Evaluating occupational performance in cognitively impaired older adults: Understanding occupational therapy practice patterns and knowledge needs

by

Patricia Semeniuk
260596180
School of Physical and Occupational Therapy

McGill University, Montréal

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Rehabilitation Science

Montréal Quebec, Canada
April 15th, 2021

Table of Contents

Abbreviation list

ADL - Activities of Daily Living
AMPS - The Assessment of Motor and Process Skills
APA – American Psychiatric Association
BIT- Behavioral Inattention Test
CASE - The Cognitive Assessment Scale for the Elderly
CFE- Cognitive Functional Evaluation
CIUSSS de CSMTL - *Centre intégré universitaire de santé et de services sociaux du Centre-Sud-de-l'Île-de-Montréal* [Integrated University Center for Health and Social Services of the Central Island of Montréal]
CLSC - *Centres locaux de services communautaires* [Local Community Service Centres]
CHSLD - *Centres d'hébergement de soins de longue durée* [Residential and Long-Term Care Centres]
COPM - Canadian Occupational Performance Measure
CPT- Cognitive Performance Test
CPPF – Canadian Practice Process Framework
EMAF - *Échelle de Montréal pour l'évaluation des activités financières* [Montréal scale for the evaluation of financial activities]
FG - Focus group
HEAP- Home Environmental Assessment Protocol
IADL - Instrumental Activities of Daily Living
IUGM - *Institute universitaire de gériatrie de Montréal* [Montréal University Institute for Geriatrics]
KTA - Kitchen Task Assessment
LACLS-5 – Large Allen Cognitive Levels Screen
MET - Multiple Errands Test
MMSE - Mini Mental Status Exam
MOCA - Montréal Cognitive Assessment
MVPT- Motor Free Test of Visual Perception
OEQ - *Ordre des ergothérapeutes du Québec* [Québec order of occupational therapists]
OT - Occupational therapist
PASS- Performance Assessment of Self-care Skills
PECPA-2r - *Protocole d'Examen Cognitif de la Personne Agée 2- revised* [Cognitive Assessment Scale for the Elderly- Revised]
PRPP - Perceive Recall, Plan, Perform
RBMT- Rivermead Behavioral Memory Test
SADI -Self Awareness Deficit Interview
TEA - Test of Everyday Attention
WHO- World Health Organization

Abstract

Evaluating Occupational Performance in Cognitively Impaired Older Adults: Understanding Occupational Therapy Practice Patterns and Knowledge Needs.

Introduction:

Occupational therapists frequently evaluate occupational performance by older adults with cognitive impairments in order to provide interventions that address autonomy and safety. Previous studies of the methods used by occupational therapists to evaluate this population suggest there is a lack of understanding of clinical practice in this domain, as well as a lack of tools supporting the evaluation of occupational performance. Given the importance of occupational therapy interventions in supporting the well-being of these individuals, we aimed to understand the process that occupational therapists use for evaluating older adults with cognitive impairments, identify the knowledge and tools occupational therapists need to support them in their evaluations, and identify their preferred strategies to acquire new knowledge.

Objectives:

This study had three objectives : 1. To understand how occupational therapists evaluate cognitively impaired older adults and the reason behind their clinical choices ; 2. To understand the knowledge and tools needs of occupational therapists in this area of practice ; and 3. To take preliminary steps to identify knowledge transfer strategies that will increase uptake of research evidence into practice.

Methods:

A descriptive qualitative study with a deductive-inductive approach was used. Focus groups were conducted with occupational therapists who had at least one-year experience working with older adults with cognitive impairments. The recruitment of participants would be discontinued when no new content emerged from the focus groups. Key interview questions were constructed

to probe for information that responded to the objectives of our study. The thematic content of the interviews was analyzed using the Miles et al. (2014) approach for qualitative data analysis. A deductive approach was used for first cycle coding, which allowed us to sort data into main content areas directly related to our research objectives. An inductive approach was used to probe each main content area, which allowed us to further refine our analysis and create of sub-themes. Sub-themes were combined into overarching themes in second-cycle coding. The analysed data was presented in network and matrix displays to show the relationship between themes for content area related to our objectives.

Results:

Data saturation was reached upon interviewing sixteen occupational therapists (n = 4 focus groups) working with cognitively impaired older adults in a variety of care settings. They participated in two focus group meetings each in which they described their evaluation process, their knowledge and tools needs to support them in these evaluations, and their preferred strategies to acquire new knowledge. Three themes emerged in response to the first objective of our study, describing a three-step evaluation process used by the participants. Their first step is to 1) gather information from the individual and others involved to plan the evaluation. Their second step is to 2) gather information from non-standardized observation and standardized testing to evaluate occupational performance and safety, and their final step is to 3) apply a clinical reasoning process to predict occupational capacity. The participants reported having difficulty capturing the impact of cognitive function on occupational performance using this process. Three themes responded to the second objective of our study, which described the knowledge and tools occupational therapists need to support them in their evaluation process. The therapists identified a need to have more knowledge related to 1) cognition and occupational

performance and 2) legal capacity and protection regimes. They also indicated a need for 3) tools to support evaluating the impact of cognitive function on occupational performance, and more specifically, standardized performance-based tests, conceptual frameworks and facilitative assessment environments. Two themes emerged for the third objective of our study, which described the preferred ways for therapists to acquire new knowledge. They prefer to acquire new knowledge through a combination of 1) formal interactions with experts and 2) informal interactions with students, peers and other professionals.

Conclusion:

Our findings indicate that there is a need for improvement within the evaluation process in order for occupational therapists to optimize their capacity to understand the impacts of cognitive impairments on occupational performance with more confidence and rigor. Clinicians have an important need for additional knowledge and tools to support them in these evaluations. The continued development of psychometric properties for existing tools measuring the impact of cognitive impairments on occupational performance in older adults is needed as well as the collaboration between clinicians, management and research experts to employ strategies that will move existing tools and knowledge into practice. Future research should explore the needs of occupational therapists other than those related to knowledge and tools and include the exploration of related barriers and facilitators to practice improvement

Resumé

Évaluation de la fonction quotidienne chez les personnes âgées présentant des déficiences cognitives: comprendre la pratique l'ergothérapie et les besoins en connaissances.

Introduction:

Les ergothérapeutes évaluent le rendement occupationnel des personnes âgées présentant des troubles cognitifs afin de proposer des interventions qui abordent l'autonomie et la sécurité. Des études antérieures sur les méthodes utilisées par les ergothérapeutes pour évaluer cette population suggèrent qu'il y a un manque de compréhension de la pratique clinique dans ce domaine, ainsi qu'un manque d'outils soutenant l'évaluation du rendement occupationnel. Étant donné l'importance des interventions d'ergothérapie pour soutenir le bien-être de ces personnes, nous visions avec ce projet à comprendre le processus que les ergothérapeutes utilisent pour évaluer les personnes présentant des troubles cognitifs, à identifier les connaissances et les outils dont les ergothérapeutes ont besoin pour les soutenir dans leurs évaluations, et à identifier leurs stratégies privilégiées pour acquérir et mettre en pratique de nouvelles connaissances.

Objectifs :

L'étude avait trois objectifs : 1. Comprendre comment les ergothérapeutes évaluent les personnes âgées présentant de troubles cognitifs et la raison de leurs choix cliniques ; 2. Comprendre les besoins en connaissances et outils des ergothérapeutes dans ce domaine de pratique ; et 3. Identifier les stratégies de transfert des connaissances à privilégier pour faciliter la mise en pratique des données probantes dans le domaine.

