

**Exploring the Role of Environments
of Adult Day Programs on the
Well Being of Older Adults With Dementia**

by

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Abstract

Despite the existence of substantial research on physical environment of long-term care facilities, there is a scarcity of empirical research on the physical environment of community-based programs such as adult day centres. In particular, there is limited evidence on the role of environmental design of those settings in supporting (or hindering) the needs of older persons with dementia. This study explores the effect of physical and social environments of adult day program setting on clients' activities and well-being in the context of purpose-built versus non-purpose-built facilities. A mixed-method approach was used that included: physical environmental assessment, in-depth interviews with staff members and ethnographic observations. Four themes emerged: 'Design Matters', 'Social Connectedness', 'Staying Active', and, 'Community-based Health Services'. The findings demonstrate the need for adult day programs' integrated and restorative services, which provide appropriate care and social contact for frail older adults, thereby fostering independence and healthy living.

Keywords: Older adults; adult day programs/centres; dementia; built environment; informal caregivers; community care services

I dedicate this work to my grandmother, Mrs. Jean Hunt (nee Falconer), who despite living out her days in a residential care home and being confined to a wheelchair because of crippling rheumatoid arthritis, continued to be an powerful advocate for the health and well-being of older people in her community.

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Chapter 1.

Introduction

In Canada, more than half a million people live with Alzheimer's disease or a related dementia (ADRD). The number of people living with ADRD is expected to more than double within the next 25 years, affecting over 1.4 million Canadians and their families (Smetanin et al., 2009; Statistics Canada, 2013). As one would expect, the cognitive deterioration associated with dementia challenges the independence of those living with the disease, and leads to increased care needs. With higher numbers of people in the 85+ years category, and a greater prevalence of dementia and other chronic conditions, the home has increasingly become a context for long-term care, with the burden of care provided mostly by family members and friends (Prince, Bryce & Ferri, ADI World Alzheimer Report, 2011).

It is estimated that half of those living with dementia live in the community, and this proportion is increasing (ADI World Alzheimer Report, 2011; Cranswick & Thomas, 2005). 'Aging in place', has become a normative goal, and often there is consensual preference and commitment from family and other informal caregivers to help their aging family member stay at home (Cutchin, 2003). In spite of this motivation, advanced dementia is associated with extreme functional disability, behavioural problems, and increased dependence on others (Prince, Bryce & Ferri, ADI World Alzheimer Report, 2011). Caregivers of people with dementia are likely to have higher-than-normal levels of stress and burden and to report higher levels of depression and fatigue (Mason et al., 2007). Researchers have been focusing on behavioural symptoms associated with Alzheimer's disease (AD) because of: their frequency of occurrence; negative caregiver reactions associated with the behaviours; their predicting institutionalization; and, potentially treatable factors associated with occurrence of these behaviours (Farran et al., 2007, Pinquart & Sorensen, 2003). Many countries have developed dementia

strategies to address the challenges caregivers face; however, Canada does not have such a strategy.

The vast majority of caregivers are what gerontologists refer to as “informal caregivers”—or — in other words, unpaid persons. In the past, caregivers were mostly spouses, but there is a trend for other family members (usually daughters) and friends becoming primary caregivers (Vasquez, 2006). Although the role of caregiver may be satisfying for people, and social supports can mediate negative effects, caregiving extracts a physical and emotional toll from family caregivers. Extensive studies have linked the caregiver role with negative health and mental health consequences including: anxiety, sleep disturbance, higher than usual psychotropic drug use, social isolation, family stress, burden, depression, lower levels of well-being, lower quality of life, and increasing mortality (Colvez, Joel, Ponton-Sanchez, Royer, 2002; Iecovich, 2008; Ostwald et al., 1999). According to the 2008/09 Canadian Community Health Survey, an estimated 3.8 million Canadians who were 45 or older were providing informal care to an older person and more than half reported challenges due to caregiving, including financial and employment-related problems. Consequently, consumer demand is increasing for flexible, responsive home and community-based services.

At the same time, concern that population aging will be accompanied by escalating public health care costs has focused researchers' attention on those factors that keep older persons independent, productive, socially engaged, and healthy. Studies have confirmed positive associations between social engagement and various aspects of older adults' physical and cognitive health highlighting the importance of interventions that increase social engagement and promote better health (Mitka, 2001; Rozanova, Keating & Eales, 2012). Most Western societies provide community care services that aim at maintaining or improving the functional abilities and well-being of vulnerable members of their aging populations, thereby lowering the use of institutional care services and maximizing health. One such service targeted at promoting active social engagement, autonomy and quality of life for older adults and their caregivers are adult day services. These community-based, group program interventions are designed to meet the needs of functionally and/or cognitively impaired older adults and their caregivers through individualized care planning. Research has shown that this

community service intervention plays an important role in maintaining and improving the quality of life of both the older adults and their caregivers (Black et al., 2010; Molzahn, Gallagher & McNulty, 2009; Schmitt, Sands, Weiss, Dowling & Covinsky, 2010).

Over the past decade, the National Adult Day Services Association has increased its advocacy of the use of adult day care services by families of those persons who have dementia. Compared with the public costs of institutionalization, adult day services' ability to provide cost-efficient care has resulted in a proliferation of day service programs (Hartle, NADSA, 2010; Moore, 2002). Interestingly, although the benefits of adult day service programs have been well documented, there has been very little research exploring the built environments of such programs and they remain a poorly defined 'place type' (Brown, 2012; Moore, 2002). The term 'built environment' includes the physical, social and cultural (man-made) surroundings that provide the setting for human activity. For the purposes of this research study, it is important to note the transactional relationship between people and their environment: people affect environment and, at the same time, environment affects people, both subjectively and objectively.

In their book, *Designing a Better Day: Designing for Adult and Dementia Day Services Centers*, Moore, Geboy and Weisman (2006) define place type as "the generic categories of physical settings created to serve specific programmatic needs, often for specific populations, and identified by unique categorical names". Because adult day program settings are a fairly recent phenomenon relative to other healthcare place types, many people are still unfamiliar with adult/dementia day services or the purposes they serve. The *Metlife National Study of Adult Day Services (2010)* found the number of years adult day service centres have been in operation ranges from 50 years to less than one year. Being that adult day centres are considered an 'emerging place type' – architecturally, functionally, organizationally, and experientially—design experts continue to search for planning, programming and design solutions to problem situations (e.g. crowded spaces, auditory overstimulation, lack of privacy, or, even more serious situations such as elopement) (Moore et al., 2006).

This is important given the widespread agreement that the built environment plays a role in facilitating positive quality of life, especially for older people experiencing declining health and/or dementia (Devlin & Arneill, 2003). In his groundbreaking work, *'Notes on the Social Organization of Senility'*, Gubrium (1978) challenged traditional views of senility, or what is now commonly referred to as 'dementia', when he suggested that the meaning and interpretation of dementia depends on context or 'place'. In other words, dementia should not be assumed to be pathological and individual, organic in etiology, and best treated by medical authority (this focus often leading to the use of psychotropic or physical restraint to mitigate negative behaviors). Gubrium (1978) suggests that the activities of people, the physical setting, and most importantly the meaning, or shared understanding, of the place are critical in dementia care. It follows that an adult day service program operates within, and is affected by an environment which, depending on its characteristics, can influence the development of relationships, the quality of care, and ultimately, the well-being of the adult day care participants.

Within the gerontological literature of environmental behavioural studies, Lawton and Nahemow's ecological model of aging remains the most influential conceptualization of "environmental fit" (Lawton, 1989; Moore, 2005). Environmental fit has been defined as "the degree to which the needs of a person are congruent with the capability of the environment to meet those needs" (Moore, 2005, p. 331). The theory asserts that positive, or adaptive, behaviour is associated with the goodness of fit between the person and the environment. As people age, they continue to employ adaptation processes to achieve person-environment fit (P-E Fit). Researchers concerned about the quality of care in long term care facilities have found that when physical environments are well designed, they can significantly compensate for decreased cognitive ability and can greatly impact the behavioural and psychological well-being of people with dementia (Brown, 2012; Moore et al., 2006). Conversely, when an environment is poorly designed, maladaptive behaviours and adverse effects result and has been found to negatively affect the individual with dementia, the family and staff (Day et al., 2000, Jones & van der Eerden, 2008).

Since the early 1980's, numerous books and articles offering design guidelines have been published to instruct architects and care providers on how to enhance safety,

autonomy, home-likeness, privacy, etc. in dementia care facilities (Fleming & Purandare, 2010; Day, Carreon & Stump, 2000). Design recommendations related to the design of the physical environment and the well-being of people with dementia are based on empirical research findings as well as practical experience of designers or facility administrators (Day et al., 2000). Despite the research initiatives in long-term care and hospital settings, there has been very little consideration given to design of community-based service environments such as adult day program centres, and how environmental design of those settings could support (or hinder) the needs and behaviours of persons with dementia (Moore et al., 2006). In terms of outcomes, an important question is whether or not participants perceive that the adult day program improves their physical, social, and emotional functioning. Health-related quality of life (HRQOL) is a multidimensional measure that assesses individuals' perceptions of their functional limitations as it relates to their physical, social, and emotional functioning. It may be a key measure to assess adult day services outcomes because it potentially could inform individual care plans and quality assessments (Schmitt et al., 2009).

Although there are a variety of measures for use in the evaluation of health care environments and their suitability for people with dementia, thus far, researchers have focused primarily on HRQOL outcomes which address the clinical indications of illness or disease (the signs and symptoms) as opposed to the broader, distal outcomes that may require a greater knowledge of the external factors that influence overall social and psychological well-being and ultimately, life satisfaction. Therefore, architectural and interior design (or re-design) of adult day program centres, although an external factor and corollary to care of people with dementia, has not garnered the requisite attention (Moore et al., 2006). Arguably, adult day service programs could prove to be more effective if researchers adopted specific measures for health-related outcomes along a 'proximal-distal causal continuum' including distal outcomes such as anxiety and depressive symptoms, as well as targeted, proximal outcomes such as maximizing independence/control. Failure to assess all levels of outcomes could lead to a serious underestimation of an adult day programs (the social and physical environment) effects.

The heterogeneity of funding sources, physical environments, programs and participants creates challenges in defining and measuring participant outcomes of adult day programs. Given the competition for scarce resources for community-based health care services there is a need for more effective evaluations and documentation of the effect of the services. Adult day programs, like other providers of long-term care, are moving towards outcome-oriented data collection and evidence based funding (Dabelko & Zimmerman, 2011). The purpose of this study is to explore potential variation in the planned activities, healthy behaviours and social interactions between older adult client groups in two adult day care sites with different physical environmental features. A pragmatic approach is employed in this inquiry: the two places for adult day care services were analyzed systemically—both elementally and holistically— with the intention of creating knowledge in the interest of change and improvement in the older adult's experience in such settings. A comparison of the properties and attributes of the two adult day care settings should demonstrate how different physical settings influence place experience. The study will attempt to analyze the complex set of processes that is part of the emergent person-place whole. The research questions:

- 1) What characteristics of the physical and social environment of an adult day program affect adult day service clients' activities and well-being?
- 2) What is the comparative influence of the different physical environmental features of each adult day facility on clients' activities and well-being?

Chapter 2.

Conceptual Framework

A key component in the conceptual framework presented in this research study is the concept of place. A “place”, in this case an adult day services centre, is a ‘socio-physical’ unit with three components: people (activity), program and physical setting. At the intersection of these three components is “place experience”, a place-specific form of comprehension that emerges from the interaction of these components (Moore et al., 2006). Because place components are interrelated, if one component changes, the whole place changes, and so does the place experience. For example, a place for the provision of adult day services may be experienced positively as “homelike” and “friendly”, or negatively, as “confusing” and “constraining”.

The framework for this research study is roughly concordant with Moore’s (2000) elaborate conceptualization of place that was integral to research that examined adult day care as a place type, and compared the “hidden programs” of three adult day care places serving cognitively impaired populations. Having accepted Gubrium’s (1978) argument to pursue a better understanding of the relationship between place and cognitive impairment, Moore’s (2000) work showed how both place and a place’s “hidden program” are critical concepts to understanding the experience of cognitive impairment. In his work, Moore utilized the following definition of place:

“Place is a milieu that has a physical setting within which activities occur—which can be thought to be carried out by people of various social worlds (i.e. “place participants”)—and has an inherent yet largely hidden program that relates the two and forwards the underlying purpose(s) of the place.”

Similar to Moore’s research, this study is situated in the pragmatic philosophy as espoused by classical pragmatists such as William James, John Dewey and G.H. Mead. Fundamentally, ‘Deweyan’ theory is grounded in human experience, and place is both

the generator and context for experience and action. Human experience eschews subject-object dualism, and assumes a constant, and temporal connection (also known as integration process) between persons and environments. Pragmatic epistemology is concerned with an instrumental view on knowledge; that it is used in action for making a purposeful difference in practice. Pragmatists also emphasize the importance of specific contexts for inquiry and understanding, by both the social participants and the researchers. While Mead suggested that humans are not only purposeful, but also assumed to be social by nature, Dewey suggested the concept of the situation. Situations provide the larger context for understanding experience; they are examples of the “qualitative unity of continuously developing experience” (Alexander 1987, p. 105, as cited by Cutchin, 1999). Although Dewey recognized that humans are frequently involved in habitual actions; that is, behaviour that is repeated due to relative stability in our situations, eventually change or conflicts arise that cause people to reflect and act. Meaningful action can then be directed at solving the individual and social problems in the situation. In other words, it is through interacting with others that shared purposes are defined and then forwarded through co-action. The ideal result is personal or group activity that re-integrates the situation (person-place whole) based on local, place-based values and morals (Cutchin, 2003). It is important to understand that the elimination of place-based problems (place integration) is never complete. Practitioners need an understanding of why problems arise in a place, where the conflicts exist, and the value and meaning of action to resolve them.

In his work related to health geography and aging-in-place, Cutchin (2003) refers to “geographical pragmatism”, which is a theoretical orientation derived from a combination of geographical theory and the philosophy of John Dewey. A complement to phenomenological, transactional and ecological perspectives, geographical pragmatism provides a useful structure for this inquiry. Geographical pragmatism is similar to the transactional point of view where person and environment are mutually defining and redefining. What is important in a transactional relationship is the influence of assumptions and intentional factors on perception. The significance assumed by different happenings for different people depends on the purpose people bring to the occasion and the assumptions they have of the purpose and probable behaviour of the others involved. Geographical pragmatism is slightly different than Lawton’s ecological

theory of aging because it emphasizes the social nature of thought and action, and de-emphasizes more behaviouristic and mechanistic views of 'environmental press' and 'adaptation' (Cutchin, 2003). And, as mentioned previously, it avoids the subject-object dualism that remains in the ecological view. In sum, geographical pragmatism establishes a holistic and action-based perspective on place experience by focusing on the role of place: the medium of experiences and the basis for actions, morals and meanings (Cutchin, 2003).

Moore's studies (2000, 2002) also recognized that shared purposes often remain unstated, resulting in situated activity (or a program) that attempts to ensure effective use of the setting. This system of relationships that structure a program can also be understood as "place rules" (Canter, 1991, as cited by Moore, 2000). Canter's concept of place rules may be conceptualized as a consensual aspect of environmental press, interpreted largely through the observation of patterns of activity within a given physical setting (Moore, 2005). Place rules can be explicit or implicit. Examples of explicit place rules are: hours of operation or, the formal agenda for the day. The implicit place rules are what Moore refers to as the place's "hidden program". It is the system of relationships, usually taken for granted, that gives the building its socio-physical form and connects it to the rest of society (Moore, 2000). When the implicit rules are aggregated together in clusters forwarding a given purpose, they describe patterns that constitute the hidden program. An example of an implicit purpose that is common to the life experience in many adult day centres is a coercive constraining of the utilization of opportunities and the exercise of choice by participants" (Moore, 2002). The challenge for researchers and health care providers is to ensure that the environment of an adult day centre is not implicated in a hidden program that contradicts the therapeutic needs and intentions of older people with dementia.

Of course, as people age, the demands of place become amplified because of dissipating intellectual and physical capabilities to meet the demands. This study furthers the inquiry exploring the connection between the concept of place and the dementia experience. With regard to environments for people with dementia, the *Integrative Model of Place for People with Dementia* developed by Calkins and Weisman (1999) is a useful model for adult day care places. Calkins and Weisman suggested that

a place could be modeled as having four environments: individual, social, organizational, and physical. Moore's (2000) conceptual framework is a reconfiguration of the Calkins and Weisman model, and is situated within a given institutional context, conceptualized as including regulatory and historical dimensions.

Each of the environmental components may be further understood in terms of properties and attributes. Calkins and Weisman (1999) suggested that attributes are different in quality from properties: properties describe discrete elements of each component of place; and, attributes are global assessments made of the whole place. Thus, environmental attributes, social climate and organizational culture are all attributes of the whole place. Properties are objective characteristics such as floor area, or the presence of windows; and, attributes are characteristics of the whole person environment system such as providing choices or fostering independence. Studying places in terms of both properties and attributes therefore reflect the systemic perspective in which phenomena—in this case a place for adult day care—are to be studied both elementally (properties) and holistically (attributes).

Having established a pragmatic approach is appropriate for this research project, two places for adult day care will be analyzed systematically—both elementally and holistically— and the inquiry should create knowledge in the interest of change and improvement in the older adult's evolving situation. A comparison of the properties and attributes of the two adult day care settings should demonstrate how different physical settings influence place rules, and ultimately, place experience. The study will attempt to analyze the complex set of processes that is part of the emergent person-place whole; in particular, the creative social effort to re-integrate the whole in a meaningful way when conflicts arise.

Chapter 3.

Literature Review

An extensive search for empirical studies related to adult day program services was conducted in order to develop an understanding of the topic and to provide direction for the research agenda. In order to identify studies for review, a keyword search was conducted within several academic databases including: Ageline, PsychoINFO, Medline, CINAHL, PsychoArticles, Mental Measurements Yearbook and Health Source: Nursing/Academic Edition. The search terms and keywords used were: “adult day centres/centers”, “adult day services”, “community care services”, “dementia care”, “family/informal caregivers”, “caregiver stress”, “caregiver intervention” and “caregiver burden”. Relevant articles were identified and assessed by title and review of the abstract. In order to limit the scope of the review to current knowledge studies included in this paper, with the exception of a few ‘keystone’ articles, were published in the year 2000 or later. Additional inclusion criteria for this study was as follows: (a) a report of empirical research, (b) written in English, (c) published in peer-reviewed journals, and, (d) provided information about typical adult day centre programs within what is generally understood as the ‘social or combination model’, as opposed to the ‘medical model’. The following section is an overview of the key research findings.

3.1. Adult Day Services

Adult day care services are one of a number of long-term care options that became more widely available in the 1970s as health care expanded to encompass a variety of home- and community-based settings and services. Adult day care services provide a coordinated program of professional and compassionate services for adults in a community-based group setting. Services are designed to provide social and some health services to adults who need supervised care in a safe place outside the home

during the day. Adult day services also offer a mid-range level of care during any part of a day (but less than 24-hour care) and, like home care, are not intended to supplant informal caregiving. Attendance at such programs provides a period of respite to family caregivers, and spouse and non-spouse caregivers perceive that adult day services afforded them time off from caregiving responsibilities, which allowed them to work, pursue leisure activities, or attend to other family responsibilities (Patterson, 2001). Also, caregivers of past participants perceived that adult day services allowed them to keep their loved one at home longer (Patterson, 2001). Patterson's (2001) findings were consistent with other studies that have found that respite has a positive effect on family caregivers. Although previous studies have not always demonstrated that adult day services delay nursing home placement (Dabelko & Zimmerman, 2011), there is some research to support this relationship (Cho & Chiriboga, 2009; Weissert & Hedrick, 1994).

The majority of centres are open 5 days a week from 8 - 9.5 hours. Most adult day programs share the distinguishing characteristics of three broad-based models: the medical model, the social model, and the combined model (Dabelko & Zimmerman, 2011). The 'medical model' or day hospital includes skilled assessment, treatment and physical rehabilitation goals and clinical practitioners administer rehabilitative physical, occupational, and speech therapy. The 'social model', centre focuses on socialization and preventative services. The adult day care or 'combined model' has elements of both a social and medical model depending on individual client needs and usually includes: transportation, socializing and recreational programs, some health care services and nutritious snacks/meal (Dabelko & Zimmerman, 2011; Weissert et al., 1990). Most adult day care centres are 'combination models' that provide a combination of social and medical services. Although the term 'dementia day care' has been used to describe a subset of adult day centres (ADCs) that provide service for the cognitively impaired, the majority of ADCs—an estimated 95 percent—provide care to participants with dementia (Moore et al., 2006). The terms: adult day care, adult day centre and adult day program are used interchangeably in the literature.

The average enrolment at adult day service centers is 42, with daily attendance of about 25 participants (most clients come 2-3 days a week and some attend for half day only) (Bellome & Cummings, 2005). Clients in a social or combination model

program are a heterogeneous group with various physical, cognitive, or social impairments. Findings from one study revealed that the majority had limited communication deficits and low rates of incontinence, but notable cognitive impairment (Savard, Leduc, Lebel, Beland & Bergman, 2009). Another study found many program participants require assistance with toileting, eating and ambulating (Bellome & Cummings, 2005). Participant profiles demonstrate that without adult day services, clients having chronic health conditions and functional impairment could be forced into long term care facilities. The primary reason given for discharge from an adult centre program is placement in a long-term care facility. The second most common reason for leaving the day centre is death, and third is a decline in functional status (Nadesh, 2003). Discharge data analyzed by Jennings-Sanders (2004) suggested that participants required more intense medical or supportive care (or both).

