makes sense; ignore spelling errors/handwriting.

12. Copy this design (1)
Score 1 point only if there are two 5-sided figures intersecting to create a 4 sided figure.

Write a sentence

Copy design



CLOSE YOUR EYES

References:

Folstein M., Folstein S., and McHugh P., *Mini-Mental State: A Practical Method for Grading the Cognitive State of Patients for the Clinician.* **Journal of Psychiatric Research** (1975) 12, 189-198.

Molloy D.W., Alemayehu E., and Roberts R., *Reliability of a Standardized Mini-Mental State Examination Compared With the Traditional Mini-Mental State Examination.* **Am J Psychiatry** (1991) 148, 102-105.