Méthodes:

Une étude qualitative descriptive avec une approche déductive-inductive a été utilisée. Des groupes de discussion ont été organisés avec des ergothérapeutes qui avaient au moins un an d'expérience de travail avec des personnes âgées présentant des troubles cognitifs. Le

recrutement des participants a été arrêté lorsqu'aucun nouveau contenu n'est apparu dans les groupes de discussion. Les questions posées lors des entrevues ont été construites de manière à aller rechercher les informations répondant aux objectifs de notre étude. Le contenu thématique des entrevues a été analysé à l'aide de l'approche de Miles, Huberman et Saldaña (2014), pour l'analyse des données qualitatives. Une approche déductive a été utilisée pour le premier cycle de codage, ce qui nous a permis d'organiser les données en fonction des principaux concepts directement liés à nos objectifs de recherche. Une approche inductive a été utilisée pour une exploration plus approfondie de chaque concept principaux, ce qui nous a permis de raffiner davantage notre analyse et de créer des sous-thèmes. Les sous-thèmes ont été combinés en thèmes lors de ce deuxième cycle de codage. Les données analysées ont été présentées à l'aide de réseaux de concepts et de matrices, afin de présenter les relations entre les thèmes liées à nos objectifs.

Résultats:

La saturation des données a été atteinte en interrogeant seize ergothérapeutes (n = 4 groupes de discussion) travaillant avec des personnes âgées présentant des troubles cognitifs dans divers milieux de soins. Les ergothérapeutes ont participé à deux groupes de discussion au cours desquelles ils ont décrit leur processus d'évaluation de ces personnes, les connaissances et outils nécessaires pour les soutenir dans ces évaluations et leurs stratégies privilégiées pour acquérir des nouvelles connaissances. Trois thèmes ont émergé en réponse au premier objectif de notre étude. Ces thèmes décrivaient un processus d'évaluation en trois étapes utilisées par les participants. La première étape est de 1) recueillir des informations auprès de l'individu et des autres personnes impliquées pour planifier l'évaluation. La deuxième étape est de 2) recueillir des informations à partir d'observations non standardisées et de tests standardisés pour évaluer le

rendement occupationnel et la sécurité, et la dernière étape consiste à 3) appliquer un processus de raisonnement clinique pour prédire le rendement occupationnel. Les participants ont mentionné avoir de la difficulté à identifier l'impact des fonctions cognitives sur le rendement occupationnel en utilisant ce processus. Trois thèmes ont émergés en réponse au deuxième objectif de notre étude, qui décrivait les connaissances et les outils dont les ergothérapeutes ont besoin pour les soutenir dans leur processus d'évaluation. Les thérapeutes ont identifié le besoin d'avoir plus de connaissances liées à 1) la cognition et au rendement occupationnel et 2) la capacité juridique et aux régimes de protection. Ils ont également indiqué le besoin d'avoir 3) des outils pour soutenir l'évaluation de l'impact des fonctions cognitives sur le rendement occupationnel et, plus précisément, des tests standardisés basés sur le rendement occupationnel, des cadres conceptuels et des environnements d'évaluation optimaux. Deux thèmes ont émergé pour le troisième objectif de notre étude, qui décrivait les moyens préférés par les thérapeutes d'acquérir de nouvelles connaissances. Ils ont indiqué qu'ils préféraient acquérir de nouvelles connaissances en combinant 1) des interactions avec des experts et 2) des interactions avec des étudiants, des pairs et d'autres professionnels.

Conclusion:

Nos résultats indiquent qu'il y a un besoin d'une amélioration des processus d'évaluation afin que les ergothérapeutes optimisent leur capacité à comprendre les impacts des troubles cognitifs sur le rendement occupationnel avec plus de confiance et de rigueur. Les cliniciens ont des besoins importants de connaissances et d'outils supplémentaires pour les soutenir dans ces évaluations. Le développement continu des propriétés psychométriques des outils existants est nécessaire. Une collaboration étroite entre les cliniciens, les gestionnaires et les chercheurs pour mettre en place des stratégies de mise en pratique des outils et des connaissances existantes est également

soulevée. Des recherches futures devraient explorer les besoins des ergothérapeutes pour améliorer leur pratique dans le domaine, en plus de celles liées aux connaissances et aux outils, et explorer davantage les obstacles et facilitateurs à l'amélioration de leur pratique.

Acknowledgements

I would like to express sincere gratitude to my thesis committee, Patricia, Nathalie, and Mélanie, for your patience, encouragement and availability.

Thank you to my dear friends; Rhonda and Howie for being my Montréal family. And thank you to my friend and informal mentor Naomi, for running forward with me.

To my kids for growing up so beautifully during this process of writing a thesis. I love you both so much.

For my mom.

And finally, to my dear Trent, for always believing in me.

Funding acknowledgement

I would like to acknowledge the Program d'appui à des projets des recherches stragégiques et structurants, Institute universitaire de gériatrie de Montréal (IUGM), for funding the completion of this project.

Preface

This thesis was written to fulfill the graduation requirements of a Master's in Rehabilitation Science at McGill University. It was written in accordance with the guidelines of the Faculty of Graduate and Postdoctoral Studies at McGill University.

Chapter I Presents a review of the literature

Chapter II Presents the rationale and objectives for the research project

Chapter III Presents the methods used to meet the objectives of the research project

Chapter IV Presents the main findings of the study

Chapter V Presents a discussion of the findings and implications for practice

Chapter VI Presents concluding remarks and a summary of the main finding of the study, strengths and limitations of the study, and directions for future work

Contribution of authors

The research project was done under the supervision of Dr. Patricia Belchior and co-supervisor Dr. Nathalie Bier in collaboration with Dr. Mélanie Couture. It was completed at the Centre de Recherche de l'Institut Universitaire de Gériatrie de Montréal (CRIUGM)

This project was designed by the research team composed of Dr. Patricia Belchior, Dr. Nathalie Bier and Dr. Mélanie Couture. My involvement in the project consisted of co-designing the project, writing the research protocol, obtaining ethics approval, creating questionnaires and question guides for data collection, recruiting participants, participating as a co-moderator in data collection via focus groups, completing the data analysis. Dr. Mélanie Couture led the data collection as moderator and assisted in the analysis and interpretation of results.

CHAPTER I: INTRODUCTION

1.1 Ageing and Cognitive Function

Over the next thirty years, older individuals will compose an increasingly larger proportion of the world's population. It is estimated that in continents such as Europe and North America, the proportion of the population that is age 60 years and older will exceed 30% by the year 2050 (World Health Organiation [WHO], 2015). This global shift in population demographics has profound implications for health care professionals working within health care systems, long-term care systems and other organizations dedicated to the well-being of older individuals. As individuals move though their lifespan, they accumulate cellular and molecular damage over time, resulting in changes to their body structures and their function (Kirkwood, 2005, p. 91). The extent to which this occurs varies greatly among older individuals, however, all will experience some change in bodily functions such as moving, hearing, seeing, and responding to infection as they age (Sehl & Yates, 2001). In addition to these changes, older individuals are more at risk to develop multiple chronic health conditions (Marengoni et al., 2011). These potential developments, in addition to factors such as socioeconomic status, living environment and ethnicity will play a role on how older adults will experience health and well-being (Michel & Sadana, 2017). The central challenge to health care systems and the professionals who work with older adults is to find the best ways to support the diverse physical and mental capacities of aging individuals when needed to enable them to function in key areas of life that are important to them, such as meeting their basic needs, moving around, engaging in relationships, and contributing to society (WHO, 2015).