Depending on the program centre, the average age of day services clients is 72 years, but the age of participants can range from 18 to 109 years (Jennings-Sanders, 2004; Nadesh, 2003). Findings from the Metlife National Study of Adult Day Services in the US showed approximately 69% of participants were age 65 and older, reflecting the role adult day services plays in serving older adults (Anderson, Dabelko-Schoeny & Johnson, 2012). The majority of clients have some memory impairment, with over half suffering from dementia (Jennings-Sanders, 2004; Nadesh, 2003; Savard et al., 2009). A study by Cohen-Mansfield et al. (2001) found the health of participants in adult day centers to be similar to the community-dwelling elderly population in most health indicators, but that participants suffered from much higher rates of dementia and associated disabilities, and had a higher rate of dependency in IADLs. Adult day centres also reported that a substantial number of participants had serious and often disabling conditions, such as Parkinson's disease and stroke (Anderson et al., 2012). Other ADC clients are frail older people who may have multiple, chronic health problems, people with developmental or physical disabilities, or people who have some psychiatric disorder. In terms of mental health, adult day services centres have become facilities with a primary mental health function with one in four participants (25%) having some type of chronic mental health condition (almost double the 14% estimate in the 2002 Metlife Study) (Anderson et al., 2012; Cohen-Mansfield et al., 2001).

A study examining day care centre attendance over a 6-month period at an adult day centre in Quebec, Canada, found that participants had characteristics typical of other day services programs (Savard et al., 2009). Participants were mostly women and a high proportion (almost half) was widowed. Close to 40% of the participants were married and of those, almost all had spouses as a primary caregiver. Caregivers were primarily women whose functional capacities were intact, and children (daughters and sons) were the main caregivers for 46% of the participants. Close to one-third of the care recipients lived with an adult daughter or son. About half of the participants in an adult care program receive additional home care services for ADLs and IADLs, and 25% need assistance on ADC attendance days. Functional capacity scores indicated a variety of independence levels, which is typical of other day service settings (Savard et al., 2009). The reasons why adult day service programs are used is a complicated process where caregivers are weighing the needs of the participant (socialization, need for supervision) with the needs of the family (need for relief from care responsibilities, affordability) along with interactions with the broader long-term care system (Gaugler, 2014). The average length of stay in an adult day centre is two to eight years (Bellome & Cummings, 2005).

Services provided at adult day centres vary, but almost all centres provide some types of therapeutic activities and personal assistance. Most provide meals, nutritional counselling, mild exercise programs, social opportunities and door-to-door transportation. Other services provided include: health monitoring, small group and individual activities, nursing care, family counselling and referral services, art, music, and creative expression, speakers and discussion groups, assistance with personal care, medication management, rehabilitative and educational activities, intergenerational programming, and caregiver support groups (Bellome & Cummings; 2005; Mason et al., 2007; Zank & Schacke, 2002). Having a full-time registered nurse on site that provides assistance with medication and health monitoring is a huge benefit to clients at adult day service centres. Recent research on nurses in adult day centres describes how they positively affect the health of older adult day care clients through the use of a number of assessment tools and effective care plans. Many nurses in adult service programs have specific training in caring for people with dementia (Reilly, Venables, Hughes, Challis & Abendstern, 2006). Nurses also educate clients about their medications, and perform

continuous medication case management, serving as a liaison between the pharmacist, physician and clients and caregivers to decrease medication adherence problems (Jennings-Sanders, 2004).

Another study by Gitlin, Reeve, Dennis, Mattieu and Hauck (2006) showed the positive long-term effects of employing a social worker to provide care management and support to family caregivers. In addition, several strong recommendations from a qualitative study undertaken by Patterson (2001) require ADC staff to have training in social work. Patterson (2001) recommended that health practitioners at ADCs should provide support groups for caregivers of past participants who pass away while attending the program, play a role educating caregivers about ways to keep care recipients active on non-attendance days, and assist family caregivers in placing family members in long term care. A social worker or a nurse could also actively liaise between the family caregiver and the physician when it comes to such matters as managing the mental health issues of ADC participants (Gitlin et al., 2006; Richardson, Dabelko & Gregoire, 2008). In their study on ADCs and mental health care, Richardson et al. (2008) found that 20% of the participants had psychiatric diagnoses (e.g. anxiety, depression) and that their length of stay was significantly shorter than those without psychiatric diagnoses. Social workers are needed at ADCs to conduct geriatric assessments and implement age-appropriate interventions with older persons (Cohen-Mansfield, Lipson, Brennehan and Pawlson, 2001; Richardson et al., 2008; Vasquez, 2006).

3.2. Design of Adult Day Centres

Design of the physical environment is a critical component for providing quality care to people with Alzheimer's and other related dementias. Quality dementia care "maintains personhood in the face of failing of mental powers" (Kitwood, 1997) and, a well-designed physical and social environment plays an important role in providing quality 'person-centered care'. The person-centered care approach is based on a humanistic philosophy and suggests that, instead of focusing only on the disease of dementia, caregivers regard the whole life experience and capacities of persons living with dementia (Kitwood, 2008). Person-centered care is envisioned as "a culture of

community, where each person's capabilities and individuality are affirmed and developed" (Misiorski, 2003). Several studies have highlighted the relationship between architecture and organizational change, establishing a formative link between person-centered care and the physical setting (Kane et al., 2003; Davis et al., 2009; Geboy, 2005 & 2009). In particular, research has shown that thoughtful environmental design is a therapeutic resource, promoting well-being and functionality among people with dementia (Day et al., 2000; Jones & van der Eerden, 2008; Moore, 2002).

The person-centered care approach also implies a favourable context and a desire to respect the values and preferences of persons when providing care (McCormack, 2004). From the perspective of the setting for adult day programs, person-centered care is about providing a person with a choice, a concept fundamental to environmental psychology. Research has linked an individual's perceived control (or lack thereof) of the environment to clinical outcomes. For example, individuals who believe that they have control over situations are more resistant to life's setbacks, and lack of control has been associated with depression, passivity, elevated blood pressure and reduced immune system functioning (Devlin & Arneill, 2003). Confusing way-finding cues, lack of privacy, noise, lack of personal control over activities, and lack of access to outdoor space or of a view out a window, are just some of the factors that contribute to a sense of loss of control in healthcare settings (Devlin & Arneill, 2003; Moore et al., 2006). The person-centered approach to environmental design can be viewed as an alternative, or a complement to pharmacological treatments aimed at reducing the disruptive behaviours of people with dementia (Cohen, Mansfield & Mintzer, 2005; Kong, Evans & Guevara, 2009). In sum, person-centered care in relation to dementia is a composite term including elements of valuing people with dementia and those who care for them, respecting their individuality and perspective, and, providing a positive physical and social environment (Brooker, 2004).

An obvious gap in the literature pertains to empirical research on the merits of environmental design for any health care setting. Reasons cited include: the fact that architecture lacks a tradition of research, health care researchers have overlooked the role of the physical environment in patient/client well-being, and, the research process in health care settings is challenging (Devlin & Arneill). Also, until recently, researchers

have neglected to consider the role of neuroscience in the field of environment-behavior (E-B) studies (Zeisel, 2006). In his book: 'Inquiry by design', Zeisel (2006) details why and how research has been focusing on the central role that environment plays in basic mental functions such as perception, memory, spatial processing (orientation) and learning. In their literature review of studies on health care environments and patient outcomes Devlin & Arneill (2003) settled on three related research themes: patient involvement with health care (e.g., role of patient control), the impact of the ambient environment (e.g., sound, light, art etc.) and the emergence of specialized building types for defined populations (e.g., Alzheimer's patients). Unfortunately, many adult day centres operate in buildings such as churches and community centres, which were designed for purposes other than adult day service programs. In effect, places that are not designed for adult day care use often create barriers for participant utilization of the space, limit participants' choices and perceived control, and encourage disability (Moore, 2004).

Increasingly, research is being focused on HRQOL outcomes in gerontological environments, in particular, environments for people with dementia (Moore, 2002). Quality of life has been defined by Lawton as "the evaluation, by both subjective and social-normative criteria, of the behavioural and environmental situation of the person" (Lawton, 1994, p. 138). Moore (2002) argues that physical setting is "intrinsic to the definition of quality of life itself" and that more of this type of inquiry is missing from the adult day program literature. Although the research process in a healthcare setting may be exceedingly difficult because of the problems with experimental control, empirical research is needed to underscore the relationship between HRQOL and the physical setting for adult day service programs. A crucial decision for researchers will be whether to use one of the available instruments that measure proximal outcomes (outcomes describing clinical indications of illness based on signs symptoms), or to develop a measure that assesses the more distal, or broader outcomes such as mobility, role performance, or life satisfaction.

Moore and his colleagues (2006) use the term "prescriptive pattern" to define those relationships between people and settings that contribute to positive place experience in ADCs. Consistent with geographical pragmatism, the patterns and

prescriptive solutions address the people and program, but also the place where the program or activities occur. If researchers can identify patterns of relationships that promote desired experiences and support the purposes for which a place exists, these patterns are worthy of emulation, and can help in the design of other, same place types (Moore, 2006). Moore and colleagues developed a number of useful guidelines for the design of adult day settings, and demonstrated that a purpose-built building is an integral component to providing a positive place experience at an adult day service centre (Moore et al., 2006). New, purpose-built designs (and to some degree, modifications made to existing care settings) emerge from a collaborative process of identifying and balancing a variety of needs, resources, assumptions, objectives, space requirements and regulatory standards.

It is interesting that very few architectural firms routinely incorporate post-occupancy evaluations (POEs) in their work to evaluate the impact of finished development projects (Devlin & Arneill, 2003). Post occupancy evaluations answer questions about how well facilities perform functions for which they were intended. Since it has been shown that environment can play a critical role in compensating for client's cognitive and sensory deficits and encouraging mastery of the environment, including ADLs, (Day et al., 2000; Hyde, 1989; Jones & van der Eerden, 2008; Moore, 2002) design that is driven by research, or 'POE research' could inform design solutions for new and existing healthcare settings such as adult day facilities (Devlin & Arneill, 2003). Testable behavioural hypotheses could be derived from clients' explicit behavioural performance at adult day programs/centres. An appropriate testable hypothesis might be: environments offering way-finding cues are more easily navigable. Rather than re-inventing the design process each time, designers could access and adapt this evolving body of knowledge and list of design guidelines to future projects.

3.3. Activity Programming at Adult Day Centres

The continuity of everyday activities, often undervalued in traditional place types serving older people such as long-term care facilities is the core of adult day programs. Many health benefits have been attributed to the continuity of leisure and productive activities over the life course (Atchley, 1989). Unfortunately, often activities arranged for

older people are diversionary rather than therapeutic (Moore et al., 2006). While some diversionary activities are acceptable as entertainment or recreation, therapeutic activities are necessary to stimulate changes in the participants' abilities from dysfunctional to functional (Moore et al, 2006). Therapeutic activities improve function and mediate further deterioration by focusing on each participant's existing abilities. More recently, in response to the growing body of evidence of the positive effects of targeted exercise for older adults, adult day service programs have added exercise programs to the daily activities curriculum with the aim of reducing functional decline among clients (Henwood, Wooding & de Souza, 2013). The use of individual care assessments, or 'participant profiles' in the process of activity programming at ADCs is particularly important for participants with dementia (Jennings-Sanders, 2004). Researchers in the field of social gerontology have also recognized that participation in personally valued or meaningful activities, including physical activity, contributes to individual well-being (Eakman et al., 2010). Therefore, a carefully planned program with meaningful activities can result in a therapeutically beneficial day for adult day care clients, a sense of accomplishment for staff, and most importantly, an improved quality of life for participants (Balada, 2011).

In a study completed by Woodhead et al. (2005), the increase in positive behaviours that was observed among clients in adult day programs was attributed to their participation in engaging activities at the centres. In contrast to low levels of functional activity typical of middle-stage dementia patients at home, people in day care have a structured day that keeps them active and involved. These activities may help bring out more socially appropriate and positive behaviours. In a similar way, engaging activities may lead in a direct way to diminish restless, aimless activity that may have stemmed from boredom (Woodhead et al., 2011). Although researchers concur that the potential of cognition-focused interventions is somewhat obscured by the methodological inconsistencies and limitations of the clinical studies conducted thus far, there is some evidence to suggest that cognitive stimulation, training or rehabilitation in adult day care settings can provide therapeutic benefits to people with dementia (Kurz, & Lautenschlager, 2011; Reinertsen, 2006). One study in particular found a simple therapeutic activity such as Bingo had a therapeutic benefit on the short-term cognition in Alzheimer's disease patients (Sobel, 2001).

Certain activities have natural limitations with respect to the number of people needed to participate. Activity programmers need to be aware when 'overpopulating' has a negative impact on the therapeutic potential of an activity because participants feel coercively excluded (Moore et al., 2006). In his 2014 study, Gaugler found that adult day service clients' varying ability to fully engage in various therapeutic activities and services is determined largely by degree of cognitive impairment and the utilization of one-to-one care. It was observed that during large group activities cognitively impaired clients were often provided with alternative games or activities that they could actually "do", raising the question of implications for stigmatization or segregation among these clients. On the other hand, Gaugler (2014) noted that incorporating cognitively impaired clients into large group activities appeared to lead to disengagement on the part of these clients since they had difficulty speaking and following game and task instructions. Activity program staff often overcame barriers to engagement for cognitively impaired clients through the use of one-to-one care interaction personal names, and emotional validation (Gaugler, 2014).

It is not just the presence, variety and amount of activity that is important to a person's well-being, but meaningfulness is also important to the health of elderly persons (Eakman, Carlson & Clark, 2010; Harmer & Orrell, 2008; Kane, 2001). Research suggests that engagement in meaningful and productive activity contributes to the quality of life of people living with dementia (Balada, 2005; Harmer & Orrell, 2008; & Kane, 2001). Productive activities are defined as all activities paid or unpaid, that create goods or services of value (Rowe & Kahn, 1998). A highly valued attribute in our society, productivity increases feelings of self-worth and provides individuals with a sense of meaning and purpose. Since many older adults continue to feel the need to work, but are retired or too impaired, many adult day centres acknowledge this need by assigning daily tasks or 'jobs' to clients such as watering plants, leading an activity group, cooking, or reading aloud to others (Balada, 2005; Rowe & Kahn, 1998).

Again, emphasis should be placed on activities that allow participants in adult day programs to feel productive, gain a sense of mastery, and increase their overall quality of life. Having a choice of activities is also important (Balada, 2005; Moore, 2006). Adult day program staff often need to balance what clients' preferences and

needs (Gaugler, 2014). For example, staff may encourage clients to forgo something they always want to do (e.g. sitting and passively observing) for activities and services that might be more effective at stimulating clients' memories, building socialization, and enhancing function (Gaugler, 2014). An older adult with cognitive impairments also needs to be engaged in activities that can be tailored to his/her level of desired participation (Woodhead et al., 2005). Simply walking around and exploring, or going outdoors can be an engaging or meaningful activity to a frail or cognitively impaired older person and increases quality of life (Harmer & Orrell, 2008; Moore, 2003). Finally, semi-structured activity during transitions (the time between scheduled activities and mealtimes for instance) is important in adult day centres to provide a sense of orientation for people with cognitive impairments (Moore et al., 2006).

3.4. Outcomes of Adult Day Service Intervention: Client Issues

Based on previous research and practice knowledge, Dabelko & Zimmerman (2008) suggest there are two general intended domains of influence adult day services has on participants: (a) psychosocial and (b) physical functioning. Due to increasing levels of disability, many older people face a greater dependence on the environment and the people around them such as family and friends (Berk, 2009). Quality of life of older people decreases as dependence on others increases because it is often accompanied by a sense of powerlessness, which is deleterious to a person's well-being (Balada, 2005; Berk, 2009). Adult day centre programs can improve the quality of life of participants by focusing on aspects of quality of life that are important to older frail people including autonomy, social support, physical and mental well-being, and productivity (Molzahn et al., 2009; Schmitt et al., 2009). Further, when people have a choice of daily activities and type of interactions they can engage in, it improves their functionality, and increases their independence (Balada, 2005; Dabelko & Zimmerman, 2008; Moore et al., 2006; Schmitt et al., 2009). Valadez et al. (2006) found that interaction with other older people at adult day centres had a positive impact on both physical and mental well-being. There were consistent testimonials attesting to how

increased social interaction with other individuals who shared similar experience during a common period decreased feelings of isolation and depression.

An increasing body of evidence points to the many potential benefits derived from interventions to increase levels of physical activity among older adults (Spinney, 2013; Williams, 2006). In a systematic review of research studies related to physical activity and quality of life outcomes, Rejeski & Mihalko (2001) found evidence that physical activity can have a positive effect on physical function, mental health status and life satisfaction of older adults. Most adult day programs incorporate opportunities for physical activity which can then provide benefits to the individual participants including: improved balance, reduced risk of falls and related injuries, greater independence, and, reduced risk of heart disease, stroke, osteoporosis, type 2 diabetes, some cancers and premature death (Public Health Agency of Canada, 2011; Spinney, 2013). In addition to physical function, group-based exercise programs can have a positive effect on the mental health status, and restless and mood behaviours of older adults (Rejeski & Mihalko, 2001; Woodhead et al., 2005). Studies have shown that targeted exercise for older adults increases muscle strength, mobility and balance and that these gains can positively influence physical performance, sleep and cognitive and overall well-being (Henwood et al., 2013). Although home-based exercise programs also lead to an increase in perceived well-being, several studies have demonstrated that group-based exercise has even greater positive effects on functional capacity, pain, and well-being (Rejeski & Mihalko, 2001).

Agitation, defined as aggressive behaviours and inappropriate vocal or motor activity, is one of the most distressing behavioural symptoms experienced by family and caregivers (Matsumoto et al., 2008; Woodhead, Zarit, Braungart, Rovine & Femia, 2005). Caregiver emotional responses associated with more severe care receiver agitated behaviours include higher levels of depressive symptoms and stress, perceived burden of caregiving, and emotional exhaustion (Farran et al., 2007; Iecovich, 2008; Ostwald et al., 1999; Schacke & Zank, 2006; Sorensen, Pinquart, Habil & Duberstein, 2002). Agitated behaviours also predict the transition from informal care by a family member into a nursing home or other long-term care facility (Farran et al., 2007; Gilley et al., 2004; Pinquart & Sorensen, 2003). Older people with moderate to severe dementia

followed in a day services centre programs showed a short-term improvement in behavioural and psychological symptoms of dementia (BPSD) (Matsumoto et al., 2007; Mossello et al., 2008; Pinquart & Sorensen, 2003; Prince, Bryce & Ferri, ADI World Alzheimer Report, 2011; Zank & Schacke, 2002). In their 2003 study, Pinquart and Sorensen confirmed that a significant difference between modalities of care in BPSD change observed over time has a clinical relevance, as these symptoms are associated with caregiver burden more than cognitive and functional impairment, and predict institutionalization.

There have been very few studies conducted in Canada or the United States that have reported health-related outcomes for participants at adult day program centres. Evidence from randomized controlled trials (RCTs) is mixed, and suggests that adult day services programs neither benefits nor harms the care receivers (Mason et al., 2007). One study found benefits for certain subgroups of older people: those who were not married, those who were not hospitalized at the time of enrolment, and those who were very satisfied with social support had better health outcomes than those receiving usual care (Hedrick et al., 1993, as cited by Mason et al., 2007). Another study by Zank & Schacke (2002) showed a positive effect on clients including: stabilization of subjective well-being and dementia symptoms, life satisfaction, perceived social support and depression. Their results also showed significant changes in cognitive and non-cognitive dementia symptoms and that partial cognitive abilities can be improved by general day services utilization even in participants with reduced capacity.

While the mixed findings from RCTs suggested the limited effects of adult day services on clients' functional outcomes, quasi-experimental or descriptive studies indicated potential benefits for clients such as on subjective well-being, dementia symptoms, and mortality (Kuzuya et al., 2006; Zank & Schacke, 2002). In a large study by Kuzuya et al., 2006, multivariate analysis revealed that day care service use was associated with a 32% to 39% reduction in mortality, independent of sex, age, disability, comorbid condition, number of medications used, and presence of chronic diseases. Also, day care service use was associated with less risk of mortality in subjects who were female, were in the youngest age group (65-74), had higher ADL scores, lower comorbidity, depression, no dementia, and used a visiting nurse service. Most

interestingly, among community-dwelling frail older people, daycare services use two and three times or more a week had a 44% to 63% lower 21-month mortality, respectively, than participants not using the service (Kuzuya et al., 2006). A two-month study on the effects of day care on older patients with dementia, by Mossello et al. (2008) found the use of psychotropic drugs decreased.

3.5. Outcomes of Adult Day Service Intervention: Caregiver Issues

Although the present study is exploring outcomes for adult day service participants, focusing on quality of life aspects for caregivers in the context of adult day services overlaps with the care recipient's improved quality of life. The themes identified by caregivers that emerged in a qualitative study by Molzahn et al. (2009) are consistent with those identified in the Age-Friendly Cities initiative undertaken by the World Health Organization (2007). Physical health and well-being, social networks/relationships, aging in place, safety, respite, activation, respect and inclusion, and adequate health care services are closely aligned with the themes that arouse from consultations with older adults and their caregivers in 33 cities around the world. Thus, it appears that ADCs share key physical, social and services attributes of age-friendly communities and places. Similar findings from other studies reported caregiver participants in adult day care services value the following predictors of quality of life: improved health and functional status, social support and supportive environments (Bowling & Zahava, 2007; Molzahn et al., 2009; Moore et al., 2006). The study by Schacke & Zank (2006) demonstrated that use of adult day services is effective in alleviating care-related stress. Moreover, the intervention contributes to a better compatibility between family, job and caregiving responsibilities and enhances the caregiver's opportunity to participate in social and recreational activities. Colvez et al. (2001) found the main benefit for caregivers who utilized adult day program services was the important reduction of feelings of social isolation.

Studies related to caregiver burden indicate most caregivers experience moderate levels of burden (Iecovitch, 2008; Vasquez, 2006; Zarit et al., 1998). Several studies provide evidence of associations between caregiver burden and, number of

caregiving tasks, perceived uplifts of caregiving, and level of functional impairment of the care receiver, financial status, amount of instrumental and social support and attitude (Pinquart & Sorensen, 2003; Vasquez, 2006). Several studies have shown that for all dimensions considered, spousal caregivers expressed more health problems and work burden than the other types of caregivers (Colvez, Joel, Ponton-Sanchez & Royer, 2001; Pinquart & Sorensen, 2003). Also, the feeling of social isolation was also more prevalent in husband and wife caregivers. Not surprisingly, higher degrees of disability were significantly associated to lack of energy, excess emotional reactions and social isolation (Colvez et al., 2001; Pinquart & Sorensen, 2003). The trajectory of health outcomes associated with caregiving is generally downward: those carrying the greatest burdens will experience steeper declines in health (Burton, Zdaniuk, Schulz, Jackson & Hirsch, 2003).

Several studies have found that caregivers are very satisfied with services provided at adult day centres/programs (Baumgarten, Lebel, Laprise, Leclerc & Quinn, 2002; Iecovitch, 2008; Mason et al., 2007; Patterson, 2001; Zank & Schacke, 2002). Caregivers indicate that adult day service centres are an important source of respite for them (Gaugler & Zarit, 2001; Molzahn et al., 2009; Mossello et al., 2008; Patterson, 2001; Schacke & Zank, 2006). A comprehensive literature review (Gaugler and Zarit, 2001, as cited by Dabelko & Zimmerman, 2008) organized previous research into outcome areas including improved caregiver adaptation. Their review found that research has shown adult day program services to be effective in improving caregiver adaptation by reducing subjective burden, role overload, worry, anger, and depression. In a study by Cheung & Ngan (2008) responsive communication was demonstrated to be an antecedent to the informal caregivers' knowledge about services, and subsequent positive evaluations of the day care centres attended by their loved ones. Responsive communication is a key component of successful partnerships between care providers and users. The communication is based on the premise that the service users are the 'experts' and their experience is highly valued in the process of care management. Responsive communication enhances the partners' shared understanding, rapport, openness, self-disclosure, and empathy (Cheung & Ngan, 2008). These conclusions accord with findings from other studies about the contribution of empowerment to people's adaptation to and satisfaction with services.

However, although a few studies have demonstrated the value of day service centre interventions, the research design issues and small sample sizes of empirical studies attempting to measure the effects of adult day care service interventions have only been able to demonstrate low to medium effects for caregiver outcomes such as burden, subjective well-being ability/knowledge and depression (Mason et al., 2007; Schacke & Zank, 2006; Sorensen et al., 2002; Zarit et al., 1998). A meta-analysis of a large number of studies of the effectiveness of interventions for family caregivers of older adults found that respite/daycare interventions were effective for three outcomes: caregiver burden, caregiver depression, and caregiver well-being (Sorensen et al., 2002). Other studies evaluating the effectiveness of adult day services for frail older adults and their caregivers, also found evidence of the following positive outcomes: decreased objective burden, increased caregiver's sense of freedom and relaxation, lowered stress and depression, decrease in carer hostility for caregivers, and delayed institutionalization (Mason et al., 2007; Mossello et al., 2008; Patterson, 2001; Prince et al., 2011; Zarit et al., 1998). Caregivers benefit significantly more when using "substantial" amounts (at least twice a week for at least 3 months) of day care (Zarit et al., 1998)

Researchers seem to agree that adult day service intervention effects would be greater with: a multi-component approach; earlier utilization of the service in the caregiver's career; higher levels of participation (more days a week); a longitudinal study design; and, measurement tools that capture what users of the service perceive as benefits (Baumgarten et al., 2002; Gaugler et al., 2003; McCann et al., 2005; Pinquart & Sorensen, 2003; Schulz et al., 2003; Sorensen et al., 2002). Another research study by Gaugler (2014) outlined various challenges families faced when utilizing adult day services. In addition to resistance of clients to attend the adult day program, family members often struggled with the routine of getting clients ready to go to the program in the morning (tasks including: attention to medication management, increase in agitated behaviours and transportation arrangements). This resistance might have also influenced, or was associated with, the overall lack of utilization by family members (Gaugler, 2014). These findings highlighted that clients were not using adult day services as much as they should to achieve the cognitive, social, or functional benefits of the services.

When it comes to studies that evaluated whether day service use served to delay institutionalization, results are confounded by the following intervening variables: timing of the intervention with respect to stage of caregiving career; utilization of other home-based community services; and, levels of physical and cognitive impairment (Gaugler, Kane, Kane & Newcomer, 2005). Data from various studies on the cost-effectiveness of adult day services and other community-based respite care found evidence that caregivers had been able to prolong life at home for the older person requiring care (Mason et al, 2007). One study found that the timing of placement in a nursing home was related to the relationship between the caregiver and care recipient. Analysis completed by Cho & Chiriboga (2009) indicated that wives who used adult day care placed their husbands to a nursing home earlier than their counterparts. Among daughters; however, those who used adult day care were more likely to postpone placement.

Chapter 4.

Methods

Chapter 2 presented a conceptual framework for the concept of “place” and a research approach. This chapter outlines the research methods in this study that were designed and employed to relate to the conceptual framework, and explore the research questions:

1) What characteristics of the physical and social environment of an adult day program affect adult day service clients’ activities and well-being?

2) What is the comparative influence of a purpose-built versus non-purpose-built adult day facility on clients’ activities and well-being?

This chapter specifically provides details on the study design, data collection, data analysis and other reflexive considerations regarding the methods for this study.

4.1. Research Design

The study attempted to gain insight into the potential variation in health behaviours, leisure activities and social interactions between older adult client groups in two adult day care sites that have different physical environmental features. Evidently, philosophical pragmatism and the pluralistic perspective of ‘health care integration in place’ present an epistemological challenge to researchers. As explained by Cutchin (1999), the challenge can be met through research methods that can capture the data of place integration processes, particularly the continuity of the place integration experience. Cutchin argues that the emergent nature of experience, situations, actions and place integration necessitate a qualitative method of inquiry. While quantitative

methodologies are not well suited to the task of capturing the continuous, fluid and relation-bound processes of experience, qualitative methods have proven effective (Cutchin, 1999). The conceptual framework guiding this study supports the need for a broader approach to gain an understanding of the linkages between elements of the physical and social environment, which has entailed a mixed-method study. Parmelee and Lawton (1990) argue that a study design with a mix of qualitative and quantitative methods allows person and environment to be measured 'both separately and transactionally'. In addition, when more than two research techniques are employed; results are viewed as having validity through the process of triangulation. However, since the primary intent of this research was to uncover and understand the emergent situation of places providing adult day services, quantitative measurements were limited to an initial, brief environmental assessment of the two study sites, and qualitative methods were the foundation of this study.

4.1.1. Comparative Case Study Design

Since the intent was to develop intensive knowledge about two distinct and internally complex places for the purposes of comparison, case study design was used for this research. A case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly defined (Yin, 2014). Comparative case study approach is a broad general strategy, not a specialized, narrow technique and this is both the strength and weakness of this approach (Meyer, 2001). The researcher is able to tailor the design and data collection procedures to the research questions, but if this is not handled in a principled manner, is left open to criticism, especially from the quantitative field of research (Meyer, 2001, Yin 2014). Case study design is widely used in exploratory organizational studies in the social science disciplines of sociology, industrial relations, and anthropology. The approach involves a detailed investigation of one or more organizations with the aim of providing holistic view of the context and processes involved in the phenomenon under study (Meyer, 2001). The logic of sampling in case study design is fundamentally different from statistical sampling in that it is information-oriented as opposed to random. In this study, two cases were selected in order to allow for comparison and contrast between the cases as well as a deeper and

richer investigation of each case. The research decided to study two research sites that are similar in many variables with the exception of the phenomenon being examined (socio-physical environment).

In order to gain an in-depth understanding of an adult day program, the researcher employed multiple research techniques to get sufficient data about different elements of the place, relations among the elements, emerging situations/conflicts and contextual influences. Given the high proportion of adult day program clients having dementia and the concomitant complexity of social interaction patterns among persons with dementia, the researcher pursued the opportunity for prolonged engagement at each study site to draw on a range of informational sources. The study has benefitted from a holistic investigation of the myriad of factors that impact social interaction including the physical and social environments. For this study, 'physical environment' refers to the range of physical environments including both built and natural environments that exist outside of the individuals. The physical environment can be identified and taken into account in multiple ways, which include scale (i.e., room, home, neighbourhood, cityscape); environmental aspect (i.e., architecture or structure, interior design elements such as furnishing or lighting fixtures, sensory qualities such as sound or lighting); and stability (i.e., fixed, semi-fixed or non-fixed features). The researcher has adopted a definition of social environment being: "the totality of the diverse range of social phenomena, events and forces that exist outside the developing individual" (Dannefer, 1992, p. 84). The specific methods employed in this study were: environmental assessment, in-depth interviews with key informants among the staff, and ethnographic observations.

4.1.2. Case Study Sites

The study was conducted at two adult day centres with different physical environmental features in Metro Vancouver. The study sites have been given pseudonyms to protect the identities of staff and participants in the adult day programs. The researcher based on prior knowledge of each site's unique physical environmental features purposively selected the locations. The researcher had intimate knowledge of the 'Cedarcrest Adult Day Centre' (CADC) from a previous qualitative study, which

demonstrated how the physical setting positively influenced the therapeutic activity program. The 'Jean Falconer Adult Day Centre' (JFADC) was selected following an extensive tour of several well-established adult day program facilities in the Metro Vancouver area. The JFADC was chosen because it is a relatively new site and yet, has a physical layout that does not adhere to Moore's (2006) principles of design for adult day centres, and could limit or constrain adult day program activities. The administrators at both sites indicated a positive response to the researcher's request for inclusion in the study.

The first site, the CADC, is described by staff as a purpose-built adult day facility located on the corner of a large municipal park adjacent to a natural greenbelt. Many stakeholders designed and built the CADC through a collaborative effort. Supported by a local minister and other health care advocates in the Ministries of Health and Social Services, the facility was developed with the help of municipal and provincial politicians, City bureaucrats, and private funding partners. Architects and planners also generously donated their services and the municipality contributed the 99-year lease for the land in the park. The adult day centre shares the building with a child daycare, and the adult day program includes a bathing service for clients or others living in the community. The site is a relatively small health services site compared with other sites in the Vancouver Coastal Health Authority and is geographically isolated from other home support and health care services. A floor plan of the CADC is shown in Appendix A. Aside from the backdrop of a natural setting, the most notable physical environment feature at this site is the secure outside garden area comprised of plantings, walking paths, gazebo, benches and covered patio areas. The interior space is characterized by a continuous, wide pathway that incorporates a number of spaces that were designed for a variety of activities, including dining, music therapy and entertainment, exercising, games, woodworking etc. The pathway serves as a walking loop and both staff and participants benefit from the generous sightlines that the mostly open plan affords.

The other study site, the JFADC is part of a 'campus' of housing and health care services built through the joint efforts of the 'Glenmore Garden Home Society', BC Housing and the Vancouver Coastal Health (see Appendix B). Although the Glenmore Garden Homes Society should be lauded for their intent to offer a variety of housing and

health services to older adults, the space allocated for adult day service program appears from a cursory assessment and initial conversations with the administrator not to have been designed with the specific needs of adult day service clients in mind – particularly clients with dementia. With respect to the adult day program service, a local ‘community neighbourhood house’ contracts with the Ministry of Health through the Vancouver Coastal Health Authority to operate two geographically separated programs in the Vancouver area. The newer site where the JFADC is located is the ground floor of the ‘Dogwood Building’, which is an assisted living residence containing 89 one-bedroom suites large enough to accommodate a couple with fully equipped kitchens and bathrooms with showers. The assisted living residence also contains well-appointed lounges, activity areas, and a community dining room. The dining room and main floor washrooms are spaces that are shared with the adult day centre clients. On most days, the assisted living residents are served their noon hour meal in the dining room, and then once the room has mostly cleared out, the dining room staff calls the ADC clients over to be seated and served. In addition to the unsecured shared areas, other notable aspects of the physical environment of this ADC are the lack of a walking pathway and secure outdoor area.

Both sites serve approximately 20-30 clients daily and adopt a person-centered approach, providing holistic, therapeutic, multi-cultural programming, medical monitoring and nutrition support to frail elders and adults with physical and cognitive challenges who live independently in the community. The service is a referral-based program operating Monday through Friday, from 9:00 am – 4:00pm. Frail seniors, their families or friends make referrals to adult day service programs by contacting the Central Intake Services of the Vancouver Coastal Health Authority. The JFADC has fewer numbers of daily clients due to a smaller, unsecured space and the clients are predominantly Chinese speaking reflecting the ethnic composition of the surrounding neighbourhoods. The researcher recruited staff informants following personal introductions by the respective administrators, and initial staff meetings where the researcher was provided the opportunity to explain the purpose of the study. Based on interest generated through ensuing discussions, the researcher invited all staff members at both sites to participate in the research study, and without exception, all of the individuals agreed to be

interviewed. A detailed description and comparison of the study sites is outlined in Table 1.

Table 1. Description of Study Sites

Site Name	Cedarcrest ADC	Jean Falconer ADC
Type of building/space	~Purpose-built facility ~Single use space with secured exits ~Building houses one other tenant (preschool) in separate space	~Single use space at ground level of new, large assisted living residence ~Program shares dining room and washrooms with assisted living residents ~No secured exits
Owner/Operator	VCH	Not-for-profit/Local Neighbourhood House
Publicly funded?	Yes	Yes
Days per week that program is open	Mon – Fri	Mon - Fri
Hours of operation	6-8 hours	6-8 hours
# Daily clients	25-30	15-20
Approximate size of the program space	11,610 sq.ft. 1,079 m ²	3,500 sq.ft. 325 m ²
Cost of program per day	\$0-\$15	\$0-\$15
Outdoor area	Yes	No
Client Profile	Mostly dementia clients	Mix between dementia and non-dementia clients
Types of services offered in the program	~Nursing/medical ~Therapeutic recreation	~Nursing/medical ~Therapeutic recreation
Number of full-time staff/number of part-time staff	6/2 (excluding cook and bathing assistant)	5/1
Casual Workers?	Yes	No
Volunteers	Daily	Sporadic

4.2. Data Collection

Multiple and mixed methods were used to collect data to cross-validate and triangulate the findings. Following principles of concurrent analysis, data analysis was carried out at the same time as the fieldwork, which included ethnographic and structured observations (behavioural mapping). Interviews were used as a secondary

source to supplement the information gathered through the environmental assessment and the ethnographic observations. The administrators and staff at both sites were open to having the researcher contact staff members individually to arrange for interviews, and it was understood the researcher would be given access for observations at any time during operating hours. As a courtesy, the researcher provided regular, informal up-dates to the administrators at both sites, and effective communication was key to maintaining a respectful and cooperative partnership over the course of the research study.

The study received approval from the Simon Fraser University Office of Research Ethics and the Vancouver Coastal Health Research Institute prior to data collection. All interview participants (staff members) volunteered to participate in the study and signed consent forms. In the area of dementia research, the limitations of cognitive impairment and memory loss raise ethical concerns on the consent process with respect to the adult day program participants. Although the researcher acknowledges that a diagnosis of dementia does not imply incapacity of the person with dementia to take part in decision-making to participation (Kuhn & Edelman, 2004), obtaining informed consent for the ethnographic observations would have been difficult for this study due to the absence of the caregiver and potential language barriers. The Office of Research Ethics review concluded the research application posed minimal risk to participants; however, as a safeguard, the researcher arranged to send notification letters regarding the impending study to all family caregivers of participants, and also crafted newsletter announcements. If any client or family member contacted the researcher to indicate a preference to not be included, their wishes would have been respected. Again, pseudonyms including terms to differentiate between informants were used to help protect the anonymity of the research participants.

4.2.1. Environmental Assessment Tool

The Adult Day Program Physical Environment Assessment Tool (ADPPEAT) (see Appendix C) is an environmental design measurement tool developed and tested for adult day programs in Nova Scotia (Brown, 2012). The ADPPEAT tool was derived from existing environmental design guidelines and various assessment tools found in the

body of research by a number of leading environmental gerontologists. In particular, work by Lawton, Fulcomer, & Kleban (1984) speaks to evaluative criteria; research by Cohen and Weisman (1991) outlines therapeutic goals; and studies by Zeisel, Hyde & Levinkoff (1994) describe environmental characteristics. In addition, Brown (2012) considered aspects from environmental checklists such as the Adult Day Centre Environmental Assessment (ADC EA) developed by Moore et al. (2006) were and included relevant characteristics for analysis of attributes of place experience.

After a critical analysis of environmental issues that are crucial to providing quality dementia care in an adult day program setting, Brown (2012) included nine design principles in the ADPPEAT. These design principles evaluated the ADC spaces with the benchmark that they: are safe and secure; have good 'visual access' and afford functional independence; reduce unwanted stimulation; highlight important stimuli; reduce agitation and provide for planned wandering; are familiar; afford autonomy independence and control; afford meaningful activities; and, meet the needs of staff. Each principle is considered to be a sub-scale and the associated score indicates how supportive an environment is for persons with dementia.

The tool was extensively tested and was found to have moderately high inter-rater reliability and high internal consistency (each sub-scale has a Cronbach's alpha of 0.7 or higher) (Brown, 2012). Results for content (face) validity were also reasonably high. When surveyed, the majority of ADP coordinators rated the tool as 7 out of 10 or higher, and found the tool's items to be relevant attributes of an ADP's physical environment (Brown, 2012). Overall, the tool was found to be a good indication of how supportive an adult day program environment is for people with dementia. It also allows for comparison of multiple adult day environments. In addition, the tool identifies weaknesses in the environment, which in turn provides an opportunity for administrators to make appropriate changes that would make the physical environment more suitable for people with dementia.

Completing the assessment at the two study locations required voluntary participation by a staff member at each site. Observations of the physical environment were recorded using the ADPPEAT. The whole process took less than one hour at each

site and the assessments were completed outside of hours of operation when clients are not utilizing the space. The data generated through this activity should provide comparative environmental profiles of the two adult day program sites in terms of their appropriateness for the needs of older adult clients, many of who have dementia. It is important to note only physical environment design features are analyzed with this tool and many other supportive components (staff, activity program etc.) involved in the care for persons with dementia in adult day programs were not analyzed.

4.2.2. Ethnographic Observations

When undertaking an inquiry related to place, the researcher needs to consider three aspects: activity, physical setting and the hidden program that relates the first two aspects (Moore, 2000). The focus of the observations was on the physical setting and the social life of the setting. The various groups of the social environment – older adult clients, staff and volunteers – that engage in activities and interactions are influenced by the nature of the physical environment. The intent was to observe the natural setting from the point of view of the participants, record all observed behaviour, and describe all social meanings and ordinary activities to further explain the multifaceted role of the physical environment. The goal was to gain a deeper understanding of the social milieu within an adult day care service setting through observation and participation; in other words, the researcher took on the role of both active and passive participant.

During the observations, the researcher often took part in the activities of the group, but did not take on the role of a full member in order to maintain a mind-set of an observer and a professional distance. Qualitative observations were conducted by taking discrete “jottings” during brief breaks in the program in order to minimize the ‘strangeness’ and marginalizing effect of research activity in this setting (Emerson, Fretz & Shaw, 1995). The “jottings” were expanded afterwards to develop field notes that provided a description of activities, interactions and environmental influences. These observations were conducted over a period of five months, and at different times of the day to capture any variability across times of days and days in the week. The prolonged engagement was necessary to promote learning and gain a deeper understanding about what was seen and heard in the field. The researcher adhered to a practice of writing up

the field notes immediately after leaving the setting in order to produce more detailed recollections and a “thick” and rich description in the data (Charmaz, 1995; Emerson et al., 1995)

In addition to the qualitative ethnographic observations, structured behavioural mapping using the Behavioural Mapping Instrument (see Appendix D) documented the behaviours and informal social interaction patterns in a specific location within the ADC setting(s) within a particular space and time. When observing informal social interaction in people with dementia, behaviours as simple as a gaze or a smile could be considered as example of social interaction. Thus, for the purpose of this study, the term ‘informal social interaction’ has been operationalized as any spontaneous contact between two or more individuals outside of planned activities and formal care practice (transition time), which includes reacting to the other person in a verbal or non-verbal manner. The focus of this data collection activity was observing how the physical environment facilitated more casual social interactions among participants including both client-to-client and client-staff interactions. The behavioural mapping tool (adapted by Campo & Chaudhury in 2011 from Copeland, Crosby, Sixsmith & Stilwell, 1990) consists of a social interaction checklist and the architectural floor plans of the setting.

The Behavioural Mapping Instrument has been used extensively in studies on informal social interaction among residents in dementia special care units (Campo & Chaudhury, 2011). Behavioural mapping observation is useful not only because it allows a systematic method of linking behavioural patterns with the spatial influences, it also enables objective comparisons between the two adult day centres. This dynamic mapping activity was done in 20-minute segments during ‘transition times’ to support spatial analysis of the program setting. Approximately 5-6 mapping sessions were conducted at each study site. Information collected with the behavioural mapping checklist was supplemented by annotations on the floor plans of the settings that documented the locations of participants and staff during informal social interactions (Zeisel, 2006). Ultimately, through a data reflection process, use of this instrument provided insight to its limitations for this particular study, and led the researcher to pursue other more informative methods of observation. Since the embedded program of adult day care services is to provide staff-facilitated opportunities for group social

interaction throughout the day, behavioural mapping of informal social interaction only proved useful during a very few, brief 'transition times' at specific times of the day.