Cognitive function is not exempt from changing with age. Changes in both basic and higher order cognitive functions occur with ageing, with older individuals showing more

difficulty in some areas (Goh et al., 2012; Spaniol et al., 2006; Tombaugh, 2004) while performing better than their younger counterparts in others (Verhaeghen et al., 2003). As for all changes in body structures and function, age-related cognitive change does not occur uniformly in all individuals. Hedden and Gabrieli (2004) propose that differences in cognitive function within normal ageing are likely due to variability in the integrity of the pre-frontal cortex, which undergoes structural changes in old age. In addition to biological influences such as this, psychological ageing is shaped by an individual's lifelong experiences within they society and culture to which they belong (Baltes & Singer, 2001). This combination of influences produces great variation in psychological ageing, including cognitive function. Older individuals also vary in how they use strategies to adapt to loss of cognitive function. Individualized strategies are used to adapt to these losses, which might include unconsciously optimizing the use of remaining cognitive resources or consciously compensating for loss by using external aides (Freund & Baltes, 2002) . While the losses associated with cognitive ageing are not uniform in older adults, the use of such strategies to adapt to losses in function while continuing to pursue personal goals is considered to be a sign of healthy ageing and is associated with subjective increases in everyday competency, positive emotions, personal growth and meaning in life in adults across the lifespan (Freund & Baltes, 2002; Riediger et al., 2005).

1.2 Neurocognitive Disorders

As part of a trajectory of healthy ageing, an individual may adapt to cognitive changes experienced as they age by employing strategies to ensure they can continue to function in key areas that are important to them as described above. However, some individuals may experience pathological changes in brain structure and function in old age, resulting a more significant loss

of cognitive function and a loss of capacity to perform daily activities that were once regularly performed over the course of their lifetime (Hedden & Gabrieli, 2004; Gill et al., 2013). Neurocognitive disorders, including major neurocognitive disorder and mild neurocognitive disorder are a group of health conditions in aging, characterized by declining cognitive function which interferes with an individual's ability to perform activities of daily living (ADL) (American Psychiatric Association, 2013, p. 608). The decline in cognitive function may be reversible or irreversible, depending on the condition and its underlying cause.

One of the most important causes of cognitive decline in ageing is major neurocognitive disorder, which was previously termed dementia in the DSM-IV. More recently, the WHO describes dementia as "an umbrella term for several diseases that are mostly progressive, affecting memory, other cognitive abilities and behaviour, and that interfere significantly with a person's ability to maintain the activities of daily living." (WHO, 2017, p. 2). The most common neurocognitive disorder falling under the umbrella of dementia is the major neurocognitive disorder due to Alzheimer's disease, however according to Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5, American Psychiatric Association [APA], 2013), neurocognitive disorders have other underlying causes described below.

1.2.1 *Disorder subtypes*

According to the DSM-5, both major and mild neurocognitive disorders are classified into subtypes based on the underlying cause (APA, 2013, p. 606). Some subtypes are based on the presence of another disease contributing to cognitive impairment and decreased capacity to perform ADL , such as major neurocognitive disorder due to Parkinson's disease. Others are diagnosed due to an event that has impacted the brain, such as major neurocognitive disorder due

to traumatic brain injury or due to stroke. The subtypes that this thesis is concerned with are those classified according to the presence of underlying neurodegenerative changes in the brain, and are diagnosed solely based on cognitive changes, behavioral changes and increased dependence in ADL (APA, 2013, p. 606). This includes neurocognitive disorders due to Alzheimer's disease, frontotemporal lobar degeneration and Lewy body disease (WHO, 2017; APA, 2013). For clarity in this thesis, we will refer to these disorders as major neurocognitive disorder (dementia) (Ganguli et al., 2011).

1.2.2 Major neurocognitive disorders (dementia)

As per the DSM-5, an individual with a major neurocognitive disorder (dementia) caused by an underlying neurodegenerative disease experiences a significant decline in cognitive function in one or more areas (APA, 2013 p. 602). The decline in cognition is progressive and includes complex attention, learning and memory, executive function, language, perceptual motor, or social cognition (APA, 2013, p. 602). The difficulty with cognitive function is noticed by the individual, a knowledgeable informant such as a close family member, or health clinician, and involves a substantial impairment in cognitive performance, preferably evaluated by neuropsychological testing (APA, 2013; McKhann et al., 2011).

In addition to a declining cognitive function, individuals with major neurocognitive disorders (dementia) experience a loss of independence in performing ADL. Here we may define two sub-types of ADL. Basic ADL generally refers to feeding, dressing, bathing, moving and excretion (Hartigan, 2007; Wade, 1992) whereas instrumental activities of daily living (IADL) are "complex activities a patient needs to be able to perform to be self-reliant in the community" and "consist of home maintenance, financial management, shopping for groceries or personal items, travelling independently on public transport or drives own car, managing one's

own medications and being able to prepare one's own meals" (Hartigan, 2007). Njegovan et al. (2001) have shown that a decline in cognitive function is associated with a decline in independence to perform basic ADL and IADL. In the case of major neurocognitive disorders (dementia), the severity of the disorder is partially defined according to the individual's capacity to perform these activities, with decreased independence in performing IADL, appearing in the early stages of the disease, followed by dependence for basic ADL as the disease progresses. The decline in the capacity to perform ADL and IADL independently has been shown to occur at a faster rate in major neurocognitive disorders due to neurodegenerative disease than in those due to other causes, such as due to vascular conditions (Gill et al., 2013). These declines in function may be accompanied by behavioral disturbances, such as agitation, and mood disturbances, such as apathy (APA, 2013, p. 605). As mentioned earlier, the most important health condition leading to these declines is Alzheimer's disease, accounting for 60-70% of cases of major neurocognitive disorders (dementia) (WHO, 2017).

1.2.3 *Mild neurocognitive disorder*

Within this same group of neurocognitive disorders encountered in aging, mild neurocognitive disorder involves a modest decline in cognitive functioning which is noticed by the individual, a knowledgeable informant, or a clinician and is confirmed by neuropsychological testing (APA, 2013, p. 605). There is an estimated prevalence of mild neurocognitive disorder in about 22% of community-dwelling older adults over the age of 71 (Campbell et al., 2013). In contrast to major neurocognitive disorders (dementia), an individual with mild neurocognitive disorder does not experience a loss of independence in performing ADL and IADL. However, these activities require greater effort, compensatory strategies, and accommodation for the

individual to complete compared to their previous performance (APA, 2013, p. 605). Both Nygård (2003) and Jekel et al. (2015) emphasize the need for expertise in evaluating subtle changes in performing everyday activities among older adults, as these difficulties may be one of the earliest signs of progression due to major neurocognitive disorder (dementia).