4.2.3. In-depth Interviews

Semi-structured interviews with open-ended questions are a common strategy used for collecting qualitative data as they provide rich material and simultaneously avoid imposing preconceived concepts on the data (Charmaz, 2002). Qualitative interviewing was useful in this inquiry for the following purposes: evaluating places that are viewed as dynamic and evolving; evaluating programs aimed at individualized outcomes; capturing and describing program processes; exploring individual differences between participants' experiences (the individual staff member's definition of the situation); and, understanding the meaning of a place/program to its participants. In-depth qualitative interviews were conducted with five staff members at each study site. Staff members were purposively selected to represent the various groups at each site; i.e., administrators, nurses, recreational therapists, activity programmers etc. An interview guide (see Appendix E) was used to interview the selected staff members. The open-ended nature of the questions was intended to solicit their experienced-based perceptions, opinions and evaluations about the role of the physical environment in supporting or hindering the activities and programs offered. The interview process also addressed the broader political and organizational context of adult day services. The qualitative data collected in this process provided the researcher with insightful documentation of comparisons of the two different adult day programs. Each interview was approximately 60-90 minutes long and concluded with a debriefing and verbal expression of gratitude for participation in the study.

4.3. Data Analysis

The researcher adopted an iterative approach to data collection and analysis, which supported the inductive inquiry. The data generated through the environmental assessments (ADPPEAT) provided comparative environmental profiles of the two adult day program sites in terms of their appropriateness for the needs of older adult clients, many of who have dementia. Specifically, the descriptive statistics on the ADPPEAT

items and sub-scale scores were analyzed to assess the extent to which the different types of ADP environments implement the key physical environment design principles critical to supporting the needs of persons with dementia. Next, by following guidelines for data analysis developed by Lofland, Snow, Anderson and Lofland (2006), the researcher was able to bring order and coherence to the qualitative data (field notes, mapping and interviews) through the use of a multi-level process involving coding and memoing activities. Coding is the process of selecting, separating and sorting data to begin an analytic accounting.

Once the data had been coded into manageable parts and initial interpretations were developed, the researcher could focus on similarities across the data and draw links between common patterns of experience; segments of data were then categorized or labeled with the central aspect or concept. Writing down ideas and insights during the coding process and elaborating on them is referred to as memoing (Babbie & Benaquisto, 2002). As prescribed by Strauss & Corbin (1998), the researcher's memos took several categorical forms: code notes, theoretical notes, operational/methodological notes, and bias/reflexive notes. Memos were used as supplementary notes and background information to inform the analysis.

Coding and memoing activities were integrated with the data collection activities. Coding began as soon as the first observations and interviews were completed and was an on-going activity during the data collection process. Line-by-line focused coding was done for field notes and the interview transcripts to expose the thoughts, ideas and meanings contained in them. Individual phrases were labeled and grouped to form higher-level themes and ideas about relationships between concepts. The technique of constant comparison was useful for this study that compared two adult day services sites. The researcher was sensitized to properties and dimensions in the data that might have been overlooked because the significance was unknown to the researcher (Strauss & Corbin, 1998).

The process of refining the initial codes and applying focused codes to transcripts and field notes highlighted the missing gaps on the codes, thereby steering the data collection activity. Interpretations from the coded data were examined in light of

previous understandings, and then were taken back to the transcripts and field notes to be re-interpreted and further developed in an on-going iterative process (Thorne, Reimer-Kirkham & O’Flynn-Magee, 2004). The researcher also attended staff meetings at both sites to engage staff in facilitated group member checking sessions as a safeguard against preconceived constructs, and to further cultivate mutual understandings. The researcher kept re-visiting emergent themes and created a hierarchy of the conceptual or relational significance. The result of this analysis is a thematic description that characterizes how the physical and social environment of the respective adult day programs affect participants activities and well-being. The coding process concluded when saturation was reached and no new themes were emerging from the data.

4.3 Ethical Considerations

The ethical concerns related to the ADPPEAT measurement tool were minimal as the tool ensures a non-intervention approach (Brown, 2012). The physical environment features were assessed independent of the characteristics of its users and the tool did not incorporate personal appraisals or considerations of subjective meanings. To protect the identity of participants, personal information was not required for this part of the study, and when volunteered, was excluded from the data. The staff informants at both study sites were assured that pseudonyms would be adopted for two adult day programs in the final report.

In order to gain access to the research study sites, the Vancouver Coastal Health Authority (VCHA) provided the necessary permissions. The ethical concerns for participant observation in particular were considered, and the VCHA agreed with SFU’s Office of Research Ethics’ assessment that the researcher’s unobtrusive observational approach posed minimal risk to participants. Specifically, “potential participants could reasonably expect to regard the probability and magnitude of possible harms that relate to the research, to be no greater than those encountered by the participant in those aspects of his or her every day life”. The informal conversations with clients and discrete behavioural observations occurred as part of the ‘flow’ of the daily program. Of course, in all of the methods described above, participant’s anonymity was preserved. In the

field notes, names were changed or replaced by numbers or pseudonyms. As mentioned under the heading 'Data Collection', a brief notice regarding the study was sent out to family caregivers (Appendix F). There were no concerns raised by caregivers.

The staff interviews were digitally audio-recorded and transcribed verbatim afterwards. Confidentiality of the staff members and adult day program were maintained by use of pseudonyms in data analysis and write-up. All data, including the audio recordings are stored in a secure office environment at the researcher's residence. Once the participating staff members were briefed individually on the purpose of the research study and ethical issues such as confidentiality and risk assessment, they were asked to complete an Informed Consent Form (see Appendix G) indicating they have agreed to participate and understand the potential risks and benefits of the study. Ethics approval was received in July 2013 from the Office of Research Ethics of Simon Fraser University (#2013s0409). Ethics approval was also required from the Vancouver Coastal Health Research Institute and was received September 2013 (#V13-SFU2013s0409).

4.4. Trustworthiness

Regardless of the nature of an inquiry, the researcher must work within a framework that ensures rigour. Qualitative researchers arguably have a greater need to establish 'trustworthiness' since naturalistic inquiry has historically been criticized as not meeting conventional quantitative criteria such as validity and reliability (Lincoln & Guba, 1985; Shenton, 2004). In response to the challenge of addressing such criteria in the conventional paradigm, many naturalistic researchers in pursuit of a trustworthy study have adopted the four constructs put forward by Lincoln & Guba (1985): a) Credibility (in place of internal validity); b) Transferability (in place of external validity); c) Dependability (in place of reliability); and, d) Confirmability (in place of objectivity).

In this study, methods well established in qualitative research were adopted to meet these four criteria and establish trustworthiness. In order to address the most important criteria of credibility (Lincoln & Guba, 1985); i.e., to establish confidence in the

“truth” of the findings of this study, the following techniques were employed. First, familiarity with the participating organizations was achieved at orientation meetings with site administrators and various staff members prior to the data collection. The visits allowed the researcher to gain some contextual understanding of the clients and the physical environments at both sites. Second, the study was designed to allow time for prolonged engagement (a period of 5 months), persistent observation and triangulation to make it more likely that credible findings will be produced. Triangulation was achieved by using different sources and multiple methods. Third, the researcher utilized peer debriefing to provide an external check on the research process. The researcher consulted with a senior supervisor at critical points of the study for debriefing and guidance. Next, in order to maintain referential adequacy, the researcher strove to check preliminary findings and interpretations against archived “raw data” (audio-recordings, environmental checklists etc.). Preliminary findings and interpretations were also tested directly through ‘member checking’ (interviewees). Member checking in subsequent interviews (i.e., checking whether my interpretation had captured the perspectives of the study participants) was employed to give the participants the opportunity to share their thoughts related to the interpretation and applicability of the preliminary analysis. Furthermore, participants were asked to discuss how their experiences had changed over time. Finally, credibility was enhanced through the researcher’s attempt to reduce bias and maintain subjectivity. A technique to facilitate reflexivity is the documentation (memos) throughout the study of the researcher’s reflections regarding bias or methodological concerns.

With respect to the criteria of transferability, a limitation often cited in qualitative research is the use of a relatively small, homogenous sample. To address the limitation of small sample size and lack of diversity, the research provided ‘thick description’ of the phenomenon under investigation. In other words, sufficient information about the fieldwork sites, the actual situations in the respective social environments, the boundaries of the study and the methodology were provided to enable the reader to have a proper understanding of it so that they could compare instances of the phenomenon described in the research project with those that they have seen emerge in other settings. The goal was to provide a “baseline understanding” with which the results of subsequent research work should be compared (Shenton, 2004).

As argued by Lincoln & Guba (1985) there are close ties between credibility and dependability and in practice, a demonstration of the former ensures the latter criteria have been met. In this study, the techniques employed to ensure dependability were: use of multiple and mixed methods (similar to triangulation); provision of a detailed audit trail allowing readers to verify the accuracy of the findings; and reflective appraisal of the project, evaluating the effectiveness of the process of inquiry undertaken (Shenton, 2004). Lastly, confirmability is concerned with the researchers' objectivity. Once more, detailed methodological description enables the reader to be confident the study findings are representative of the participant's experience and not influenced by the researcher's own views (Shenton, 2004). The use of such techniques as triangulation, reflexive memos and an audit trail ensure the study findings are grounded in the data.

Chapter 5.

Findings

The four major emergent themes related to the role of the physical and social environments of adult day programs on well being of older adults with dementia are: 'Design Matters', 'Social Connectedness', 'Staying Active', and, 'Community-based Health Services'. These themes are presented in this chapter.

5.1. Design Matters

One major finding of this study was that “design” matters, i.e., the architectural design of the physical environment of the adult day centres had a critical impact on the quality of social and care experience for the older adult participants, staff-participant interactions, and; care providers' ability to provide responsive care to their clients. Specifically, this theme highlights the importance of the architectural design process in the development of a successful built environment for adult day program services. The theme also focuses on analysis of how the physical aspects of the built environment (primarily composed of the architecture or building structure and interior design features) affect the people who use this environment.

5.1.1. Purpose-built and Participatory Design

The term 'purpose-built' has been co-opted by many in the development industry and applied to newer spaces and buildings such as the one accommodating the program at the JFADC. The JFADC is situated on the main floor of a multi-storey building and therefore the building footprint defines and limits the amount of floor area and configuration of the space allocated for day program use. The architect hired by the non-profit housing society did not consult staff at the JFADC, nor any other industry

specialists during the design and construction of the adult day program space. In contrast, the similarly called 'purpose-built' CADC was developed with an entirely different philosophy and process. In the CADC scenario, 'purpose-built' was an artful collaboration between the architect and CADC staff, as well as a hands-on tool for the design and construction of the space. The design process involved collaborative decision-making on the arrangement of real, hard material things with consideration given to the way these arrangements affects the people who use this environment. The CADC is a stand-alone building built from the ground up on its own site, and the resulting building form is morphology of the architectural design process. Similar to other adult day programs, an increasing and significant proportion of the CADC participants have dementia. Although the client and staff user requirements for this place type continue to evolve, physical design features were prescribed to support the clients with dementia, and evidence for including these features in new development is well documented (Moore et al., 2006). Based on this evolving understanding, the researcher has operationalized 'purpose-built space' as: space that was designed and built to serve a purpose or goal of supporting the needs of its users and would argue that the evidence suggests the JFADC should not be considered 'purpose-built'.

Prior to CADC's relocation to their new purpose-built facility, the program was accommodated in a nearby church hall for almost 20 years. According to the nurse coordinator (now retired, but still invested in the provision of quality dementia care at CADC), many program staff had been long-time employees, and were cognizant of the increasing demands for adult day care services in the community, particularly for those who were living with dementia. What began as a drop-in social program for older people in the church congregation had morphed into an adult day care services offering a range of activities and medical intervention from a registered nurse. Program workers voluntarily sought training in dementia care and the program continued to evolve to support the needs of the clients. When it became apparent that the program had outgrown its space in the church hall, the church Deacon along with many other local stakeholders successfully advocated for the required land and funding for the construction of a the purpose-built facility.

A participatory design process ensued wherein a local architect volunteered his services and actively involved all stakeholders (employees, partners, clients, citizens and end users) to ensure the result met the needs of the users and was usable. Throughout the lengthy planning and design process, the architect engaged CADC staff in a meaningful discourse on the requirements and layout for the new building. The architect recalls there were several iterations because of changes in programming goals, resulting in design improvements and ‘value engineering’. Value engineering is a technique used during the design or engineering phases of a project to analyze whether the essential functions have been achieved at the lowest possible cost. During a follow-up interview by the researcher of the retired nurse administrator, she confirmed the critical role staff played in the design process:

“Staff had a lot of input in the design process, especially the program workers who are with the clients during the whole time. The architect really listened to their ideas because they knew what our clients needed. We asked for things like the building to be secure and for the outdoor gardens. We went and visited other adult day programs and asked what they liked and didn’t like so we had done our research! And staff also knew how important it was to have adequate storage space. The original plan was to have respite beds on the lower level and even more storage but there just wasn’t enough money at the time to operate the respite beds and Vancouver Coastal determined the downstairs would be for a preschool space.”

Various community stakeholders including staff (past and present), church leaders and local residents utilizing the CADC claim the participatory design process was a major factor in the creation of an environment that is responsive and appropriate to the users’ psychological and practical needs. Another term used to describe this overarching collaboration is ‘placemaking’ (Project for Public Spaces, 2014). Rooted in community-based participation, “placemaking” is a process of collectively shaping our public spaces to maximize shared value. It entails the planning, design, management and programming aspects of public spaces and facilitates creative patterns of activities and connections – cultural, economic, social, and ecological – that define a place and support its ongoing evolution. Placemaking at CADC has worked to strengthen the connections between the people in the setting and the place they share. The process also effectively capitalized on a local community’s assets, inspiration, and potential and ultimately created a high-quality public space that promotes people’s health, happiness and well-being.

5.1.2. Place Experience: Physical Environmental Features Supporting Clients' Needs

'Place experience' embodies codes related to: 'place type' and, 'what it feels like to be there'. The terms have been borrowed from Weisman's conceptual framework for a 'model of place' that promotes a holistic model of adult day centres (Moore et al., 2006). In their book *Designing a Better Day: Guidelines for Adult and Dementia Day Services Centres*, Moore and colleagues have generated prescriptive patterns, which lead to positive place experience in adult day centre settings. Premised on the idea that adult day centres are a new service, provided in a new type of building, their work underscores the need for purpose-built structures. In other words, a purpose-built building is an integral component of a positive place experience. A prior study by Geboy (2005) had highlighted the relationship between architecture and organizational change, establishing a formative link between person-centered care and the physical setting.

In a study by Bowling & Gabriel (2007) on lay theories of quality of life, one reason respondents gave to explain why certain things were important to their quality of life was: "feeling secure". The CADC is a safe, secure building with controlled access and exiting. Controlled access acts to discourage unauthorized visitors from entering the building and prevents elopement by the participants. According to the nurse at the CADC, the security system provides staff and caregivers with confidence that participants are safe and secure at all times. Surprisingly, considering two-thirds of the JFADC clients have dementia, their space does not have a monitoring system in place to control access and exiting. Since there is more than one point of entry to the space and not even an alarm bell to alert staff that someone has exited, they must constantly supervise the participants' movements. As a result, the nurse responsible for intake is very hesitant to accept clients who are known to wander because of the elopement risk. The nurse at CADC argues that all dementia clients have an elopement risk and all adult day programs need to be concerned with physical safety and psychological security on the part of participants, staff and families:

"They may not be persistently exit-seeking, it is human nature to want to go home if you feel lost. During transition times especially when you have a number of people walking around because they are not part of an activity, you'll notice certain people start wondering what to do and hear them asking themselves: 'Am

I supposed to be here?', 'Where are my kids?', or, 'Who is feeding my dog?', and then they think 'I better go home and check on things'.... and so off they go!"

Other safety features that have been incorporated in the design of the CADC include the provision of: wide hallways for manoeuvring; toilet stalls large enough to allow for staff assistance in transfers and with personal care; and, handrails along all corridors (including along the paths in the outside garden area). Only the CADC, because of its siting, is able to provide a freely accessible, secure outdoor area. Both of the study sites, however, ensure client safety by providing: wheelchair accessibility, grab bars in the washrooms, even floor surfaces made from non-slip materials, and safe storage of cleaning agents and medications.

Related to safety characteristics are aspects of the physical environment that support functional independence. Functional independence is defined as the ability to perform daily living activities safely and autonomously. In the context of dementia, the traditional approach in many care settings has been to focus on interventions for an individual's loss of abilities, both cognitive and physical. Research from the Australian Department of Health and Aging, has shown that focusing on abilities rather than deficits assists clients to enhance their independence in the community and avoids/delays residential care admission (Australian Government Productivity Commission Report, 2011). Adopting a functional independence service delivery approach in adult day program settings means "observing and listening to clients" and "designing/modifying environments to support losses and enhance safety" (Smith, Gerdner, Hall & Buckwalter, 2004, 1757).

Toileting is an important activity in relation to a person's dignity and perceived independence, and the ability to continue to perform this personal function is influenced by the physical setting. At the CADC, the washrooms are located in close proximity to the dining room and activity spaces, and along clear circulation paths. Based on observations, clients seem to have the necessary visual cues (sightlines, signage) to easily identify them, and 'come and go' independently. All washrooms are large enough to accommodate a walker or wheelchair, as well as an adequate turning radius for manoeuvring. In addition, the washrooms have been designed with grab bars on either side of the toilet, levered doors that open easily, contrasting colours for the sink and

toilet and user-friendly water faucets. Staff at CADC seem satisfied with the location and design of the washrooms; however, they have commented that they could use at least one more washroom at certain times of the day.

“We probably could use a couple more bathrooms, they are quite busy and there is no designated staff washroom”

Conversely, the washrooms at the JFADC are all located ‘around the corner’ in a hallway that is shared with the assisted living residents, demanding a greater physical and cognitive competence on the part of the adult day program participants in order to be used successfully. Although there is one washroom with an automatic door button in the foyer area, the space is often busy with a group activity and the participants tend to use the cluster of washrooms located in the shared hallway. Female participants have a choice between using the communal washroom that has narrow stalls, or one of two other private washrooms that all of the male participants use. The washrooms have been judged by staff to be somewhat inaccessible due to: placement of the grab bars (not always on the right side for a stroke victim); heavy doors that are difficult for most of the frail clients to manage; and, limited space for walkers/wheelchairs. One activity worker at JFADC describes a typical experience:

“Problems arise when female clients try and use the main washroom with walkers because there is not enough space in the standard toilet stalls for the walkers to fit, which forces them to let go and then they have nothing to hold onto when entering the stall. Also, the two single washrooms that are often occupied by the men because that is their only option may have more room for walkers but certain clients cannot use the grab bars if they happen to be located on their weak side! There should be bars on either side of the toilet to hold onto.”

To the extent possible, the design of both the CADC and the JFADC support a participant’s orientation or, sense of their surroundings, reducing the cognitive demand of having to remember where they are. Both adult day centres have big windows allowing natural light to interior spaces. Participants enjoy a strong visual relationship to the outside, which helps with orientation to time and season. A view of outdoors also encourages usage and awareness of nature, and according to staff, fuels participants’ desire for outings. Studies have shown people with dementia have a lower tolerance for stress and fewer coping resources than individuals with normal cognition, and as a result are more susceptible to negative influences of the physical environment on their

behaviour and well-being (Smith et al., 2004). People with dementia have a better chance of finding something if they can see it from where they are, and both adult day centres offer almost full visual access. In addition to the unlimited visual field in the spaces, staff members at both study sites have incorporated other orientation information for the participants (e.g., time, place and person-related), to promote an improved sense of control and self-esteem. Examples include: large calendars, daily agendas, photos of recent events, and holiday theme decorations.

The CADC has the added advantage of cueing systems such as: an internal walking path; groupings of chairs in a variety of spaces signifying intended group activity areas; and, access throughout the day to the kitchen and dining room areas also assist the participants in reaching and recognizing a destination. The enriched physical environment of the CADC encourages movement and provides reminders to compulsive walkers about the opportunities to engage in social interaction and other program activities being offered. The nurse coordinator at CADC emphasized how important the walking loop was in reducing clients' agitation and anxiety, which is often the source of negative and disruptive behaviours.

"I have no idea how they manage at sites without this feature because when someone is anxious, it really helps them to be able to walk...and we walk the loop endlessly with them. Anxiety is a big issue for some of our members...their guts may be churning and they feel breathless and panicky, or they may be delusional or hallucinating...so they'll seek us out for help, and thankfully, we can always suggest that they walk the circuit with us. You really would not want to leave the building with someone in this agitated state because you might not be able to get him or her to come back in...and there is a huge risk they will bolt."

Lastly, the experience of place for someone with dementia is greatly affected by the level and quality of sensory stimulation. Research has suggested that both overstimulation and under stimulation are important determinants of behaviour and well-being (Cohen-Mansfield, 2000). A noisy or excessively busy environment may overstimulate a person with dementia, leading to either physical aggression or attempts to escape (Mast, 2001). Several staff members at the CADC commented on the poor acoustics in the main living room area. Depending on the activity, the high vaulted ceilings can create a noisy echo chamber, which is problematic for some participants, particularly those with hearing aids. Participants who might prefer a quieter, more

intimate setting are encouraged to attend the smaller group activities in one of the other rooms/spaces. When it became evident the main activity room at the JFADC needed a divider so participants at one group activity would be less distracted by what was happening in an adjacent group activity, activity worker staff lobbied successfully to have one installed. Although the divider is not mitigating the noise interference, there is less visual distraction and it has helped participants maintain focus on their respective activities. On the other hand, an environment that fails to provide meaningful stimulation creates an unmet need, which can lead to negative behaviours and moods. Again, both of the adult day program settings endeavour to strike a balance in the amount and quality of sensory stimulation they provide their clients. The activity program coordinator at the JFADC related the following strategy for keeping participants engaged:

“Activity spaces are assigned according to the size of the group. If there are an equal number in each group, we try to make sure groups are rotated between the larger living room space and the smaller foyer space so people can have a change of scene. This is more important for the group that spends more time in the smaller space for exercise because it is not as visually stimulating or comfortable as the living room space. It is obvious that participants start feeling a little under-stimulated because it is confining and there is nothing interesting to look at”.

Both the JFADC and the CADC program staff have added elements that contribute to home-like environments: smells associated with baking and cooking, plants, a resident cat at the CADC, comfortable chairs, pictures, artwork, coffee tables, books, piano etc. The original plans for the JFADC did not have a ‘quiet room’ for participants to rest or sleep, so the staff have commandeered additional space (intended for a wound clinic that never materialized) adjacent to the adult day centre space for this purpose. The CADC participants enjoy the many benefits of unfettered access to the external natural environment. On warm days, participants congregate in the secure garden space for activities, and are seen wandering along the pathways, and sitting and chatting with each other and with staff during transition times. And, the CADC design also included the following well-used spaces: smaller, quiet sitting areas, smaller activity rooms, a music room and a quiet room with a bed.

5.1.3. Environmental Assessments of Study Sites

The Adult Day Program Physical Environment Assessment Tool (ADPPEAT) was used to determine the extent to which the CADC and the JFADC environments adhere to key environmental design principles critical to supporting needs of persons with dementia. To begin with, descriptive information was collected in order to compare the two study sites and this, along with other relevant site information is included in Table 1 in the previous chapter on Methods. Next, nine design principles were used to evaluate the two ADC spaces with the benchmark that they: are safe and secure; have good 'visual access' and afford functional independence; reduce unwanted stimulation; highlight important stimuli, reduce agitation and provide for planned wandering; are familiar; afford autonomy independence and control; afford meaningful activities; and, meet the needs of staff. Analysis of data collected from the ADPPEAT identified strengths and weaknesses at each adult day centre site.

Each principle is considered to be a sub-scale and the sub-scale score indicates how supportive an environment is for persons with dementia on any given design principle. A score for each of the nine sub-scales is calculated out of 10 and a score lower than 5.00 indicates the physical design features of the program are in need of improvement in order to better support the environmental needs of a person with dementia (Brown, 2012). Results from this study (see Table 2) provided the researcher with a basis for comparison between the two study sites.

Table 2. ADPPEAT Scores

Principles	Cedarcrest ADC Scores	JeanFalconer ADC Scores
Spaces that are safe and secure	10	5.0
Spaces that have good 'visual access' and afford functional independence	7.78	3.33
Spaces that reduce unwanted stimulation	10	5.45
Spaces that highlight important stimuli	6.25	5.0
Spaces that reduce agitation and provide for planned wandering	10	2.86
Spaces that are familiar	7.5	7.5
Spaces that afford autonomy, independence and control	8.57	7.14
Spaces that afford meaningful activities	8	6
Spaces that meet the needs of staff	6	8
Total score	73.80	50.28

The CADC received scores above 5.00 for almost all of the principles, the highest (i.e., > 8.0) being for providing spaces that: are safe and secure, have good 'visual access' and afford functional independence, reduce unwanted stimulation, reduce agitation and provide for planned wandering, afford autonomy, independence and control, and afford meaningful activities. Not surprisingly, the lowest sub-scale score for CADC is with the last principle related to spaces that meet the needs of staff.

Results from the assessment done at the JFADC indicate the environment was not as supportive as it should be for persons with dementia. Sub-scale scores were all lower than those for the CADC with the exception of the sub-scale relating to spaces that meet the needs of staff. The staff at the JFADC have a designated office space and washroom that are for their use only. The highest sub-scale scores were for spaces that: are familiar, afford autonomy, independence and control, and meet the needs of staff. The sub-scale scores lower than 5.00 were for spaces that: have good 'visual access' and afford functional independence and reduce agitation and provide for planned wandering. Sub-scale scores ranging from 5.0 – 6.0 include the measurements

for spaces that: are safe and secure, reduce unwanted stimulation, highlight important stimuli, and afford meaningful activities.

5.2. Social Connectedness

Social support has been identified as one of the twelve key determinants of health by the Public Health Agency of Canada (Public Health Agency of Canada). The same report highlighted a number of studies, which show the positive impacts of social support on the health outcomes of older people (Lansdowne, 2011). For older people who have shrinking support networks and increasing physical and cognitive decline, social engagement becomes a critical facet of healthy aging. Social support helps to slow cognitive decline, the onset of dementia, and the progression of disability. It also has a positive effect on longevity and both physical and mental health status, and the potential to moderate the functional impacts of illness and disability in old age by providing a sense of control and purpose (Lansdowne, 2011; Mendes de Leon et al., 2001).

Among its multiple objectives, the CADC and the JFADC adult day programs endeavour to provide a positive and supportive social setting for older adults who are at risk of social isolation by keeping them socially engaged and active. This is particularly important for community-dwelling people with dementia (Crooks et al., 2008), and the evidence from the literature confirms that the social environment of adult day programs are highly valued by participants and caregivers (Molzahn et al., 2009). In their study on quality of life associated with adult day centres Molzahn et al. (2009) noted that all of the participants talked about the importance of their social relationships to their quality of life.

5.2.1. Nexus for Social Inclusion

Families having a loved one with dementia at home are recognized as being at a greater risk of social isolation from their community due to the increased care and support needs as the cognitive functioning declines over time. A socially inclusive society is defined as: “one where all people feel valued, their differences are respected, and their basic needs are met so they can live with dignity” (Cappo, VicHealth Research

Summary 2, 2005). Therefore, strategies such as providing adult day program services that foster social inclusion are essential to ensure that older people with dementia are supported to remain involved and connected to social interests and contacts within the local community. Theoretically, the key outcomes for adult day programs would include: improved health and well-being of participants; increased local social inclusion opportunities for participants; expansion of service and community capacity to support social connections and engagement opportunities for participants; and promotion of a positive image and attitude towards older people and adult day programs within local community.

At the JFADC, program workers have used information technology and social networking tools to assist participants in promoting and maintaining social contact with their family, friends and community. Specifically, the staff members have assisted participants with tools such as Skype, Facebook and email so they can continue to be in contact with relatives and other interests. One staff member regularly accepts phone calls from participants who may be on a day off at home but need technological assistance, or help with research. Both CADC and JFADC offer opportunities for volunteering; however, the CADC with a designated 'volunteer coordinator' has a more established system for recruiting volunteers – including older persons living nearby in the community – in the program. Research has shown that the combination of religious participation, social interaction with family and friends, as well as volunteering is correlated to lower morbidity rates and fewer people reporting on poor health (Fyffe, 2012). Other studies have found that volunteering has a positive affect on sense of belonging and social capital, which is linked to enhanced levels of subjective well-being among older adults (Fyffe, 2012; Musick & Wilson, 2003; Theurer & Wister, 2010). The volunteer coordinator at the CADC had this to say about their volunteers:

“We have a lot of regular volunteers. Some of them are the spouses of participants...some have kept volunteering long after their spouse was placed in a long term care home or passed away. The volunteers help with one-on-one activities and in the dining room during meal and snack times. They are terrific about picking up other chores here and there and this allows the activity workers to concentrate on the activity programming and personal care tasks”.

Intergenerational programs at the CADC with local pre-schools and child daycares are another example of practical and enjoyable intergenerational social inclusion approaches. The CADC shares the building with a child daycare and the proximity of the two groups facilitates regular program collaboration. With its outdoor gardens and spacious interior, the CADC provides a wonderful setting and opportunities for multiple generations such as older adult day program clients, students, teachers, parents, toddlers and staff to connect socially. The aim of these programs is to develop relationships, share life stories, skills and knowledge, and develop mutual respect for all participants. The researcher was able to observe one such program where the preschoolers joined the adult day centre participants in the spacious living room for a modified bowling game. Following the boisterous activity was a quieter circle time and story reading by an older participant, who happens to be a retired primary school teacher, and nutritious snacks.

Research from multiple disciplines emphasizes the relation between social engagement and a sense of connectedness (Haslam, 2014). In addition to having friends and family to rely on, there is evidence that ties to social groups – that provide a sense of social identity – are also important for mental health and well-being. Haslam and his colleagues (2014) argue the reason for this is that groups extend us in ways that one-to-one connections often do not. “They also give us a greater sense of purpose, belonging, and efficacy” (Haslam, 2014, p. 2). The recreation therapist at the CADC shared some of the participants’ personal stories, which came to light when staff began a program called ‘Showcasing the Member’ which allows the group to celebrate the life of individual members.

“One member brought in a dress that was made for Queen Victoria by her grandmother who had worked as a seamstress for the Queen. She actually put the dress on to tell the story of its history. Other members are decorated veterans and they have brought in their bravery medals to share with the group. And one gentleman who normally never speaks to anyone brought in a photo of himself in his firefighting uniform and he was obviously so proud. Often the members don’t feel comfortable telling the story themselves so we will do it for them and they have their moment of glory. The other members are always really interested!”

“Another example is our sweetheart wall on Valentine’s Day. Everyone, including staff will bring in a picture of their sweetheart and we create a big display on it.”

Researchers have also highlighted the role of social connections in diverse domains of functioning. In a recent study undertaken by researchers at the University of Queensland, data was analyzed from about 3,500 people who took part in the English Longitudinal Study of Ageing (ESLA). The researchers found that people who remained members of multiple groups had far better scores on tests that measure cognitive ability (Haslam, 2014). Interestingly, these social group ties mattered even more with increasing age. The study was able to determine, for instance, that while a 50-year-old performed at the level of a 45-year-old, an 80-year-old had the cognitive ability of a 70-year-old. Other studies have found that the mere sense of social connectedness enhances achievement motivation (Walton, Cohen, Cwir & Spencer, 2012) and when someone is socially included they have social resources to help them solve problems and deal with stressors (Moody & Phinney, 2012). Conversely, when people's sense of social connectedness is diminished, their ability to self-regulate suffers and their cognitive performance drops (Baumeister, Tweng, & Nuss, 2002). One staff member at the JFADC made this observation:

“We absolutely encourage the formation of friendship circles. It is important to note that it's not us always helping them...we see how they can help one another. Many of our participants have lived through very similar things around the same time. Its interesting to see they are still able to build their own relationships and help one another.”

Recently researchers have been contemplating studies that have quantified the effects of the 'loneliness disease', warning that lonely people are nearly twice as likely to die prematurely compared to those who do not suffer feelings of isolation (Cacioppo & Patrick, 2008). Given this general health determinant, the current study found there are reasons to be concerned about a lack of support and funding for adult day program services in the Metro Vancouver area. Despite an obvious need for more adult day services, there are many people in the community who are unable to access them due to the 'back and forth' referral process and case manager backlog. And according to the nurse at the CADDC, many folks have never even heard of adult day services, which would suggest they are not widely promoted. During our interview, she shared her experience with the public health care system:

“Some programs are only open three days/week and they might only be able to support 15 participants a day because of their space and/or funding constraints. So someone might think it is just a minor service with very little impact. But at this purpose-built site, we can support 30-participants every day, five days a week, and make a much greater community impact. We are constantly advocating for more services because the waitlist for our program can be as long as 18 months!”

And, when questioned further about the process for referral she commented:

“When people are calling me for help with their loved ones, they usually need it right away...they are in crisis. They probably needed it months before but because of the piles of referrals case managers are dealing with, they haven't been seen yet. If someone calls and inquires about having 'Mom' attend the program because she has dementia and all she does is sit at home bored...she sleeps all day because she has nothing to stimulate her brain...she needs to get out of the house and socialize...that request becomes a referral and ends up in the case managers' pile of people to see. So then the case managers need to set priorities and they may have five other more urgent cases...maybe one where a man has been out wandering naked in the neighbourhood, or someone else who has been in and out of emergency 15 times because they are mixing up their pills...so who do you expect they will attend to first?!”

5.2.2. Satisfying Relationships

As family and work responsibilities decline, friendships are likely to be especially meaningful among older adults. Friendships form a central part of an individual's social support network and having friends is an especially strong predictor of mental health (Berk, 2009; Fiori, Smith & Antonucci, 2007). Social support and variables pertaining to social networks are also important factors related to quality of life of older adults (Molzahn et al., 2009). Unlike many family interactions that may involve daily needs and routine tasks, friendships often revolve around pleasurable leisure activities shared with friends. Also, the unique qualities of friendship exchange – openness, spontaneity, mutual caring, and common interests – result in more favourable experiences with friends than with family and have the greatest positive impact on their well-being (Berk, 2009; Quadagno, 2008).

At the February 2014 annual meeting of the American Association for the Advancement of Science in Chicago, psychologist John Cacioppo presented a report of his research confirming loneliness as a major health risk for older adults and his appeal

to baby boomers to protect themselves from becoming socially isolated resonated with social scientists and health practitioners alike. The research measured the effect of satisfying relationships on the older adults and found that friendships helped older people develop their resilience and ability to recover in the face of adversity, as well as an ability to gain strength from stress rather than be diminished by it. When older people feel isolated from others, they may suffer from disrupted sleep, elevated blood pressure, increased cortisol levels, altered gene expression in immune cells, increased depression and lowered overall subjective well-being (Harms, 2014).

The diverse functions of friendship in late adulthood clarify its profound significance. At the CADC and JFADC programs, friendships are encouraged and supported. At the CADC in particular, staff members confer regularly about potential for friendships and make an effort to group people with similar cognitive functioning and cultural backgrounds. As a result, a sense of companionship is evident at mealtimes and during the group activities. The nurse coordinator at CADC described how the program workers support the participants at the adult day program:

“At lunch there is a seating plan everyday. We choose who will be sitting together and assign the seating with place nametags. We are actually pretty good at matching people in terms of cognitive abilities but also in terms of language, cultural backgrounds and interests. We matched up two Hungarian-speaking ladies and they connect well. They look for each other every time they come. And its amazing because they both have really advanced Alzheimer’s and have difficulty expressing themselves in English...can’t remember where they are or their kids names...yet they find each other and seem to be communicating in their native language!”

“And even those who haven’t made a true friendship connection with others, regularly sit together during the morning social time in the dining room. They’ll arrive in a certain order and sit with others for company while they wait for their other best buddy to arrive. If some of those people connect really well, we’ll try to seat them together for lunch.”

There is also evidence of friendships being formed and supported through participation in activities. An activity worker from JFADC had this observation:

“There are a few people who have really bonded. They stay together and may both go together to arts and crafts for example even though the activity may not be suitable for one of them. But they really want to stay with their buddy because the social connection is more important than having success at the activity.”

According to the program development coordinator at the JFADC, friendships can also provide a link to the larger community. For instance, several participants arrived in Canada from Italy around the 1950's and seem to know each other from the neighbourhood or other social groups they belong to, such as their church or the Italian Cultural Centre. These clients have formed friendships on their own through informal, self-initiated interactions without staff facilitation and the formal participation in the program. A program worker also mentioned their connection and described it as follows:

“There are two Italian gentlemen who always sit together. They love to talk to each other. In fact, they are often happy just sitting and chatting instead of participating in the programs. And naturally, we just allow this to happen. It is good for them to have an opportunity to speak to one another because they have quite a bit in common in their home situations. Both men have wives who are cognitively impaired and are very frail. Interestingly, both men are quite high functioning and have been encouraged to come here to enjoy a social opportunity!”

Late life friends accept one another and seem to be able to shield one another from negative judgments about their capabilities and worth as a person, which stem from stereotypes of aging. At the JFADC, the researcher observed participants assuming a caring role. Mary, for example, was a very caring person and helped others by holding walkers, etc. A program worker mentioned that Mary has ‘taken many of the participants under her wing’. There was a similar story where a friendship formed because of a caring role:

“We had a lady here before who helped another lady who was blind. She stuck to her side the whole day and helped her get to the dining room for meals and provided her with verbal cues during activities. So they formed a wonderful friendship based on that helping role”.

Protection from psychological consequences of loss is another function of friendship. Older adults in declining health who remain in contact with friends through phone calls and visits show improved psychological well-being and when close relatives die, friends offer compensating social supports (Fiori et al., 2007). Older adults may actively narrow their social environments in an adaptive process of emotion regulation, limiting their interactions to only the most satisfying ones. Older people report that the friends they feel closest too are fewer in number and live close by in the community (Berk, 2009). Although older adults prefer familiar, established relationships to new

ones, friendship formation continues throughout life. As in earlier years, older people tend to choose friends whose age, sex, race, ethnicity, and values are similar to their own (Berk, 2009). Shared life history can also serve as a common ground for making connections. For example, the nurse coordinator at the CADC observed:

“It is interesting that a lot of old vets often get together here because they have stories to share and a common history, which creates an immediate bond.”

Given the heterogeneity of social network types and the variable quality of support that older people receive from them (Fiori et al., 2007), adult day programs should be viewed as an important intervention for identifying older people at risk of not having their social support needs met, and tailoring the program and environment to support participants’ particular needs. And as friends of the same age die, the very old report more intergenerational friends (Berk, 2009). An activity worker at JFADC who is computer-savvy and fluent in Cantonese and Mandarin as well as English has established a mutual friendship with a program participant who regularly e-mails him Chinese-language computer applications that he can use when leading mental aerobics programs at adult day centre. The recreation therapist at CADC had this heartwarming description of her work environment:

“Something that is really special here is the staff members really love to be here to do their job. They say it doesn’t really feel like a job to them. It feels more like family. When we have a good day here...it’s about relationships and improving [members] quality of life. We always try to make sure they have a great day”.

A qualitative research study conducted by Molzahn et al. (2009) at three adult day care centres in the region: “Quality of Life Associated with Adult Day Centres”, included older adults participating at the adult day centres and their family caregivers. One of the findings was that caregivers also perceived the value of social networks and relationships in the adult day program setting, both for themselves as well as for the ones to whom they provided care (Molzahn et al., 2009). According to the nurse coordinator at the CADC, a typical account from a caregiver might be:

“After Dad comes here and he almost like he was before he had dementia...he is brighter, more engaged...makes eye contact and initiates conversations. And sometimes this positive affect even lasts into the next day!”

The nurse at the CADC confirmed that although most family caregivers need their respite time for themselves, some like to come to the Centre for a social opportunity. There are a couple of husbands that walk over to join their wives at the 2:30pm tea time and are very welcome to participate in the sing-a-long at the end of the day. Family days and the entertainment programs such as 'Big Band Entertainment' also provide opportunities for family members and caregivers to connect, share experiences and support each other.

5.3. Staying Active

The third emergent theme, 'Staying Active' relates to older adults' participation in the activity program at the adult day centres. Activity program is a core component of ADCs. Researchers in the field of social gerontology have recognized that participation in personally valued or meaningful activities, including physical activity, contributes to individual well-being (Eakman et al., 2010). Therefore, a carefully planned program with meaningful activities can result in a therapeutically beneficial day for adult day care clients, a sense of accomplishment for staff, and most importantly, an improved quality of life for participants (Balada, 2011). A meaningful activity has been characterized as an activity that has an obvious and acceptable purpose, is autonomously chosen, provides pleasure, is socially appropriate; and, is failure-proof (Zgola, 1999 as cited by Moore et al., 2006). It can be challenging to achieve these purposes in an unsupportive physical environment and findings from this study provide an argument for a design approach that integrates the physical setting with the activity program. The first sub-theme, 'Meaningful Activities' focuses on the appropriateness of activities from a psychosocial perspective and the factors importance of the physical environment. The second sub-theme, while referencing certain physical features of the environment, is more about the maintenance and support of participants' current interests and abilities for a their sense of continuity and normalcy.

5.3.1. Meaningful Activities

Several empirical studies have provided evidence of a link between engagement in meaningful activity and well-being that relates to the needs of people with dementia

(Harmer & Orrell, 2008). For instance, there is greater significance of typical everyday activities such as cooking and dining for people in early stages of dementia than previously considered; maintaining continuity and being able to contribute are important needs (Menne, Kinney & Morhardt, 2002; Moore, 2006). Studies done with people with mid-stage dementia show that they are more likely to participate in activities they could relate to, such as reminiscing or music programs, and the well-being of people with late-stage dementia was shown to improve when they were engaged in sensory-motor type activities such as simple physical games and being outside (Kovach & Henschel, 1996; Perrin, 1997). Interestingly, Jarrott & Bruno (2003) found that people with a range of cognitive impairment were able to participate in music-based intergenerational activities, which improved their mood.

Activity program staff and volunteers at both study sites strive to provide their participants with personally meaningful and therapeutic activities. Daily activity schedules are thoughtfully planned on a month-to-month basis and all staff members are involved in this process. Leisure histories are completed for participants at both the CADC and the JFADC as part of the intake process by the registered nurse and this information is relayed to other staff members. Regular meetings provide staff with an opportunity to discuss how participants' past activities and preferences will be reflected in the program. Common to both sites are factors that influence the activity program: continually changing needs and abilities of the participants; training and number of staff; and constraints and resources of the physical setting.