Mild neurocognitive disorder has been described as an intermediate state in which an individual demonstrates the cognitive function and the capacity to perform ADL and IADL in between those demonstrated by normally aging individuals, and those demonstrated by individuals with a major neurocognitive disorder (dementia) (Petersen et al., 2014). It has been of interest to clinicians and researchers as a precursive condition ideally to be identified prior to the onset of a major neurocognitive disorder (dementia); the clinical utility of identifying a precursive condition is that it would allow affected individuals to be targeted for interventions that have the potential to slow down the disease progression before they progress to a more disabled state (Petersen, 2004). However, there has been controversy surrounding this view of mild neurocognitive disorder, since not all individuals with this disorder have been found to progress to a diagnosis of major neurocognitive disorder (dementia) (Palmer et al., 2002); individuals with mild neurocognitive disorder are three to five times more likely to progress to any type of major neurocognitive disorder than those with normal cognition (Campbell et al., 2013).

1.2.4 *Delirium*

Delirium, the final condition included within the neurocognitive disorder group, is characterized by a reduction in the ability to direct, focus, sustain and shift attention (APA, 2013, p. 596). This disturbance of attention represents a change from their previous function, occurs

over a short period of time, and is accompanied by disturbed cognitive function in other areas. For an individual to be diagnosed with delirium, there also must be evidence from their medical history, exam, or lab results that the cognitive symptoms are due to another medical condition or caused by a substance. Unlike major neurocognitive disorders, delirium is a reversible condition which responds to treatment of the underlying cause. Most individuals recover completely, though delirium may progress to seizures coma and death if the underlying medical condition or substance is not addressed (APA, 2013, p. 596). As decline in the capacity to perform ADL and IADL is not a diagnostic component of delirium, it will not be discussed further within the scope of this paper.

1.2.5 *Risk factors, prevalence and disability*

Though the onset of a neurocognitive disorder (dementia) is no way an inevitable consequence of aging, old age is the strongest known risk factor (WHO, 2017) (Savva et al., 2009) and is also a risk factor for onset of minor neurocognitive disorders (Caracciolo et al., 2008). As the number of individuals reaching old age is expected to increase globally over the next thirty years, the prevalence of neurocognitive disorders is also expected to increase. It is estimated that the 45 million people with major neurocognitive disorders (dementia) 2015 will rise to 75 million by 2030 and 132 million by 2050 (WHO, 2017).

The loss of independence in performing ADL and IADL is associated with major neurocognitive disorders (dementia) is a significant global concern. These disorders are a major cause of disability: they are responsible for 11.9 per cent of years lived with a disability due to a non-communicable disease world-wide (WHO, 2017) and ranks among the highest contributors to years of healthy life lost due to disability among individuals age 60 years and older (WHO,

2015). There is significant concern regarding the cost of caring for individuals with major cognitive disorders (dementia): the associated disability has economic implications for families providing care and for governments. Families bear the economic cost of caring for these individuals through loss of paid employment necessitated to provide informal care (WHO, 2017). In Canada, the estimated informal unpaid caregiver time is valued at CA$1.2 billion and is projected to double by 2031 (Alzheimer's Society of Canada, 2016). The costs associated with caring from individual's with major neurocognitive disorders also have profound impact on governments that provide medical and social care. It is estimated in Canada that the health care cost for an individual with major neurocognitive disorder is five and a half times greater than for those who do not have the disorder, with home care and long-term care being the greatest contributors these costs (Alzheimer's Society of Canada, 2016). Globally, the cost of caring for major neurocognitive disorders was estimated at US$ 818 billion in 2015 and is estimated to rise to US$ 2 trillion by 2030 if the prevalence of the disorder increases as predicted (WHO, 2017).

1.3 Treatment for neurocognitive disorders (dementia)

To make matters more pressing, there is currently no cure or preventive strategies for major neurocognitive disorders (dementia) involving progressive decline in cognition and capacity to perform ADL and IADL, such as those disorders due to Alzheimer's disease or Lewy Body disease. Current pharmacological treatments are mainly applied during the early stages of the disease and do not stop the progression or significantly reduce the symptoms (Judge and Dawson, 2017). There are also no pharmacological treatments that have been shown to arrest the progression of mild neurocognitive disorders to major neurocognitive disorders (Petersen et al., 2014).

1.3.1 *Importance of non-pharmacological interventions*

Due to the cost of care associated with major neurocognitive disorders (dementia), there is strong research interest in non-pharmacological interventions that, while not curative, address decreased capacity to perform ADL and IADL and behavioral symptoms of the disorder. By delaying the progression of dependency for these activities and reducing behavioral symptoms, such interventions may reduce the cost associated with their care while at the same time increasing the quality of life for both the affected individual and their caregivers (McLaren et al., 2013; Livingston et al., 2014).

Among community dwelling older individual's with major neurocognitive disorder (dementia), exercise-based interventions and occupational therapy interventions have been shown to reduce dependency in ADL (McLaren et al., 2013; Scott et al., 2019; Bennett et al., 2019) and monitoring devices have been shown to reduce falls and prevent behaviors such as wandering (Jensen & Padilla, 2017). Occupational therapy interventions have also been shown to decrease behavioral symptoms while increasing quality of life for both community dwelling older adults with major neurocognitive disorders (dementia) and their caregivers (O'Connor et al., 2014; Bennett et al., 2019) .

For individuals with major neurocognitive disorders (dementia) living in long-term care homes, group activities, music therapy, sensory interventions, training staff in person-centered care, dementia care mapping (Livingston et al., 2014; Jensen & Padilla, 2017) and person-centered environmental modifications (Jensen & Padilla, 2017) have all been shown to reduce behavioral symptoms such as agitation. For individuals with mild neurocognitive disorder, interventions such as cognitive training and exercise-based interventions have shown to improve

cognitive symptoms, but studies with larger sample sizes are needed to confirm these findings (Petersen et al., 2014).

1.3.2 *Implications for health care professionals*

Research into non-pharmacological interventions for neurocognitive disorders remains a high priority; at the same time, health care systems and the professionals working within individuals with these disorders have to ensure that older adults with this condition "…can maintain a level of functional ability consistent with their basic rights, fundamental freedoms and human dignity" (WHO, 2017, p. 22). However, according to the WHO, today's health and long-term care systems are misaligned with the needs of older adults (WHO, 2015) and individuals with major neurocognitive disorders (dementia) in particular are frequently denied human rights in health and long-term care settings (WHO, 2017).

One step toward providing services that support the capacities of older individuals with neurocognitive disorders involves a shift in focus from curative medical interventions to providing integrated, person-centered care (Judge and Dawson, 2017), (WHO, 2015). Elements of person-centered care include self-management of care, and the possibility to age in place (WHO, 2017) with an increasing shift in location from institution based to community-based care (WHO, 2015). Non-pharmacological interventions described above that address dependence in ADL and behavioral symptoms of neurocognitive disorders have a place within these care frameworks (Scott et al., 2019; Livingston et al., 2014), though use of these interventions in clinical practice lags behind their research and development (Rahja et al., 2018).