With respect to an optimal number of people for participation in a particular activity, staff at both study sites understand that overpopulation may result in frustration and exclusion; therefore, they take care to limit the number of participants to those who might be reasonably expected to engage in the activity. It is also evident that staff members at both sites understand the reality that many of the adult day program participants have fewer and fewer opportunities to make choices in their daily lives. Therefore, it is their practice to offer the participants choices for themselves whenever possible, including which activities they may (or may not) participate in. A parallel program is provided or alternative options are offered to those participants who do not want to join a group activity. Although studies have shown the positive outcomes of

social engagement, Rozanova et al. (2012) found that it is unclear whether these outcomes are associated solely with engagement, or more likely, with engagement in preferred activities. Other researchers have found that social activities in which older adults participate in voluntarily, and that are personally meaningful to them, produce positive outcomes (Rozanova et al., 2012). At the CADC, choice prevents boredom and facilitates a sense of autonomy. The recreational therapist at CADC illustrates how staff respect one individuals' choice to not participate in activity programs:

“We have a member who is a retired physician who brings his medical journals with him on the days he visits. We put a sign up saying: ‘Doctor’s Office’ in a space behind the front office and he’ll sit in there undisturbed until the afternoon program at 1:30pm. Because we know that is his idea of ‘productive time’ and he doesn’t want to be bothered with a group game or the transition activities around the lunch hour...and that is his choice”.

At the JFADC, staff also work hard to provide participants with options if they are not interested in a planned group activity. A program worker introduced me to a female client who spends her time decorating the facility with elaborate felting displays and explained how having a choice works for her:

“She is very good with her hands and would rather be busy doing her arts and crafts than sitting and doing mental aerobics. She says the mental aerobics drive her crazy! So we just set up a table with crafting materials for her and she happily creates. Even though she withdraws from some of the major programs and from mental aerobics, she keeps busy. She always has something to do. With Christmas coming she is working on little Christmas trees as gifts for the other clients and this is her way of contributing.”

The JFADC give regular feedback about activity programs at monthly meetings of the ‘Seniors’ Council’. The Seniors’ Council is a small group of clients who are willing to act as representatives for the larger client group. Monthly meetings are held on different days of the week so everyone has a chance to act as a representative. An activity worker has observed that some of the clients are very shy about voicing their opinions or complaints and the staff will encourage them to talk about their preferences for activities.

A critical factor to the effectiveness of the activity program is the staff to client ratio. Staff at the CADC program are employed by the health authority and therefore if someone is absent, the nurse coordinator can draw on a pool of qualified and competent

casual workers to fill in where necessary, ensuring a full staff complement every day of operation. The JFADC, being a contracted service, does not have access to casual workers and operates with fewer staff on days when staff members are away on vacation or are off sick. For JFADC staff, this is especially problematic during the time between activities also known as 'transition times'. According to activity workers, lunch hour is usually staggered for the participants, which means some of the participants are waiting longer to be seated in the dining room and need to be occupied during that time. Also, participants are finishing their lunch ahead of others and start to wander back to the activity space to see what is going on. An extra person is often required to monitor the coming and going of participants, make sure participants are happy, help with toileting, and prevent elopement. On days where JFADC is operating with less staff, the program development coordinator, nurse or administrator tries to assist in this transition time. Having enough staff is critical to a supportive environment and to the job satisfaction of the program workers. In a study examining the life satisfaction of personal care workers delivering dementia care in day care centres, researchers found that the following conditions predicted a high level of self-efficacy in staff: female gender, perceived adequacy of training, low staff to client ratio, and high emotional support from colleagues (Yan & Ho, 2007). Staff members at both sites also mentioned the importance of having volunteers' assistance during transitions and for providing alternative activities and one-on-one support to participants in the program.

Program workers also need to consider the capabilities of the physical setting in addition to the number of clients, their interests and needs, the number of staff available for activity facilitation. The staff members at the CADC consider the physical setting to be highly supportive and versatile with respect to programming activities. To begin with, floor area dedicated for the CADC is more than three times the size of the JFADC and boasts a variety of spaces, including a secure outside space for option for a broad range of activities. In contrast, the physical space at JFADC limits the number and type of activity offered. Group activities such as the modified exercise program that are usually held in the foyer area feel constrained in the small L-shaped space. A program worker described the morning space arrangement:

"The whole group is divided into two small groups for exercise. One group is about 15 people and the smaller group is about eight people, sometimes more.

The small group is getting bigger though, and that space is not big enough...for the one-to-one attention they need with the modified exercises. The space was of course never really designed for our exercise activities, it was originally just a flow-through foyer area and we were going to share it with a wound clinic. Often we have to decide who will stay in the larger group instead which isn't the best option for their abilities".

Also, several program workers at the JFADC commented on the lack of a secure outside space for activities. Occasionally, staff will plan an activity on the sidewalk area outside the front doors such as a barbeque; however, since this area is very exposed with no sun or rain protection built into the façade of the building, staff need to erect a canopy to ensure the participants will enjoy their outside experience. There are very few outside activities planned because the space is limited and clients require supervision when they are outside. One program worker in particular who has an interest in developing an outside patio area had this to say:

"This is a **key** area for design improvement. We need a designated outside area because sometimes it gets quite stuffy and warm inside, and the clients would like to get out into the fresh air. But we don't have that opportunity to just allow clients the freedom to step outside without supervision. For certain clients who smoke and are not an elopement risk, we'll let them out to sit outside on a chair and have a smoke. But we really need an outside, secure space to benefit all of the clients."

Another obvious problem for the activity workers at the JFADC is with having only one larger, elongated room for most activities. The large exercise group uses a space at one end of the room in the morning and a narrow room width, and the couches that separate the exercise space from the gathering space by the small kitchen hamper movement. The program requires participants use chairs for support during stand up exercises and when one accounts for the large group of participants circling their respective chairs and the numerous walkers situated around the room, there is insufficient floor area for personal comfort and safety. To further frustrate the activity program staff, when there is more than one activity happening in the room, sound travels between the groups and, especially from the kitchen area making it difficult for the participants to hear and to stay focused on the activities. Also, if a participant wants to walk because she/he is feeling agitated or just sit in a quiet corner because she/he needs a break from the activity, there is no comfortable and supervised place to 'just be' without creating a disruption to the activity program.

In contrast, a few specific activity rooms and design features at the CADC which support and facilitate therapeutic activities are: the secure outside area for sun worshipping, observing nature, wandering, gardening and many socializing activities; the internal walking pathway for the daily walking program; the spa and salon rooms for bathing and personal grooming programs; the crafts space for table activities such as wood-working, arts projects (some inter-generational) and, bingo; the music room for quieter, more intimate programs; the main living room for large-scale entertainment and presentations; the large open space adjacent to the living room for the daily exercise program; and, the dining room for social time, lunch time and card games. Finally, the researcher heard positive comments from CADC staff regarding an often-overlooked aspect of the physical environment in adult day centre programs: storage space. Having adequate and convenient storage space for the materials and equipment required for various activities another key factor to the effectiveness and continuity of the activity program at CADC.

5.3.2. Maintenance of Abilities

The activity programmers at both the JFADC and the CADC have described several creative programs, some of which have therapeutic benefits. The researcher was able to get a glimpse into the activity binder at the CADC and noted that each program had a detailed outline, with a list of the intended therapeutic benefits such as: cognitive stimulation, opportunity for creativity, pride in accomplishment, pride in process, pride in a finished product, opportunity to reinforce hospitality abilities, intellectual stimulation, keep up with current events, delight in being entertained, sensory stimulation, opportunity to be part of a peer group, etc. The staff at both study sites acknowledged that participants and staff also enjoy a fun time, but the underlying intent of the activities is to support participants' maintenance of their abilities. The CADC nurse asserted their activity program often has a 'stabilization effect' where participants who had been in rapid decline in the home environment have enjoyed some time in a plateau during which there is no cognitive or physical loss. She pointed out that this effect is technically an improvement from a nursing perspective.

At both the JFADC and the CADC, all staff work collaboratively to ensure the activity programs meet the physical, emotional, cognitive, spiritual and social needs of the participants. The activities also reflect participants' interests and varying abilities, are age-appropriate, and continually adapted to their changing needs. The theoretical foundation used in the development, implementation and evaluation of the programs at the CADC: The Leisure Ability Model (Peterson & Gunn, 1984) ensures the programs are therapeutic in nature. The model focuses on three areas, which address participants' needs: functional intervention, leisure education and recreation participation. The recreational therapist audits each program annually to gauge whether it is meeting its pre-determined goals and objectives. In addition, the recreational therapist explained that program workers are trained to continually assess the members using a tool called the 'Members' Abilities Enhancement Model'. This is an innovative tool developed by the previous nurse coordinator and has contributed to the participants' on-going success at the CADC. By observing an individual's reactions to specific cues, staff members are able to form a multi-dimensional picture of that person's abilities including their ability to perform physically, interact socially, and process information. This information is useful for designing an activity program to suit an individual's needs. One of the goals of this process is to ensure that participants can successfully engage in an activity program. Both the nurse coordinator and the recreational therapist at the CADC spoke of how staff members work to ensure participants are successful. The nurse said:

"So staff, being aware of their cognitive deficits, may suggest they go to something where they're more physically active like the bowling program. And then they can be cued at every turn...and they can do that and be successful at it."

The recreational therapist also mentioned several examples including:

"Quite often the program workers need to assess if a person can sequence. For example, can they follow a two-part instruction like: 'Glue this [object of some kind] on the paper'? It may become evident they are not getting the 'on the paper' part because they only understand the 'put the glue on object' part. So, if a program requires someone to have the ability to sequence and they cannot do it, the program workers will break things down into simpler steps to ensure members can achieve success. The program worker will but glue on the object

and then hand it to the member...and the member will take it and put it on the paper.”

Mobility promotes healthy aging as it relates to the basic human need of physical movement to carry out specific tasks for daily living; however, mobility declines with increasing age and chronic illness. Limited mobility is defined as a condition in which a person experiences a limitation in independent physical movement (Shumway-Cook, Ciol, Yorkston, Hoffman & Chan, 2005). Researchers have observed higher mortality rates among older people with functional deficits (Cabrera et al., 2012; Landi et al., 2010). A recent study examining the correlations between mortality, hospitalization, and mobility of non-institutionalized dependent older adults found that the group of participants with the highest functional deficits – those who were bedridden or confined to a wheelchair – presented the highest mortality rates after one year (Cabrera et al., 2012). Since almost half of community-dwelling older adults report some type of limitation in mobility, so it is not surprising that maintaining mobility is a major goal for older adults to remain independent (Iezzoni, McCarthy, Davis & Siebens, 2000; Shumway-Cook et al., 2005).

On an encouraging note, multiple studies indicate that interventions that have a combination of aerobic exercise and resistance training and aim to increase balance, walking endurance and muscle strength, can improve mobility in older people (Bean et al., 2005; Means, Rodell & O’Sullivan, 2005; Rantanen, 2013; van Gool et al. 2005; Yeom, Keller, Fleury, 2009). Research has also supported the theory that physical activity programs involve much more than the performance of a simple physical act (Rejeski & Mihalko, 2001). Studies have shown that enriched interactions between program leaders and participants lead to increased perceptions of control and enjoyment; and, experiencing enjoyment in the performance of physical activities is related to life satisfaction (Rejeski & Milhalko, 2001). According to the registered nurses overseeing the physical activity programs at the two study sites, daily exercises with enthusiastic program leaders has indeed provided enjoyment, physical benefits and increased mobility to the participants. Depending on their physical abilities, participants are given a choice of two different exercise groups. At both study sites, a smaller group of lower functioning participants meets in a secondary space to do their exercises in a seated position.

Within the exercise sessions at the CADC, staff have incorporated 'Otago Exercises' which are leg strengthening and balance re-training exercises that are intended to help reduce a person's chances of falling and also, the severity of injuries from the falls. The recreational therapist at the CADC informed me that researchers have come into the facility to do a testing series on a few of the participants and found that Otago exercises had improved the members' leg strength over time. Also, research has shown that a multi-factorial fall prevention program, which included strengthening exercises, was beneficial for very frail older adults (Diener & Mitchell, 2005). In addition, the nurse at the JFADC described an innovative hand exercise program for stroke survivors that was developed by a group of students from UBC and incorporated in their daily program. The exercises seem to be providing a rehabilitative benefit for participants who are still experiencing some atrophy and weakness on one side of their body.

Research has shown that walking has many health benefits, including a delay in deterioration of cognitive function in people with Alzheimer's disease (Abbott et al., 2004; Larson et al., 2006). A recent study conducted by Julien et al., (2013) showed that individuals who do not walk outside their home report more depressive symptoms or a greater likelihood of possible clinical depression, suggesting that life habits such as walking play a central role in older adults mental health status. Walking is a daily activity for participants at the CADC and, according to the recreational therapist and nurse coordinator, has contributed to improvements in participants' physical and cognitive abilities, as well as their mental health status. All adult day program participants are encouraged by staff to walk following their lunchtime meal. A few of the more active participants are invited to step out with a staff member for a walk in the neighbourhood, but the majority of the members do several laps of the walking path within the facility. On nicer days, the doors to the garden are open to expand the loop offering participants an opportunity to enjoy the natural environment and fresh air.

The researcher has often observed staff members participating in the walking activity. The staff members encourage the participants to join them by modeling the behaviour, offering a steady arm where necessary and participating in a lively social exchange. The recreational therapist emphasized that walking activity was also

necessary for some participants to help relieve their anxiety and for their sense of continuity:

“There are a couple of members who are able to go outside for a walk, and they really need to get out and walk and walk. We have the staff to support them because they need to walk to get rid of their anxiety. Some have been avid hikers and they have done this their whole life.”

Whenever possible, the staff at JFADC try to incorporate walking in their program. Unfortunately, the interior physical environment is not supportive of walking due to the layout and the absence of a walking pathway/loop so staff need to take participants outdoors to facilitate this important activity. Both the weather and the hilly topography surrounding the site pose barriers to an effective walking program at the JFADC.

The staff at both the CADC and JFADC have developed a large number of activity programs for cognitive stimulation that are tailored to participants' individual needs. These activities often have the following themes: physical games, sound, childhood, food, current affairs, faces/scenes, word association, being creative, categorizing objects, orientation, using money, number games, word games, team quiz etc. The activity development coordinator mentioned the need for the 'tapping potential mental aerobics' program:

“An alternate group activity for those people who are not fitting in either because they speak a different language [note: activities already offered in two languages: English and Chinese] or, because cognitively, they cannot do a crossword puzzle. For some participants, certain activities just don't make sense for them. The other challenge is that we have some many different cultures that if you do idioms or something, it's really hard for some to figure that out. So, we might have three mental aerobics programs running simultaneously. And for that 'tapping group' it is mainly a game that we can all play together, take turns, and it will be a really simple game that everyone can figure out.”

Opportunities for reminiscence therapy are triggered by activities such as the 'Fellowship Program' at the CADC where participants are encouraged to sing their favourite hymns, or meditation where they are asked to reflect on those things they feel thankful for such as family living close by, or the safe clean place in which they live. Reminiscences also happen at both sites throughout the day as participants are stimulated by food aroma coming from the kitchen, or as they view photographs of

themselves at past adult day program events in the hallways. For Chinese New Year, participants at the JFADC arrive to aromas of traditional sugary treats that were being prepared for a group celebration by an activity worker who is also a terrific cook. The activity workers at the JFADC have been successful at using 'Cooking and Armchair Travel Programs' to encourage participants to share personal stories about their past lives in Italy or China. The mere presence of a researcher in their midst prompted participants at both sites to share personal information about their children and grandchildren. One CADC participant proudly told me his son was a physician in California studying Alzheimer's disease and would someday find a cure for people like him! And the presence of Bono – the resident cat at the CADC – reminded participants of their own pets, past and present.

5.4. Community-based Health Services

Health practitioners in Canada are faced with an urgent research and practice agenda for understanding the physiology and etiology of frailty in older adults and, for determining what is required to meet the needs for an increasingly frail, medically-complex older population. Frailty is a common and important syndrome that is increasingly prevalent in older age. It is distinguished from 'normal aging' by cumulative physiological and functional decline, which results in functional dependence and, a vulnerability to sudden changes in health status that can be triggered by relatively minor stressor events (Mason et al., 2008; Walston et al., 2006). The registered nurses at both study sites have observed the trend that clients participating in the adult day programs are far more vulnerable to frailty than they were a decade ago. Given the growing numbers of older people and the potentially important role of respite services, the identification of service models that provide effective and cost-effective respite for caregivers of frail older people is essential. At the same time, the literature characterizing adult day programs suggests this type of community service is evolving – moving past the clear dichotomy of social versus medical model – into a comprehensive, integrated model that provides a range of health, social and support services for an older population with diverse needs.

5.4.1. Personal Care

Personal care activities are private and therefore require smaller, more intimate activity settings. The capacity to provide personal care (e.g., grooming, dressing and toileting) is an integral aspect of an adult day setting and has direct therapeutic benefits related to hygiene, social acceptance and self-esteem. In general, compared to residential care facilities, there is a high staff to participant ratio for activity programs in adult day programs so that there is always an activity worker available for assist with personal care needs. A common condition among older persons, especially those with dementia, is episodes of incontinence, which can result in feelings of embarrassment and humiliation. Adult day programs attempt to maximize the independence of participants by providing a supportive physical environment and staff that are trained in providing personal care assistance. The nurse at the CADC explained during our interview how toileting assistance offers the participants a feeling of security:

“What makes us very different from a mainstream community centre or gathering place is that we are trained to provide personal care. If someone needs assistance with wiping themselves after they go to the toilet, or, if a person is incontinent and needs help to change their pads, or if they have an accident – which sometimes happens because people leave it too long and they don’t recognize that sensation...or, they recognize it, but the problem is they are too slow and they need six minutes just to walk to the bathroom – we are there to discretely help and hopefully, maintain their sense of privacy and dignity.”

Another loss of independence, which is difficult for older people to accept, is the loss of the ability to bath oneself. Many older people living in the community are faced with the reality that they will need to learn to trust the assistance of a relative stranger with this very personal and private activity. In an adult day program setting that offers bathing service, the psychological stress of needing assistance is compounded by both physical and cognitive deficits of participants. Many have age-related physical changes such as: increased skin sensitivity, decreased flexibility and muscle strength, and postural instability. When a cognitively impaired older adult requires assistance with bathing, the care providers are also often confronted with agitated behaviours stemming from distrust and fear (Moore et al., 2006).

The community-bathing program at the CADC has grown to be a valuable community service for both CADC participants and other local residents requiring

bathing assistance. The program is staffed with a part-time bathing assistant, and the nurse is regularly called upon to lend her assistance. The room with the tub or 'spa room' is conveniently located across the hallway from the nurse's office and its proximity enables the nurse to respond quickly to requests for assistance. According to the CADC nurse, in addition to many of the adult day program participants, the program is well subscribed by residents living in the surrounding neighbourhoods. One local female client benefitting from the personal and mechanical bathing assistance had this to say about her situation:

"I learned about the community bathing program from a nurse at the wound clinic. I come here because I can no longer get in and out of my bathtub safely! My niece is looking into whether my bathroom can be renovated to accommodate an accessible tub, but until that happens, I need some assistance. I want to stay living independently because I'm only 74...you know, I want to be able to visit my Mom at the nursing home where she lives!"

Both male and female adult day program participants at the CADC also benefit from a full range of esthetic services offered in the adjoining salon space. As mentioned previously, although there is a spa room at the JFADC, it is currently not operational and consequently, staff are unable to offer a community bathing program.

In spite of space constraints and the lack of designated spaces for bathing and personal grooming, the staff at JFADC do their best to assist participants with hair and nail trimming as needed. Interestingly, participants at both study sites are very grateful for any personal grooming assistance because they want to avoid burdening family members with requests for this type of help. The nurse at the CADC noted that attention to personal care – making sure participants are appropriately dressed, properly groomed and clean – is important to ensure an individual's dignity remains intact. She noted that compared to residential care facilities, there is a high staff to participant ratio for activity programs so that there is a program worker available for personal care.

5.4.2. Medical Services and Health Monitoring

The participants at both adult day care programs are cared for daily by a registered nurse who provides assistance with medication and health monitoring. Recent research on nurses in adult day centres describes how they positively affect the

health of older adult day care clients through the use of a number of assessment tools and effective care plans (Jennings-Sanders, 2004). Through the intake process, the nurses at both the JFADC and the CADC conduct comprehensive interviews with the prospective participant and the family caregiver. Information from the interviews forms the basis of an individual care plan for the participant. In addition to medical information, the interview provides an opportunity for the nurse to inquire about leisure time activities and other personal preferences. At the CADC, each participant is assigned to a specific program worker who is tasked with becoming intimately familiar with the care plan and with that individual's preferences for the purposes of providing personalized care and tailoring the activity program to suit all participants.

When it comes to medical attention, the nurses at both study sites regularly provide the following types of care: physical examinations for changes in weight, blood pressure and breathing; oversight and administering of medications; injections including flu shots; removal of sutures; wound and foot care (the nurse at the CADC is a certified foot care specialist), management of specialized diets; urostomy and colostomy care; ear cleaning; cognitive monitoring; and assessments for depression. The nurse at the CADC mentioned she regularly administers the Geriatric Depression Screen or the Mental Status Exam to participants that she suspects might be in cognitive decline or, who could be vulnerable to depression. Both study site nurses commented that medication management is a challenge for health practitioners working in the community and they work closely with other community nurses and pharmacists to monitor adult day program participants who are experiencing adverse reactions due to non-compliance. In addition, the nurses at both study sites conduct Mobility Assessments and Falls Risk Assessments on all the program participants upon admission, and afterwards, annually.

The physical environment at the CADC was designed with spaces for the provision of medical care. The CADC nurse noted that staff members try to respect participants' need for privacy for personal and medical care by providing assistance in one of the many private spaces in the facility. There are several spaces affording privacy: multiple private washrooms, spa room, salon, nursing station and quiet bedroom. The nursing station is also equipped with secure storage space for medical supplies and pharmaceuticals and, a designated fridge for medications requiring

refrigeration. In contrast, the nurse at the JFADC is still in the process of improving the recently 're-assigned' space (wound clinic that never materialized) to create a private examining room for various medical purposes including wound care.

Health promotion and disease prevention education programs are offered regularly. The nurse at the JFADC relies on help from one of the activity workers to translate important health information related to management of Type II diabetes, falls prevention, etc. Program staff at both sites are trained in CPR and first aid, and are also trained to provide assistance to participants who need help with toileting and other personal care needs. The nurses at both study sites also noted that all staff members are responsible for paying attention to how participants are feeling or behaving during the day. Since the program workers are very familiar with the members and know what is considered 'normal' for each individual, they often pick up on something that is out of the ordinary, which could signify a health problem (e.g. change in gait, eating habits, mood, continence or speech). The program workers report their observations to the nurses for further investigation.

5.4.3. Integrated Community Health Services

There has been a growing body of literature indicating that home care can be a cost-effective alternative to facility care and acute care within an integrated system of care (Chappell et al., 2004; Hollander and Chappell, 2007; MacAdam et al., 2009). Adult day programs provide an excellent opportunity for case management and coordination of community health services. The registered nurse at an adult day program has a direct path of communication to an individual's case manager, family physician, pharmacist, home support workers, and family caregivers. Through the intake process to the adult day program, the registered nurse develops benchmark health assessments of individual participants, and then the nurses and program workers at both study sites continually monitor the participants' physical, cognitive and mental health. If there are reports of changes to participants' health status, the nurse will determine an appropriate course of action. She may contact a family member to discuss her concerns, make a referral to community care or contact a family physician. For example, the nurses at both study sites have had past concerns about certain participants feeling depressed. If a

depression screen confirms their suspicions, they would forward a report with the results to a participants' doctor for a diagnosis.

Research has found that variability in policy approaches and a lack of coordination of services has resulted in a health care system that is not supportive of informal caregivers (Giosa, Stolee, Dupuis, Mock & Santi, 2014). The registered nurses at the CADC and the JFADC spoke about the crucial role that family caregivers play in maintaining at-risk older persons in the community, and viewed both the adult day program participant and their respective caregivers as clients. This perspective is consistent with the literature on caregiving and in particular, with findings of a recent research study emphasizing that in the context of in-home and community care settings, the older person and the informal caregiver constitute the 'unit of care' (Peckham, Williams & Neysmith; 2014). Aside from the obvious benefit provided by respite, the registered nurses at both study sites support caregivers through counseling, education (especially related to dementia), emotional support and encouragement. The nurse at the JFADC said:

"The family members need a lot of acknowledgement for the [caregiving burden] they have assumed. They need someone to reassure them that being a caregiver is very challenging for anyone. I try to normalize some of the feelings they are experiencing. It is an on-going thing...one day I had four people waiting in line to have a conversation with me! And my reassurances won't change their situation, or their day-to-day reality, but they say they don't feel so alone when they can talk about their challenges. I listen and tell them they are doing a wonderful job."

The nurse at the CADC had the following additional comments:

"Another important aspect of care that I provide is caregiver support and education. Sometimes this is a formal process of an annual evaluation that we perform on all the members which involves phoning the caregivers to see how the members are managing at home and sometimes this exchange happens more informally with a quick 'check-in' phone call where I'll say: 'Hi, how's it going at home?', 'How is so-and-so doing?' or, 'How are you doing?' I'll ask if there is anything I can help with and this provides an opportunity to dispense advise about medications or other care issues. Sometimes, the family members just show up here stressed or distressed. They know they are welcome anytime to come in to discuss their concerns."

Another key area identified by the nurses at both study sites that requires enhanced caregiver support is during 'care transitions'. Care transitions are often prompted by a change in functional or health status that requires a different level and/or intensity of care (Covinsky, Palmer & Fortinsky, 2003). This study demonstrates that integration of health care services between different settings is essential to the quality of transitional care and patient safety, and to caregiver support. The caregivers associated with both the CADC and the JFADC programs rely on the on-site nurses for practical and emotional support leading up to the during care transitions. An example of how the CADC nurse provides counselling and emotional support is found in this interview excerpt:

"Family caregivers often want to know when the 'right time' is for relocation to a long term care home. They are confused about all of the advice they receive from well-meaning family members and friends and they tell me they are feeling guilty about being unable to care for their loved one. Many say things like: "I promised him/her I would never put them in a home". It is my role to reassure them that everyone makes that promise...but they make the promise without really understanding the impact of neuro-cognitive disease...what it means in terms of that person's loss of personhood and functional ability and how this negatively affects a caregivers own health and well-being for the rest of their life."

The nurse at the JFADC emphasized how difficult the decision to relocate a family member can be and explained that although case managers are involved to some degree, she often has more contact with the families through the difficult process and was better able to provide emotional support and reassurance. She said:

"I tell them that we understand it is not how you would have wanted it, but that we agree the time has come for 'Edna/Bill' to be moved. I remind them they can still visit regularly but they won't be in that intensive caregiving role anymore which can often be a good thing for relationships. The visits will be different but probably more meaningful."

Assuming the adult day program setting continues to be supportive for an older, community-dwelling person with declining physical and cognitive abilities, it can be a safe and appropriate 'bridging' context for an older person who has been referred for placement in a long-term care facility. The nurse at the CADC provided several examples of how the setting supports a person with advanced dementia who also suffers from agnosia (loss of ability to recognize objects, persons, sounds, shapes or smells).

Environmental features such as the absence of mirrors in the bathroom, an open plan with generous sightlines and continuous walking path, way-finding cues, and dementia-trained, attentive staff were noted during the interview. Her comments regarding behaviours associated with agnosia:

“This environment supports this type of behaviour because a person can stay happily occupied and safe without disrupting the programs. We have kept many folks here who were in advanced stages of dementia – who were more appropriate for discharge – because I knew they were within weeks of being placed in care. We know the caregivers were at the end of their rope and extremely stressed so we kept those people longer to help provide support to the whole family through the transition to residential care”.

Although the staff members at the JFADC are also attentive and experienced with dementia, the physical environment was not specifically designed to support participants in advanced stages of dementia; and therefore, is not an appropriate context for a person who is needing an interim care arrangement while waiting for placement in residential care.

Finally, it is important to note the vital role that public transportation plays in the adult day program services. In the past, the JFADC staff were given the role of providing transportation to and from the centre using a designated bus; however, as numbers of daily participants increased, and clients’ needs changed (more clients with mobility issues that were needing assistance with transfers etc.), it was no longer feasible for staff to provide this service. Similar to the situation at the CADC, the JFADC program relies on family members and HandyDART to provide transportation for the adult day program participants. HandyDART is a door-to-door shared ride service for people with physical and cognitive disabilities who need assistance with public transit. The company uses specially equipped vehicles for wheelchairs, and the drivers are trained to assist passengers with mobility issues. The reliance on HandyDART for transportation has recently been problematic for families at both facilities. The nurse at the CADC has explained it in this way:

“Adult day programs have historically been considered a social service and therefore clients needing transportation to these service programs are given a lower priority than those clients needing transportation to medical services such as dialysis or doctors appointments. Eventually our participants get a spot, but it

can take some time to arrange for the regular, subscription service and then, depending on how far the client is coming from, and the current demand for the chronically under-funded services, we are at their mercy in terms of our program timing.”

There is ample evidence that adult day program services should be considered a therapeutic service, and HandyDART should give participants the same priority as others requiring the service for healthcare needs. Public transportation is an important and necessary link to accessing adult day program services.

5.5. Discussion and Implications

Societal aging along with older adults’ preference to age-in-place has created a reality where family members are increasingly caring for their older loved ones at home in the community. This has significant and long-term implications, such as negative economic and health consequences to family caregivers. Many caregivers are also older adults (some adult children 70+ years old) and have their own health issues. Although caregivers often express a desire to continue their caregiving role, many are experiencing role overload and caregiver burden (Colvez et al., 2002; Iecovich, 2008; Ostwald et al., 1999). Most people have an ideal vision of how they would like to live out their final years. For many, it is in the comfort of their own home surrounded by family, but very few contemplate how this might be altered should they or someone they care for, fall victim to a health crisis or be diagnosed with a degenerative cognitive disease such as Alzheimer’s Disease. A recent study of predictors of long term care placement from assisted living settings in Canada found significantly increased risk for placement for older people with cognitive and/or functional impairment, poor social relationships, little involvement in activities, health instability, falls and hospitalizations/emergency department visits, and severe bladder incontinence (Maxwell et al., 2013). These observed predictors represent priority areas for policy and practice interventions to promote aging-in-place whether at an assisted/supportive living housing or at private dwelling.

Adult day services are an important link in the continuum of community health care services. Older adults, caregivers and health practitioners agree that adult day

care services are essential to health and well-being of older adults and their caregivers. Results from a study conducted in 2003 by the National Council on Aging (Nadash, 2003) indicated a requirement for more adult day programs which target needs for social support, caregiving support, physical disability and chronic disease management for the aging population. The nurses at adult day programs also play an important role in helping families with decision-making beyond major care decisions such as the institutionalization of a relative. Since studies have revealed that persons with even moderate cognitive impairment are able to determine their preferences for daily care (Butcher et al., 2001; Menne et al., 2008), families require active support with the omnipresent, difficult everyday decisions or conflicts related to driving, personal care, and whether to purchase additional support services (i.e. in-home care services such as housekeeping, or attending adult day programs) (Feinberg & Whitlach, 2002). Although existing research, including this study, continues to show how participation in adult day programs may enhance well-being and quality of life for older adults and for family caregivers, there was a 'referral and wait list' approach at both study sites of the current study and there were areas of concern with the quality of services offered (e.g., quality of physical environment).

Until recently, our society has been heavily influenced economically and philosophically by the funding priority of hospitals and acute care treatments. Arguments have been established for government to shift their priorities to provide more funding for cost-effective community health care services including adult day care services. There is generalized agreement that a more balanced approach to financing health care costs, with more funding being diverted towards efforts such as adult day programs can optimize quality of life and promote community-based health care services and social engagement opportunities. Adult day centre programs can also fulfill important preventative health functions by insuring good nutrition and hygiene. Gaining momentum is the philosophy of 'restorative home care services'; designed to assist older people to maximize their functioning and assist them to be as independent as possible in looking after their day-to-day needs. Restorative home care services have also been shown to reduce mortality and the need for nursing home placement, improve self-rated health, confidence, and well-being more than usual home care (Lewin, 2011).

In the current study, the review of the literature pertaining to adult day services has provided insight of how adult day services might be more effective and meaningful. Social, physical, emotional, functional and environmental factors should be considered as part of an adult day program. Adult day programs will be especially effective if, in the design and programming process, the consumers and care providers are consulted about their needs. Flexibility and attention to setting, processes, and 'hidden program' within adult day services are needed to maximize meaning and well-being for older adults and their caregivers as they age in place. An adult day program operating according to a philosophical concept of 'personhood in dementia' and practicing person-centered care offers people who have dementia a 'chance at better days' (Moore et al., 2006). Quality of life and well-being, therefore, are key measures to inform policy and practice in care planning, program improvement and development of more adult day programs.

Community-based prevention-oriented services, including but not limited to adult day programs, are just as important as medical and residential care services. As our population ages and becomes increasingly frail, there is an urgent need to strengthen and expand the supports available to older people in their homes. Although findings in the literature are inconsistent and inconclusive about whether participation in adult day programs can delay institutionalization, the Registered Nurses at both sites in this study have provided strong evidence that this targeted intervention has delayed long term care admissions for their clients. Based on the philosophy of person-centered care, they have also presented a convincing argument that quality of life indicators may be a more important and relevant criteria when considering whether to fund such programs.

Taken together, the four interrelated themes identified in this study: Design Matters, Social Connectedness, Staying Active and Community-based Healthcare Services demonstrate how adult day programs play a distinctive role in supporting and promoting well-being in community-dwelling older people and their caregivers. Participation by older people in adult day centre programs such as those offered at the JFADC and CADC, which combine medical health services, a community bathing program (for CADC members) and therapeutic recreation programming provides them with a 'one stop shopping' experience. The staff at both adult day programs forms an

interdisciplinary team that is efficient and effective in providing high quality health care. The researcher observed that at both locations, the staff exhibited a shared interest in care for older adults, a willingness to collaborate within the team, and a respect for the unique and complimentary contributions that each discipline brings to the dementia care planning process. Clients and informal caregivers also benefit when there is greater continuity; that is, when the same person or team of people is providing care there are increased opportunities for positive, health-sustaining reciprocal relationships, and a built-in health monitoring function (Cohen et al., 2006). In this way, these facilities further promote the goal of providing an individualized, comprehensive continuum of care.

From the consumer's perspective, additional adult day programs would help meet the current demand for this service; and ultimately, the expansion of quality adult day program services in purpose-built facilities should form a part of an integrated, population-based solution to other long-term care and medical service needs. This study highlights how the physical environment of the purpose-built facility at CADC supports older adults with dementia in the planned activities, healthy behaviours and social interactions. On the other hand, the physical environment at the JFADC which was not a purpose-built design is not as supportive, and in fact, acts to constrain opportunities for the adult day program staff and participants. Although staff at the JFADC detailed many deficiencies with respect to the physical space that are elaborated on in the Findings Chapter of this paper, the most significant features affecting the program are: lack of a secure building and outdoor space; insufficient indoor space for the program and variety of spaces for different activities; lack of a wandering path; unused bathing room and lack appropriate space for personal grooming activities; and poorly designed washroom facilities; and, unwanted noise stimulation during formal program due to the lack of a sound-proof barrier.

Similarly, the findings related to social connectedness, staying active, and community-based health services have several implications for policy changes and practice implementation. The challenge for government is to develop and improve services for frail older people, by focusing on psycho-social needs as well as medical needs, and on earlier provision of support in the community. This research emphasizes

the need for delivery of appropriate care for those with dementia and other chronic conditions; that is, a need for a paradigm shift from episodic, short term interventions which characterize treatments for acute conditions, to long-term, comprehensive care for those with continuing care needs. This involves allocating resources to community-based services in the continuing care sector in order to increase availability and ensure quality support services. A re-structuring of funding and health care services to provide integrated, restorative community services such as adult day programs, which help promote social contact, independence and healthy living, should be a priority.

Currently, there is competition for public funding between parallel types of community care providers. Home support/home health delivery systems and organizations which developed in response to acute care needs, have been criticized for such issues as fragmentation, wasted resources and poor outcomes for those with chronic conditions (MacAdam, 2008). A more efficient funding structure could support a 'systemic community care package' that fosters collaboration among networked partners providing community care services. This research study demonstrates the important role of the registered nurse for providing medical care in this setting. The study also emphasizes that participants in adult day program settings have an opportunity to interact with other health care professionals trained in areas such as: advance care planning, family counseling, dementia care, recreational therapy, health education, nutrition, personal care, bathing, and music therapy. The programs are successful because they provide integrated care for older people using multi-disciplinary care/case management for those individuals at risk of poor outcomes and access to a range of health and social services. Research on integrated health and social care suggests, the programs could be made even stronger by including the active involvement of physicians (McAdam, 2008). In addition to employing a registered nurse, adult day programs should adhere to standardized best practices for administration, activity programming and clinical purposes. It is worth mentioning that another key partner in the provision of a successful adult day program is consistent, reliable transportation services. Recent funding cuts affecting Translink's Handydart services constrain opportunities for older people to participate in adult day programs in their communities.

The general difficulty accessing community-based health care services that older people living in community are currently experiencing also needs to be addressed. In particular, this study has exposed deficits in community infrastructure and the referral process that act to diminish an older person's ability to remain at home. The Registered Nurses at both of the study sites acknowledged case manager workload contributes to a delayed referral, and the Nurse Coordinator at the CADC mentioned participants may wait as long as 18 months for admittance to this adult day program. Both nurses also commented on the need for respite services during evening, weekend hours, and in some situations, overnight. If the health and well-being of older people and their family caregivers is truly a priority, additional education should aim to help health professionals, politicians and policy makers to understand how access to services is influenced by knowledge of available services, capacity of available services, geographic proximity and affordability. Strategic planning is required to address the unmet needs and the fragmented delivery of community-based health services. A starting point for local health authorities would be to ensure that community care services such as adult day programs are included under the umbrella of 'community, home support, or continuing care services' as opposed to 'residential care or acute care services'.

5.6. Study Limitations

A few limitations should be noted with respect to the findings of the present study. First, the cross-sectional study design limits the researcher's ability to draw valid conclusions as to the associations between the physical/social environments and specific health outcomes. Second, the small number of adult day programs sampled and their specific geographic location may have limited the breadth of the findings. The investigation involved two study sites and both sites are located within the boundaries of the Vancouver Health Authority. As such, the sample is not representative of adult day programs offering dementia care in other parts of the province of BC that fall under jurisdiction of other health authorities. Lastly, the participants at the two adult day program sites all live in urban centres; thus, results may only resonate with and be transferable to health care providers in other urban centres. It is entirely possible for

example that older people and community care providers in rural settings have different perspectives and priorities for care needs in community settings.

5.7. Conclusion

Despite the study limitations, this research has demonstrated that adult day programs in purpose-built facilities may be more effective at providing services that promote the health and well-being of older adults and their caregivers. So, this begs the question: “What needs to happen so that existing service networks are developed for improved access to this important, and successful community-based service?” There will no doubt be a continued focus on improving health care quality, access and efficiency -- because of the increasing numbers of older people with dementia (or one or more chronic conditions), and their disproportionately high use of health care services. The first order of priority should be a commitment by government to provide funding for a full range of community based health care services that support prevention and early intervention for frail, older people. Policy makers should also be tasked with organizing a system of continuing/community care within the framework/philosophy of ensuring person-centered care. Such a system should naturally support coordination of clinical activities, strengthen relationships between service providers, and use standardized tools, instruments or systems to support coordination of care.

Policy makers at the provincial and local government levels would benefit from more data-based research on adult day program utilization and older adults’ positive health-related outcomes. A specific area where further research is warranted is gauging the effectiveness of adult day programs (program activities) in providing opportunities to participants to have meaningful social engagement and participation. To ensure consistent quality in adult day programs across BC, health care providers should adopt best practice guidelines and standardized health care planning and activity programming. Specific research on the impact of adult day programs on caregiver burden and well-being would also serve to educate the policy makers on the critical importance of community-based services providing respite. Further, a quantitative cost/benefit analysis related to adult day program utilization and delay of institutional

placement would demonstrate the many advantages, including community health and long-term cost benefits, of adult day program services.

Finally, while this study demonstrates that appropriate design of the physical environment is a key component in community-based services such as adult day programs that serve older people with dementia, more empirical research is required to resolve situations in which conflicting design recommendations are offered. Research is also warranted when recommended design solutions are of unknown effectiveness or when design recommendations have major or controversial impacts for cost or quality of life. Next, assessments of the physical environments of existing adult day programs in BC are required to identify and address deficiencies with respect to supporting persons with dementia. Based on the environmental audits and research-driven design guidelines, policy makers and health authorities would be able identify priority areas/issues for environmental renovations of existing adult day facilities. In some cases, there could be a need for relocation to suitable infrastructures or replacement with new purpose-built facilities. Ultimately, research on the interrelationship between the elements: the programs (social and care), staffing models and physical setting, is needed to gain a clear understanding of how the physical environmental features can facilitate or hinder the care quality, social interaction and client experience.