1.4 Occupational therapy and neurocognitive disorders (dementia)

Occupational therapists have a profound potential to impact the well-being of older adults with major neurocognitive disorders (dementia) and mild neurocognitive disorders because of their professional focus on enabling individuals to participate in everyday life according to their own determination, thereby promoting their dignity as human beings. Occupational therapy is a health profession that is primarily concerned with enabling individuals or groups of individuals to engage in occupations that have meaning, both on an individual and societal level. Occupations are defined as "activities and tasks of everyday life, named, organized and given value and meaning by individuals and a culture" (CAOT, 1997a, p. 34). Occupational therapists believe that humans are by nature occupational beings who need to be engaged in activities that are meaningful to them to experience health and well-being (Townsend and Polatajko, 2013). Enablement is the key competency of occupational therapists: using a range of skills, occupational therapists enable or give individuals the power to engage in occupations of everyday life, and in doing so ensure that these individuals can participate in society according to their own determination (Townsend and Polatajko, 2013).

1.4.1 Occupational therapy terminology

In this thesis, "occupations" will be used as a more general term that includes the evaluation of both activities and occupations that an individual may engage in. The terms "occupation", "activity" and "task" can be understood using the Taxonomic Code of Occupational Performance (TCOP) in which the term occupation subsumes activities and tasks (Townsend & Polatajko, 2013). This taxonomy defines occupations as "an activity or set of activities that is performed with some consistency and regularity, that brings structure and is

given value and meaning by individuals and a culture" (Townsend & Polatajko, 2013, p. 19). Occupations are composed of one or more activities, which are in turn composed of tasks. We will use "occupation" as a general term when referring to what is evaluated and addressed by occupational therapists and will use the terms "activity" and "task" when they are referred to specifically by our study participants or by sources we have cited from the literature. Likewise, the terms ADL and IADL will be used when referenced by these sources or when a distinction between these types of activities is required for clarity.

The term "occupational performance", defined as "the actual execution or carrying out of an occupation" by an individual (CAOT, 1997), will be used in the context of describing what is directly observed by occupational therapists in their evaluations. The term "occupational capacity", defined as an individual's "actual or potential ability to engage in occupations" (CAOT, 1997), will be used in the context of describing the evaluation of an individual's engagement in occupations that are challenging, and includes their potential to engage in occupations that have not been directly observed in performance.

We will use the terms "function" and "impairment" from the International Classification of Functioning, Disability and Health (WHO, 2001) when describing the cognition and physical capacities of individuals. The term physical and cognitive "function" will be used to describe the "physiological working of an individual's cognitive and physical body systems" (WHO, 2001, p. 193). The term "impairment" will describe "problems in body structure and function such as significant deviation or loss" (WHO, 2001, p. 10). The term "cognitive difficulties" will be used only when referred to specifically by our study participants or by sources we have cited from the literature.

1.4.2 *Occupational therapy models of practice*

There are several theoretical models describing the key domain of occupational therapy practice. Most describe the interaction of the personal characteristics of the individual with the characteristics of their environment and the performance occupations by the human being. Models such as the Canadian Model of Occupational Performance and Engagement (CMOP-E) (Polatajko, Townsend & Craik, 2007) and the Person-Environment Occupation Model (PEO) (Law et al., 1996) stress that personal and environmental characteristics are connected only through the individual's participation in occupations. Occupation is therefore the key domain addressed by occupational therapists; personal characteristics, such as the individual's cognitive and physical functions, and environmental characteristics, including the physical, social, cultural, and institutional environments, are addressed by the therapist in relation to the individual's participation, or otherwise engagement in occupations (Townsend and Polatajko, 2013).

Key elements of what is described by Townsend and Polatajko (2013) of an "occupation-based practice" include: 1) the presence of an occupational issue, signalled by participation limitations or restrictions; 2) The possibility of solutions that enable occupation; 3) client-centered enablement, in which the client's perspective is central to the identification of the challenges and solutions; 4) Solutions that draw from a multi-disciplinary knowledge base and multiple frames of reference as needed; 5) the use of an abductive reasoning process, which arrives at the best possible explanation of a problem on which to base solutions. (Townsend & Polatajko, 2013, p. 206)

1.4.3 *Occupational challenges and solutions*

Occupational challenges may be addressed through a myriad of solutions within the domains of the person, the environment or the occupation itself. Solutions may be centered around the challenges of an individual, such as a nursing home resident, or of a group, such as an individual and their family, or around the needs of larger groups, such as a community organization (Townsend and Polatajko, 2013). Examples of occupational therapy goals and interventions for an individual with a major neurocognitive disorder (dementia) could include optimizing performance of ADL in the home through activity modification and guided use of monitoring devices to prevent falls in the home or improving caregiver quality of life and well-being by providing strategies to improve communication and cuing skills during daily routines (Piersol et al., 2018).

Research evidence supports the benefits of occupational therapy interventions, some of which have been described above for major neurocognitive disorders (dementia) and mild neurocognitive disorders. The ability to perform ADL independently has been shown to be the main determinant of health-related quality of life for individual's with major neurocognitive disorders (dementia) (Andersen et al., 2004). By focusing on enabling individuals to engage in daily occupations that are important to them and thereby ensuring their participation in society, the profession values of occupational therapy align closely with global frameworks for providing quality care to older individuals with neurocognitive disorders. Occupational therapists therefore have the potential to be leaders in providing evidence-based interventions that support the health and well-being of older individuals with neurocognitive disorders. However, in practice, there is under-usage by occupational therapists of evidence-based approaches that address the complex needs of these individuals. This may be due to a lack of knowledge and skills on that part of

occupational therapists to provide comprehensive care for this population (Rahja et al., 2018), practice constraints (such as limited time), or the use of evaluation approaches that are not ideal for identifying issues of occupational performance in this population. The current approaches that occupational therapists use for evaluating cognitively impaired older adults are discussed further below.

1.5 Occupational therapy frameworks for evaluating cognitively impaired older adults

1.5.1 *General practice frameworks*

Clinical evaluation of occupational performance is an important aspect of occupational therapy practice, as it provides the therapist with an informed base on which to plan interventions that address the occupational problems of their clients. Practice frameworks such as the Canadian Practice Process Framework (CPPF) (Townsend & Polatajko, 2013. p. 231) and the Occupational Therapy Practice Framework (American Occupational Therapy Association, 2014) describe an evaluation or assessment as the point within therapeutic process where the individual's key occupational issues are identified. It is the point at which the individual's occupational status is determined, which often involves and evaluation of their ability to perform specific occupations. Both frameworks highlight that an evaluation does not occur exclusively at the beginning of the therapeutic process; the clinician may return to it at a later point to readjust or add information to support therapeutic goals or adjust intervention strategies (American Occupational Therapy Association, 2014). However, both practice frameworks place an initial evaluation as a stage precluding the development of a therapeutic plan.

The CPPF describes an evaluation as the third actions point that occur within the client/therapist relationship. Prior this point, the therapist sets the stage by screening for the

client's possible occupational goals using methods such as directed interviews or tools such as the Canadian Occupational Performance Measure (COPM) (Law et al., 2005). The client's values and beliefs about occupation are explored, and their consent is obtained to proceed with occupational therapy services. The Occupational Therapy Practice Framework also describes a similar process of obtaining an occupational profile as a sub-step within an assessment (American Occupational Therapy Association, 2014).

The action point in the CPPF involves performing an in-depth evaluation to identify the personal, environmental and occupational factors that underlie the individual's occupational issues. As part of the evaluation, the therapist draws on theoretical structures including models of practice, models of service delivery, and frames of reference related to person, environment, or occupation to guide their choice of assessment methods (Townsend & Polatajko, 2013, p. 256). Methods such as individualized standardized tests, creative media, professional observation, or group methods such as focus groups may be used according to the nature of the occupational issues and the practice context: the therapist's past experience, professional expertise and research knowledge is also drawn upon (Townsend & Polatajko, 2013, p. 257). Once completed, the therapist analyses the findings using the abductive reasoning process, which involves inferring the most plausible explanation of occupational issues considering the contributing variables of person, environment and occupation. The therapist and client may then go on to construct objectives and an action plan based on the best possible solutions that support the goals of the client. Alternatively, the therapeutic relationship may end after the evaluation is completed if, for example, the therapist is acting in a consulting capacity only (Townsend & Polatajko, 2013, p. 258).

1.5.2 *Frameworks and guidelines for assessing cognitive and perceptual difficulties*

The Cognitive Functional Evaluation

Hartman-Maeir et al. (2009) further identified the need for a specific process framework to evaluate individuals with cognitive and perceptual impairments due to the difficulties they may have with reporting their concerns with everyday occupations, as well identifying their occupational goals. They identified four elements that are required to evaluate an individual with suspected cognitive or perceptual impairments which include: 1) methods to directly observe occupational performance ; 2) specific questions focused on the manifestation of cognitive difficulties in everyday life ; 3) obtaining information from proxies ; and 4) an assessment of the individual's everyday living environment (Hartman-Maeir et al., 2009). The Cognitive Functional Evaluation (CFE) proposed by the authors is a systematic evaluation process that incorporates these four elements and recommends methods for clinicians to evaluate individuals with suspected cognitive and/or perceptual impairments (Hartman-Maeir et al., 2009). The process itself includes 6 stages: 1) interview and background information including an occupational history ; 2) cognitive screening and baseline status tests ; 3) general measures of cognition and executive function in occupations ; 4) cognitive tests for specific domains ; 5) measures of specific cognitive domains in occupations and 6) an environmental assessment. The authors report this framework is intended for use with individuals with suspected cognitive and perceptual impairments across the lifespan (Hartman-Maeir et al., 2009). Please refer to Figure 2 for a diagram of the 6 stages of CFE.

The authors indicate that the first three stages and stage six must be performed to complete a basic evaluation of an individual's "cognitive strengths and difficulties in occupational performance" (Hartman-Maeir et al., 2009. P. 2). Evaluation methods are

recommended for each stage. For stage one, standardized instruments such as the Self-Awareness of Deficit Interview (SADI) (Fleming et al., 1996) are recommended to measure the individual's awareness of their cognitive and perceptual impairments. Standardized instruments such as the COPM (Law et al., 2005) are also recommended to determine daily activity routines and occupational priorities. For stage 2 of a basic CFE, standardized instruments are again recommended to give preliminary information regarding the individuals cognitive and perceptual functions. This includes cognitive screening tests such as the Mini-Mental Status Exam (MMSE) (Folstein et al., 1975) and the Large Allen Cognitive Levels Screen (LACLS-5) (Allen et al., 2007) as well as "baseline cognitive status batteries" such as the Cognistat (Kiernan et al., 1987) that provide preliminary information on the individual's function in various specific cognitive domains. For stage 3, standardized instruments are recommended to measure the impact of cognitive functions on the individual's occupational performance and also to "identify potential issues with higher order cognition, such as executive function, that have not been identified" (Hartman-Maeir et al., 2009, p. 8). Global measures of cognition in occupation such as the Cognitive Performance Test (CPT) (Burns et al., 1994) and the Assessment of Motor and Process Scale (AMPS) (Fischer, 2006) are recommended as well as instruments the specifically target executive function in occupational performance, such as the Kitchen Task Assessment (KTA) (Baum & Edwards, 1993). Finally, for stage six, standardized instruments such as the Home Environmental Assessment Protocol (HEAP) (Gitlin et al., 2002) are recommended to gather information on the context in which the individual with perceptual and cognitive impairments is required to carry out daily occupations.

The clinician may also include stages four and five of the CFE after completing the first three stages to complete an in-depth evaluation of an individual's cognitive functions in

occupational performance. For stage 4, standardized instruments that target specific cognitive domains through simulation of real-world cognitive demands are recommended. This in includes instruments such as the Rivermead Behavioral Memory Test (RBMT) (Wall et al., 1994) and the Test of Everyday Attention (TEA) (Robertson et al., 1996) that measure the individual's impairment in specific cognitive domains. A referral to neuropsychology is recommended by the authors to further evaluate impairments in specific cognitive functions. For stage five, standardized instruments measuring the "manifestation of specific cognitive deficits in occupational performance" (Hartman-Maeir, 2009, p. 11) are recommended, such as the Multiple Errands Test (MET) (Knight et al., 2002). Stage 6 must also be completed for an in-depth CFE. Table 1 provides a summary of the stages and methods for the basic and in-depth CFE alongside the stages for two other evaluation guidelines for evaluating individuals with cognitive and perceptual impairments in occupational therapy, which are described below.

Canadian and Québec Practice Guidelines

Hartman-Maeir et al.'s (2009) CFE serves as a reference for further guidelines to evaluate individuals with cognitive and perceptual impairments in Canada and Québec. This includes the McLean & Vancouver Coastal Health's (2011) guideline entitled "an OT Approach to Evaluation of Cognition/Perception..for clients from adolescents to old age", shown in Figure 3 and the *Ordre des ergothérapeutes du Québec* 's (OEQ) "Processus décisionel soutenant l'évaluation en ergotherapie d'adultes et d'aînés présentant des incapacités cognitives ou perceptuelles" (OEQ, 2016), shown in Figure 4. McLean & Vancouver Coastal Health's guideline was informed by Hartman-Maier's framework, which was then translated and adapted to Québec occupational therapy practice by the *Ordre des ergothérapeutes due Québec* in

collaboration with several universities within the province. The OEQ decisional process was then published in 2016 as a tool for occupational therapists in Québec to make clinical decisions when evaluating adults and older adults with cognitive and perceptual impairments. Both guidelines incorporate content from the Hartman-Maeir et al. (2009) framework, including the provision of steps for both a basic and more in-depth evaluation of individuals with cognitive and perceptual impairments

Terminology

An important difference between the two guidelines is the terminology used to describe professional activities within the evaluation process. The OEQ decisional process provides a distinction between the professional activities of "screening", "appreciation" and "evaluation" in their guideline and includes all three as activities that are undertaken by occupational therapists. To summarize, the screening process aims to differentiate those who are probably affected by an undiagnosed disorder from those who are not. Screening alone does not make it possible to make a diagnosis of a disorder or disease; further investigation is required to confirm a diagnosis (Office des professions du Québec, 2013). Appreciation is an "activity that takes into consideration the indicators (symptoms, clinical manifestations, difficulties or other) obtained from clinical observations, tests or instruments" (Office des professions du Québec, 2013). Evaluation is an activity that is carried only within the framework of a specific professional expertise and involves "making a clinical judgment on and individual's situation from the information available to the professional and communicating the conclusions of this judgement (Office des professions du Québec, 2013). These distinctions are important because they highlight the importance of professional expertise and provide information on the roles of

different professionals. The OEQ evaluation guideline applies the terms "screening" and "appreciation" to occupational therapy activities involving gathering information on an individual's cognitive and perceptual functions, while "evaluation", which involves a much greater degree of clinical judgment, is applied to gathering information on occupational performance. The McLean & Vancouver Coastal Health's guideline does not provide this level of distinction within the occupational therapy evaluation process: cognitive and perceptual function is "screened" or "assessed" and occupational performance is "assessed".