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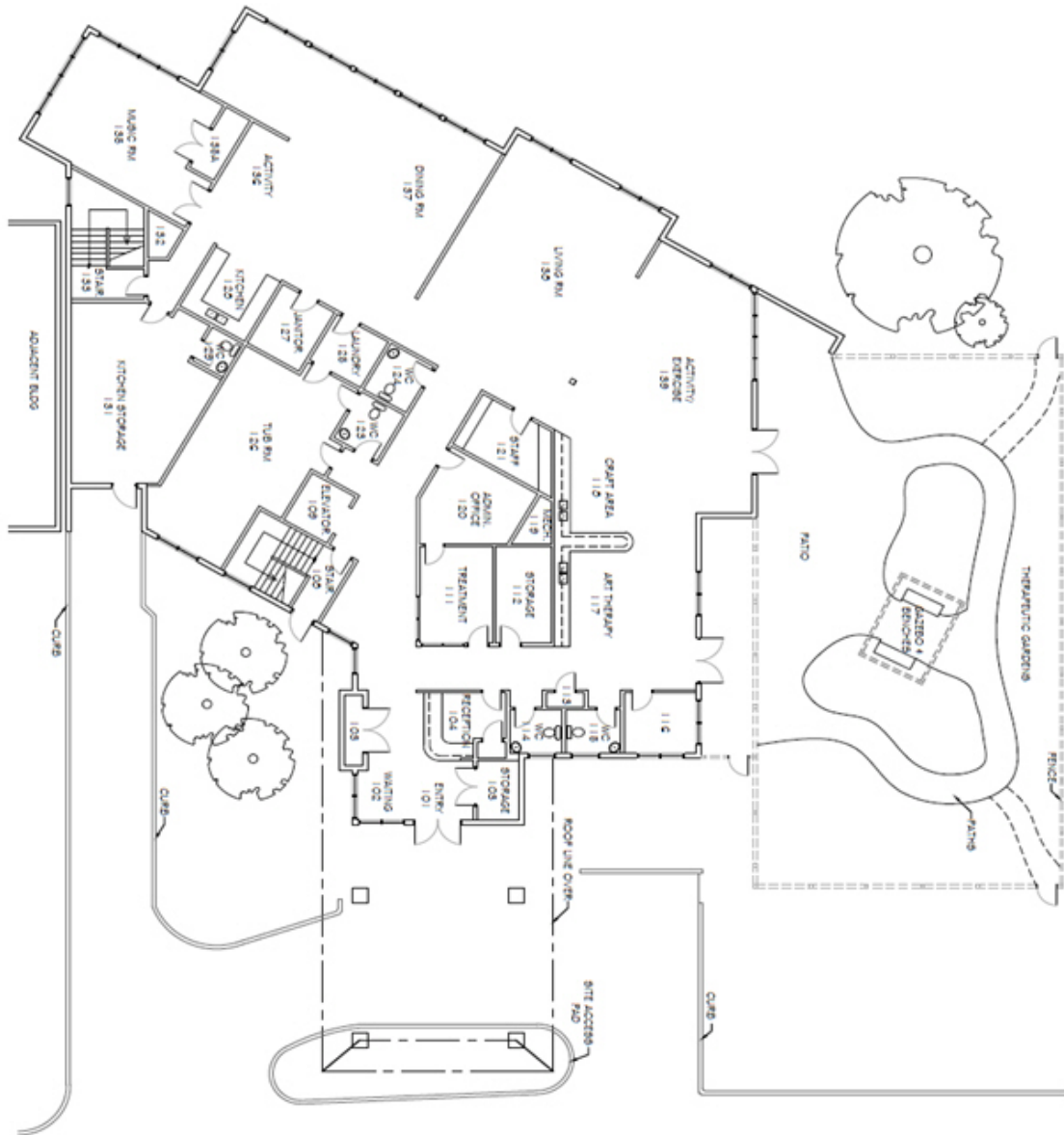
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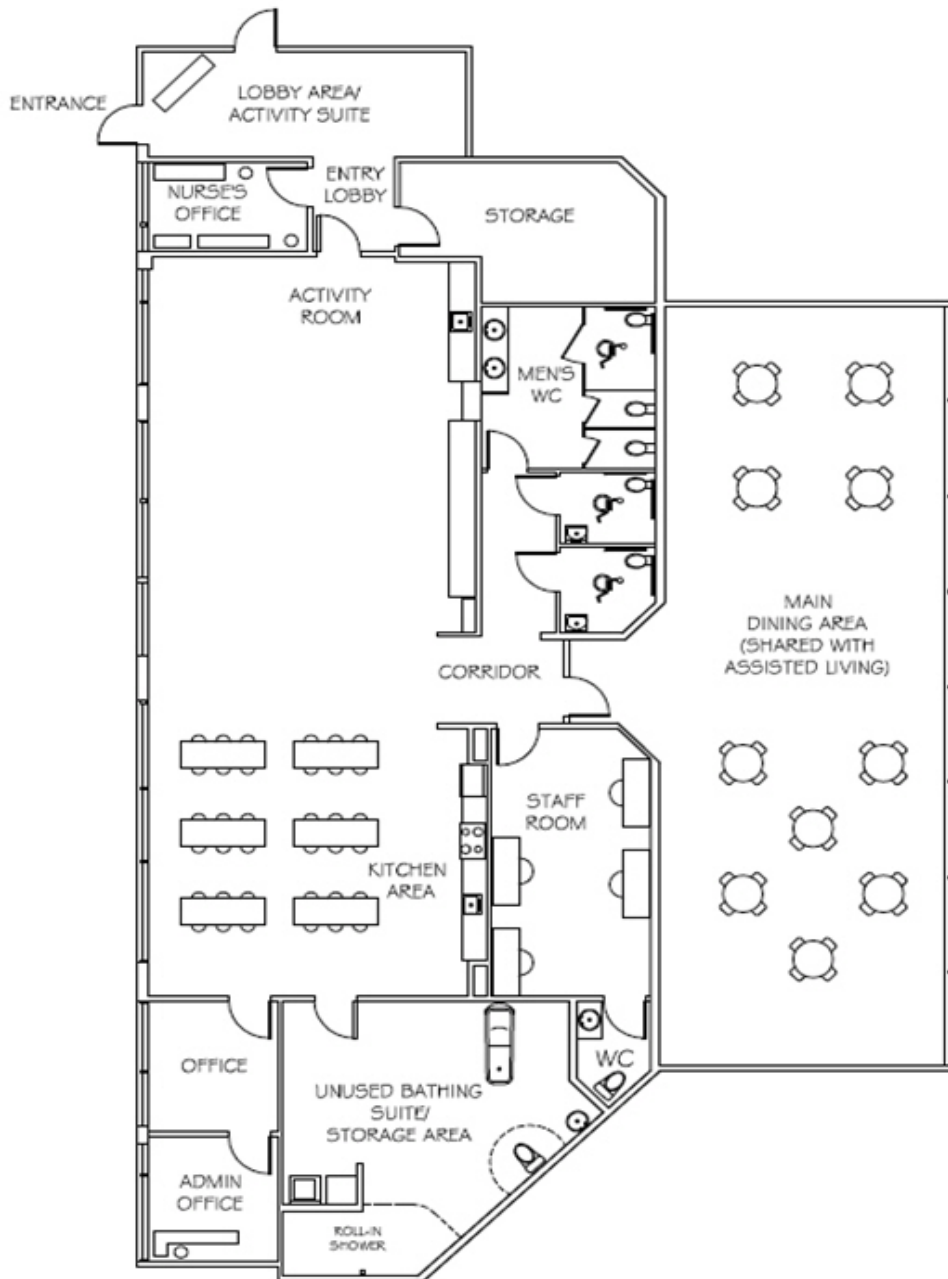
Appendix A.

Floorplan of Cedarcrest ADC



Appendix B.

Floorplan of Jean Falconer ADC



Appendix C.

ADPPEAT Environmental Assessment Tool

Date:

Name of Program:

Time:

Location (City and/or Town):

Details about the adult day program					
1.	How many participants attend the program per day (at its fullest)?	10 or less	11-16	17-29	30+
2.	What types of clientele participate in the program?	Dementia clients only	Mix between dementia and non-dementia clients	Mostly non-dementia clients	No dementia clients
3.	What type of building is the program held in?	Community Centre	Church	Long-term care facility (i.e., nursing home)/ Hospital	Private Residence
4.	How many days per week is the program open?	0-1	2-3	4-5	6+
5.	What are the hours of operation per day	0-2hrs	3-5hrs	6-8hrs	9+hrs
6.	How much does the program charge for a full day?	N/A	\$0-\$15	\$16-\$30	\$31 +
7.	How much does the program charge for a half-day?	N/A	\$0-\$15	\$16-\$30	\$31 +
8.	Is the program provided public funding from the District Health Authority or the Department of Health and Wellness?	NO		YES	

9.	Is the program a standalone program or a part of a larger support network (i.e. Nursing home, VON, HomeInstead)?	Stand alone	Part of a larger network
10.	How long has the program been open for?	0-2 years	3-4 years
11.	What is the size of the space that the program is in?	0-800 Square feet	801-1600 Square feet
12.	What types of services are offered in the program? (check all that apply)	Nursing/Medical Services (Medication delivery, baths)	Therapeutic Services (Occupational, Music)

Spaces that are safe and secure		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	Is the outdoor area secure? (i.e., are participants prevented from getting over/out/under the fence or gate without the assistance of a staff member)		0	1
2.	Is there program space dedicated solely to the adult day program? (i.e., the space is not shared with any other programs and is not used for purposes other than adult day services.)		0	1
3.	If the front door leads out of the facility is it secure? (i.e., monitored mechanically, electronically, or by staff surveillance)		0	1
4.	Are all side doors leading out of the facility secure?		0	1
5.	Are all exits visually discreet? (i.e., camouflaged, not easily seen)		0	1
6.	Are windows restricted so that participants cannot climb out?		0	1
7.	Is the outdoor area easily supervised from the point(s) where staff spends most of their time?		0	1
8.	Are all storage room doors lockable? (i.e., toxic substances locked away)		0	1
9.	If participants use the kitchen is there a lockable knife drawer in the kitchen?		0	1
10.	Are there smoke detection devices?		0	1
11.	If participants are involved in meal preparation are all the pots and pans small enough for them to lift easily?		0	1
12.	Are all floor areas safe from being slippery when wet (water)?		0	1
13.	All carpeting in areas is securely attached, and any exposed edges fastened to the floor?		0	1
14.	Is the common area easily supervised from the point(s) where staff spends most of their time?		0	1
15.	Are handrails accessible in all participant spaces?		0	1
16.	Are there call buttons in the bathrooms?		0	1

$$\frac{\text{Total score}}{16 \times 10} = \frac{\text{Score out of 10}}{10}$$

Spaces that have good 'visual access' and afford functional independence		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	Can the exit to the garden/outside area be seen from the area used as the lounge? If there is more than 1 lounge room answer with reference to the one most used by persons with dementia.		0	1
2.	Can the dining room be seen into from the area used as the lounge room? If there is more than 1 lounge room answer with reference to the one most used by persons with dementia.		0	1
3.	Can the kitchen be seen into from the area used as the lounge room? If there is more than 1 lounge room answer with reference to the one most used by persons with dementia.		0	1
4.	Can the kitchen be seen into from the dining room?		0	1
5.	Can a toilet be seen from the dining room?		0	1
6.	Can a toilet be seen from the area used as a lounge room? If there is more than 1 lounge room answer with reference to the one most used by persons with dementia.		0	1
7.	Are toilet room sizes large enough to allow staff to assist client and at least one can fit a wheelchair?		0	1
8.	Can the area(s) used as the lounge room be seen into from the point(s) where staff spends most of their time? If there is more than 1 lounge room answer with reference to the one most used by persons with dementia.		0	1
9.	Are there landmarks (i.e, a distinctive plant or piece of wall art) located at junctures to facilitate way-finding?		0	1

$\frac{\text{Total score}}{9 \times 10} = \frac{\text{Score out of 10}}$

Spaces that reduce unwanted stimulation		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	Noises from outside the program space are noticeable?		1	0
2.	Is the noise from the kitchen distracting for the participants? (i.e., are staff contributing to the noise level by yelling at each other)		1	0
3.	Are deliveries (food, supplies) received in the areas where participants are? (i.e., common area, dining room)		1	0
4.	Is there a staff paging, or calling system in use that involves the use of loud speakers, flashing lights or bells etc?		1	0
5.	Do blinds or drapes on the windows remain completely shut during the day?		1	0
6.	Do tables, artwork, flooring, or surfaces give off a glare?		1	0
7.	Are there strong colour contrasts in the flooring? (i.e., checkmarks, swirls, patterns)		1	0
8.	Are hallways and entryways dark and poorly lit?		1	0
9.	Is more than one activity occurring in the same room at the same time (i.e., no dividers between activities)?		1	0
10.	Is the front entry easily visible to the participants?		1	0
11.	Is the service entry (where food is delivered) easily visible to participants?		1	0

$$\frac{\text{(Total score)}}{11 \times 10} = \frac{\text{(Score out of 10)}}{10}$$

SS

Spaces that highlight important stimuli		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	Is the dining room clearly marked with a sign or symbol (i.e. picture of knife and fork)?		0	1
2.	Is the area used for the lounge room clearly marked with a sign or symbol?		0	1
3.	Is the kitchen clearly marked with a sign or symbol?		0	1
4.	Are toilets clearly marked with a sign or symbol?		0	1
5.	Do the colour of the toilet and the sink contrast with the colour of the walls and floors?		0	1
6.	Is there a lot of natural lighting in the lounge room? (Windows)		0	1
7.	Is the lighting in each area suitable for the activity taking place (brighter in the craft area than a conversational nook)?		0	1
8.	Is the lighting in the program space adjusted during the day?		0	1

_____ ÷ 8 x 10 = _____
 (Total score) (Score out of 10)

Spaces that reduce agitation and provide for planned wandering		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	Is there a clearly defined and easily accessible path that guides the participant back to their starting point outside?		0	1
2.	Is there a clearly defined path that takes the participant around furniture and back to their starting point inside?		0	1
3.	Do the path(s) allow the participant to see into areas that might invite participation in an appropriate activity other than wandering?		0	1
4.	Are the path(s) within a secure perimeter?		0	1
5.	Can staff easily and discreetly survey the path(s)?		0	1
6.	Are there chairs or benches along the path(s) where people can sit?		0	1
7.	Is there signage for toilets provided along the path(s)?		0	1

_____ ÷ 7 x 10 = _____
 (Total score) (Score out of 10)

Spaces that are familiar		Many	A few	None
1.	Are there any decorations that would not have been familiar to the majority of the participants when they were 30 years old? (i.e., very modern art)	0	0	1
2.	Are there any taps, light switches, door knobs, that are used by participants that are of a design that would not have been familiar to the majority of participants when they were 30 years old? (i.e., very modern)	0	0	1
3.	Are there any pieces of furniture in the common area or the dining room that are of a design that would not have been familiar to the majority of participants when they were 30 years old (i.e., chairs, sofas, lamps)?	0	0	1
4.	There is institutional equipment visible in the program space (i.e., nursing station)?	0	0	1

$$\frac{\text{(Total score)}}{4 \times 10} = \frac{\text{(Score out of 10)}}{10}$$

Spaces that afford autonomy, independence and control				
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	How many small/areas or rooms provide opportunities for conversational interaction or one-on-one activities?	None 0	1 0	2 or more 1
2.	How many rooms or areas are there to accommodate activities so that different activities may be chosen?	None 0	1 0	2 or more 1
3.	Are the spaces arranged in a “flexible manner” so that small group activities can be supported depending on the current needs?(i.e. quiet time room can change into a social time room)	N/A	NO 0	YES 1
4.	Does the dining area provide opportunities for participants to eat in small groups (2-4)?	N/A	NO 0	YES 1
5.	Are all dining room tables designed to seat less than six people in the dining area?	N/A	NO 0	YES 1
6.	Does the dining area provide opportunities for people to eat alone?	N/A	NO 0	YES 1
7.	Is there an area or room somewhat removed from the main dining room where families/caregivers can share meals with the participant?	N/A	NO 0	YES 1

$\frac{\text{Total score}}{7} \times 10 = \text{Score out of 10}$

Spaces that afford meaningful activities		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Applicable.				
1.	The environment provides props that invite use (kitchen utensils, gardening tools, brooms, writing desks) that are associated with familiar, everyday activities?		0	1
2.	The props that are in the program reflect the preferences of the current participants?		0	1
3.	There are multiple activities among which participants may freely choose to participate?		0	1
4.	Furniture arrangements throughout the program are oriented to encourage conversation between two to three people?		0	1
5.	The furniture is usually never arranged in a large activity circle or in theater-style rows (unless for special occasions)?		0	1

_____ ÷ 5 x 10 = _____
 (Total score) (Score out of 10)

Spaces that meet the needs of staff		N/A	NO	YES
If the program does not have the item, space or room asked about, check off the box N/A for Not Available.				
1.	Is there a room available just for staff?		0	1
2.	Is there a toilet area just for staff?		0	1
3.	Do the staff have their own lockers or change rooms?		0	1
4.	Can the outdoor area also be enjoyed by the staff		0	1
5.	Is there a room that can be used as a staff quiet room/-counselling room?		0	1

_____ ÷ 5 x 10 = _____
 (Total score) (Score out of 10)

Appendix D.

Behavioural Mapping Tool

Social Interaction Checklist																			
Date: _____ # Clients in ADP: _____			Location: _____ Map #: _____						Start Time: _____ End Time: _____										
Level of Social Engagement	Activity	Client #															Other		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	S	V	C
Participant Positioning	Sitting																		
	Standing																		
	Walking																		
	Eating																		
	Drinking beverage																		
	Other:																		
	Opportunity for Contact																		
No Social Interaction	No Social behavior																		
	Sleeping																		
	Self-Engaged																		
	Staring/Observing																		
	Reading																		
	Watching TV																		
	Gardening																		
	Exercising																		
	Withdrawn																		
Low-Level Interaction	Acknowledging																		
	Passive Participation in activity																		
	Shift body posture to engage																		
	Facial Expression-Positive																		
	Facial Expression-Negative																		
	Use of gestures																		
	Listening																		
		Nodding																	
High-Level Interactions	Active Conversation																		
	Brief Verbal Communication																		
	Physical Engagement-Both																		
	Physical Engagement-Initiator																		
	Physical Engagement-Recipient																		
	Active Participation in activity																		
Other	Unresponsive to Communication Attempt																		
	Attempting to Communicate Without Receiving Response																		
	Engagement with Object																		
	Length of Engagement																		
	Negative Social Interaction																		

Appendix E.

Interview Guide – Staff Member

I) Job description/responsibilities

- A) Staff title and role?
- B) Background and employment history in current position?
- C) How is care orchestrated?
 - Degree of medical supervision/monitoring?
 - Whom do you work with?
 - Supervisor or whom do you supervise?
 - How many staff? What are their qualifications?

II) Daily schedules

- A) Describe a typical day?
- B) What role does staff play?
- C) What are the different activities offered?
- D) Where do the activities occur and when?
 - Examples of inside and outside activities?
 - Examples of activities taking place outside the formal program?
 - Which spaces can accommodate which activities?

III) Who participates in the activities?

- A) How do clients actively (or even passively) participate?
- B) Do residents choose what to participate in?
- C) How do different clients respond to various activities/settings/people?
- D) If someone chooses not to participate in an activity, how are his or her preferences accommodated?
- E) Have clients formed smaller friendship circles?

IV) How is the program decided?

- A) Who is involved in the decision-making
 - Do clients have a say?
 - Are family members involved?
 - How is the staff schedule/assignments decided?

V) In what ways does the physical environment constrain or support your efforts?

- A) What are the challenges for staff in providing meaningful activities?
- B) What about the program itself? Could it be better? What would you do if you could?
- C) Any ideas regarding the organizational culture? Is it supportive? Are you encouraged to try new things?

VI) What is the perceived therapeutic intent of the program or the facility?

VII) Discussion

VIII) Thank you

Appendix F.

Participant Notification

To: Participants and Family Members of The Jean Falconer Adult Day Centre
Re: Study for “Exploring the Role of Physical Environments of Adult Day Programs on Well Being of Older Adults With Dementia”

Hello, my name is Joanne Franko and I am a Graduate student in the Department of Gerontology at Simon Fraser University. I am undertaking a research study that will explore the role of the physical environments of adult day centres on well being of older adults with dementia. Identifying the various physical environmental features that contribute to a positive experience for adult day service clients will help in planning and design of responsive adult day centres.

This research study will use several methods for gathering data. First, an environmental assessment will be conducted of the physical features of the facility. This assessment will be conducted outside of program hours with the help of a staff member. Second, observations will be conducted over several days and at different times of the day to determine how participants use the spaces in the day centre setting. Finally, interviews will be conducted with staff members to validate and expand findings from the observations. All data collection should be completed by the end of February, 2014.

As a researcher, I will be making unobtrusive observations of the activities and social interactions in the centre. There will not be any formal contact with the participants. The primary objective of the observations is to identify the effect of physical environmental features on the activities and behaviours in the care setting. If you are a participant and do not wish to be included in the observations, please let us know by responding to this notice. If you are a family member and do not want your loved one to be included in the observations, please let us know by responding to this notice.

All information collected will be kept strictly confidential and pseudo names for the facility, staff and participants will be used on all documents to ensure participants' privacy. This research has been reviewed and approved by the Simon Fraser University

Ethics Review Board. In addition, the Vancouver Coastal Health has reviewed my personal disclosure and consent form, and provided the necessary approvals allowing me access to the research site(s).

Of course, participation in this study is completely voluntary and I encourage you to ask questions at any time about this study. You can contact me at xxx. Concerns or complaints with respect to your participation in this study can be directed to the Office of Research Ethics.

Appendix G.

Informed Consent Form

Study Title: **“Exploring the Role of Physical Environments of Adult Day Programs on Well Being of Older Adults With Dementia”**

Hello, my name is Joanne Franko and I am a graduate student in the Master of Arts Gerontology Department at Simon Fraser University. As part of my M.A. degree requirements, I am conducting a research project. This project includes gathering information about the physical environments at two adult day program sites within the Vancouver Coastal Health (VCH) jurisdiction. This research has been reviewed and approved by the Simon Fraser University Research Ethics Board, the VCH Authority, and the administration at the two Adult Day Centres.

The study’s purpose is to explore the role of physical environments of adult day programs on well being of older adults with dementia. Interviews with staff members and observations of the adult day centre clients participating in the program activities will be conducted to gain a better understanding of the social interactions in the adult day care setting.

You have been selected as a possible participant in this study because of your experience working in the adult day care setting. **You are being asked to participate in an interview that will be audio-recorded and will take approximately one hour to complete. Questions asked during the interviews will focus on various aspects of the daily program including: nature of various activities, physical environmental features; and, role of staff members.** I am interested to know about your perceptions, opinions and evaluations about the role of the physical environment in supporting or hindering the activities and programs offered in the ADC.

You will also be included during the researchers’ observations of the activities at the adult day centre. Since it is critical to observe the range of activities offered in the program, the study will take place over a 3-month period, and I will be present at various times during operating days, and for different days of the week.

There are no known risks of participation in this research study. There are no costs to you for participating in the study. Although the data collected may not benefit you directly, the information learned in this study should provide general benefits. Findings will help us better understand the effect of physical environmental qualities and features in the experiences of adult day centre clients.

Participation in this study is completely voluntary and you do not have to answer any questions you do not wish to. You are free to withdraw from the study at any time with no negative repercussions. To be clear, your refusal to participate, or withdrawal after agreeing to participate will have no adverse effects on your employment or evaluation.

All information collected during this research process will be kept confidential and pseudo names will be used on all documents to ensure your privacy. The raw data collected by the researcher will be stored in a secure location for a period of one year following completion of the study. The audio-recordings are for transcription purposes only and will be destroyed with the other data.

I encourage you to ask questions at any time regarding the nature of this study. You can contact me at xxx. If you are interested to obtain research results, you can contact me as well. Concerns or complaints with respect to your participation in this study can be directed to the Office of Research Ethics.

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I have read this consent form and understand my rights and agree to the terms of the study:

Participant's Name (Print) _____
Participant's Signature _____
Date (dd/mm/yyyy) _____