Steps

The steps of the Canadian and Québec guidelines are configured almost identically for both a basic and in-depth evaluation and include a broader variety of methods than Hartman-Maier's framework. For both, a basic evaluation begins by deciding if it is appropriate to proceed. This is followed by collecting background information and interviewing the individual undergoing the evaluation to determine their level of insight into their condition and explore their occupational history and issues. Unlike Hartman-Maier's framework, no standardized instruments are specified to collect information for these steps. The therapist then proceeds to evaluate or assess the individual's occupational performance using non-standardized observation of simple and routine task performance, observations of task performance using a conceptual framework or in-house evaluation guideline (as per the OEQ guideline). Standardized instruments providing a global measurement of occupational performance are also included as potential methods. Cognitive and perceptual functions are screened or appreciated using similar standardized instruments described in the Hartman-Maier framework. Finally, for both

guidelines, issues related to the individual's environmental context are considered throughout the evaluation process, instead of as a distinct stage using standardized instruments.

Both guidelines stress that a basic evaluation can be conducted when it responds sufficiently to the nature of occupational therapy services requested by the referral, or when there are time constraints on the evaluation. The OEQ guideline suggests that conducting such an evaluation can help to determine the need for an-in depth evaluation, which is a further step that can be taken if a basic evaluation does not address the complex situation of the individual, or if the individual's occupational function is high enough that issues will be more difficulty to detect. Both guidelines suggest using non-standardized observation of familiar, novel, or complex tasks, observation using a conceptual framework, such as the Perceive, Recall, Plan, Perform (PRPP) (Steultjens et al., 2012), and observation using an in-house evaluation grid (as per the OEQ guideline) for an in-depth evaluation of occupational performance. Standardized instruments, such as the IADL Profile (Bottari et al., 2010) and AMPS, are also recommended methods. Specific cognitive and perceptual functions are assessed via standardized instruments as described in the Hartman-Maier framework, with a referral to neuropsychology recommended for an in-depth evaluation of specific cognitive functions. Table 1 provides a summary of steps and recommended methods for the Canadian guidelines alongside those of the Hartman-Maier framework described above.

1.5.3 *Standardized instruments*

The above frameworks and guidelines provide support for occupational therapists to complete either a basic or an in-depth functional cognitive evaluation for an older individual. In addition to these supports to practice, Douglas et al. (2008) provides a review of standardized instruments that may be used by occupational therapists to assess cognition function and

occupational performance in older adults. The authors identify instruments with the most robust psychometric properties for reliability, validity and clinical utility. Briefly, for screening of cognitive function, the Montréal Cognitive Assessment (MOCA) (Nasreddine et al., 2005) or the MMSE are recommended ; for global baseline screening of cognitive function, the Cognitive Assessment Scale for the Elderly - English version (CASE) or *Protocole d'Examen Cognitif de la Personne Agée 2- revised* - French version (PEPCA-2r) (Geneau & Taillefer, 1996) and the Cognistat are recommended, and for evaluation of occupational performance, the AMPS is recommended (Douglas et al., 2008).

A systematic review by Wesson et al. (2016) provides additional information on the psychometric properties for standardized instruments that use task performance to estimate functional cognition in healthy older adults, older adults with major neurocognitive disorders (dementia), and those with mild neurocognitive disorder. Here, it is important to note the author's distinction of functional cognition as "an implied measure of the ability to perform daily activities" (Wesson et al., 2016 p. 336). As a result, the review includes instruments that do not necessarily measure the performance ADL or IADL or occupations, as defined by the TCOP. Based on clinical utility and strength of psychometric properties, the authors recommended the AMPS and the LACLS-5 to evaluate functional cognition in older adults with major neurocognitive disorders (dementia). They defined these instruments as "global" in that they evaluate the individual's performance skills within specific tasks, which then can be generalized to other activities. To evaluate a single domain of ADL or IADL performance, the authors recommended the KTA for clinical use with healthy older adults and those with major neurocognitive disorders. To evaluate multiple domains of ADL or IADL performance, the authors recommended the CPT for older adults with major neurocognitive disorders and the

Performance Assessment of Self-care Skills (PASS) (Holm et al., 2008) for those with minor neurocognitive disorders. The authors note that the information on the psychometric properties for of all the instruments reviewed was extremely limited for the target populations (Wesson et al., 2016).

A scoping review by Belchior, Holmes, Bier et al. (2015) provides further review of the psychometric properties of instruments measuring the performance of IADL for individuals with mild neurocognitive disorder. The authors highlighted the importance of such instruments to ; 1) use error analysis ; 2) considering how the operations of executive function contributing the performance ; 3) evaluate complex IADL ; 4) use an unstructured evaluation approach ; and 5) conduct the evaluation in a real-world setting. In this review, no instrument was found to demonstrate adequate reliability and validity for older individual's with minor neurocognitive disorder, and none demonstrated all the above criteria for evaluating these individuals. The authors recommended that future research should focus on establishing criteria for evaluating functional impairment in minor neurocognitive disorders, including developing norms for standardized instruments (Belchior, Holmer, Bier et al., 2015).

1.6 Gaps in the occupational therapy evaluation process

When research on how practicing occupational therapists evaluate older adults with cognitive impairments is compared to the frameworks and guidelines presented above, a gap within occupational therapy practice can be identified. Douglas et al. (2007) conducted a survey of Canadian occupational therapists to identify which standardized and non-standardized methods are used by occupational therapist to evaluate cognitive function and occupational performance in older adults. They found that occupational therapists use a combination of methods which evaluate

either the individual's cognitive function or their occupational performance. Standardized instruments were overwhelmingly used for assessing cognitive function, whereas non-standardized methods were predominantly used for evaluating occupational performance. Eleven of the overall top 15 assessments identified for older adults were standardized instruments measuring cognitive function. The most frequently used methods for evaluating occupational performance were non-standardized, including general ADL tasks, kitchen tasks, interview with client, and clinical observation (Douglas et al., 2007). Very few of the standardized instruments suggested by the above frameworks and guidelines were identified to assess occupational performance. In addition, the participants reported using assessments of cognitive function primarily to identify impairments, whereas they reported evaluating occupational performance helps them both identifying impairments and predict occupational capacity (Douglas et al., 2007). The authors note that the participants relying on non-standardized assessment methods to evaluate occupational performance and predict occupational capacity. In conclusion they recommended the development and promotion of standardized instruments measuring occupational performance for this population (Douglas et al., 2007).

The results from a survey of occupational therapy practices to assess occupational performance in older adults with mild neurocognitive disorder showed similarities to the above study. Belchior, Korner-Bitensky, Holmes et al. (2015) asked clinicians to identify screening and assessment instruments they would use in response to two clinical vignettes, each depicting an older individual with a different subtype of the disorder. The clinicians were again found to use a combination of methods evaluating the individual's cognitive function and their occupational performance. Once again, standardized instruments used predominantly for evaluating cognitive function and non-standardized methods were predominantly used for evaluating occupational

performance. Cognitive screening tests were used the most frequently among any standardized instruments. While clinicians were able to identify some standardized instruments measuring occupational performance that could be used for this population, they did not report using them frequently. The authors acknowledged that a clinician's choices may be influenced by a lack standardized instruments measuring occupational performance with psychometric properties for older adults with mild neurocognitive disorder. They also recommended the development of practice guidelines to aid clinicians in evaluating this specific population (Belchior, Korner-Bitensky, Holmes et al., 2015).

The finding in the above studies point to some interesting gaps in occupational therapy practice that warrant further exploration. While the stages or steps within the above frameworks and guidelines can be identified in the clinician's choice of methods, there are some tools that are almost entirely absent from their evaluations. One gap is the near exclusion of standardized instruments to evaluate occupational performance. Clinicians themselves acknowledge that an evaluation of occupational performance provides the best means to observe the impact an individual's cognitive function and predict their occupational capacity (Douglas et al., 2007). Their clinical rationale in this area is sound. Studies have shown that the performance of cognitively impaired older adults on neuropsychological tests, which provide and in-depth measurement of their cognitive function, is only moderately predictive of their ability to perform ADL (Farias et al., 2003; Martyr & Clare, 2012). Furthermore, an individual's performance of cognitive screening tests such as the MMSE have not been found to correlate with their performance of basic ADL (Brown et al., 2014). The importance of including occupational performance to predict an individual's occupational capacity is indisputable; however, the reliance on non-standardized methods by occupational therapists to evaluate occupational

performance is a concern. The individual's occupational capacity is then determined by the knowledge and experience of the clinician alone, which although an asset, may be subject to bias. Objective measures of occupational performance are recommended for an evaluation occupational capacity for individuals with cognitive impairments (Belchior, Korner-Bitensky, Holmes et al., 2015; Douglas et al., 2007; Douglas et al., 2008; Farias et al., 2003; Hartman-Maeir et al., 2009; Martyr & Clare, 2012; Wesson et al., 2016)

The need to further understand this pattern of practice among occupational therapists becomes amplified when considering the scope of practice of different professions that are implicated together in the care of older adults with cognitive impairments. Farrell-Holtan (1990) outlines the role of the occupational therapist within an interdisciplinary team providing assessments to older individuals with cognitive impairments. The author describes the role of the occupational therapist within such a team as "assess(ing) a patient's functional abilities in basic activities of daily living as well as the higher cortical functioning skills of instrumental activities of daily living…thoroughly assessing these areas identifies a patient's strengths, weaknesses, and degree of risk" (Farrell-Holton, 1990 p 56). Expertise in evaluating an individual's occupational performance is expected from occupational therapists within such an interdisciplinary team. It is not expected from other professionals on the team, such as physicians, social workers, physical therapists, pharmacists, and psychiatrists, who have their own areas of expertise to contribute to the evaluation.

In the particular practice context of Quebec, Canada, the boundaries of professional expertise among health professionals who assess and treat individuals with cognitive impairments have been formalized by law. This has placed health professionals in the province in the unique position of having their professional roles simultaneously protected and limited by

law. On June 19th, 2009, Loi du Quebec 2009, chapitre 28 was assented to by Quebec's National Assembly. This law amended the Quebec Professional Code in the field of mental health and human relations. The amendments included: 1) updating the scope of practice of each mental health profession, connecting professional acts to training, 2) establishing activities that are reserved to certain professions based on risk of harm associated with the activity and training required to perform it and, 3) providing a framework for the practice of psychotherapy in Quebec (Government of Quebec, 2012). The second purpose of the amendment described above had important implications for health professionals working with older adults with neurocognitive disorders, including occupational therapists. Loi du Quebec 2009, chapitre 28 reserves activities around the evaluation of individuals with neuropsychological disorders, including major and minor neurocognitive disorders, to specific professions. For example, any **evaluation** of neuropsychological disorders "… made by the administration and interpretation of standardized psychometric tests as well as by systematic observation of behavior in an integrated and dynamic relationship of the brain" (Government of Quebec, 2012 p. 40) is specifically reserved to a trained neuropsychologist. Occupational therapists, in turn, may "…**assess** cognitive abilities, such as attention, memory, orientation in space or planning as part of the assessment of functional abilities in order to conclude on the functional abilities of the person" (Government of Quebec, 2012, p. 44). The distinction between the two professional groups lies in the purpose of evaluation unique to their role and expertise: the neuropsychologist evaluates cognitive functions in order to explain problems within the brain itself, while the occupational therapist appreciates cognitive functions in order to evaluate how they impact the occupational capacity of the individual so as to help them realize goals in everyday life.

Following the implementation of Loi du Quebec 2009, chapitre 28, there was significant concern among occupational therapists in the Quebec centered around whether they could continue to use standardized tests of cognitive functions with their clients, and how they could continue to integrate the results of these tests into their evaluations. While concern regarding how to adjust to the new the legislation of their professional activities is understandable, the findings from research by Douglas et al. (2007) and Belchior, Korner-Bitensky, Holmes et al. (2015) regarding occupational therapy practice patterns suggests a more profound cause for their discomfort. The concerns of Quebec therapists regarding evaluation of cognitive functions may reflect on a deeper level their lack of confidence in the methods they use to evaluate occupational performance. What is also possible, yet unknown, is if the reaction of Quebec therapists to this amendment also reflects a lack of methods and tools that support them in the complex activity of evaluating occupational performance. Evidence from reviews described above by Wesson et al. (2016) and Belchior, Holmer, Bier et al., (2015) highlight a paucity of standardized performance-based instruments with adequate psychometric properties for evaluating older adults with major neurocognitive disorders (dementia) and minor neurocognitive disorders. Though the context of the Loi du Quebec 2009, chapitre 28 is particular to the province of Quebec, the evidence from the studies by Douglas et al. (2007) and Belchior, Korner-Bitensky, Holmes et al. (2015) would suggest that a problem of methods and tools may extend throughout Canada. Given the relevance of occupational therapy interventions within global frameworks for healthy aging and care of individual's with neurocognitive disorders, we believe it is of utmost importance to determine what is needed to best support the expertise occupational therapists offer in evaluating older adults with cognitive impairments. This leads to the rational and objectives of our research project.

CHAPTER II: RATIONAL AND OBJECTIVES

2.1 Rationale

Current research into the practice patterns of occupational therapists (Douglas et al., 2007; Belchior, Korner-Bitensky, Holmes et al., 2015) suggest that there is a lack of methods and tools to support them in evaluating occupational performance in older individuals with cognitive impairments. This research proposal aims to achieve a better understanding of how occupational therapists evaluate older adults with cognitive impairments and identify what knowledge and tools they perceive to be lacking to support them in the evaluation process. The long-term goal of this study is to implement evidence-based strategies in clinical settings that address the challenges faced by occupational therapists in evaluating older individuals with cognitive impairments.

2.2 Objectives

This research project will address the following primary research questions:

1. How are occupational therapists in Québec currently evaluating everyday function in older adults with cognitive impairments and what is the reason behind their clinical choices?
2. What do occupational therapists in Québec need in terms of tools or knowledge to support their practice in evaluating these clients?

This research project will meet the following three objectives:

1. To understand how occupational therapists in Québec evaluate older adults with cognitive impairments, and the reason behind their clinical choices.
2. To identify the knowledge and tool needs of occupational therapists in this area of practice in Québec.

3. To take preliminary steps to identify knowledge transfer strategies that will increase the uptake of research evidence into occupational therapy practice in this area in Québec.

2.3 Research Paradigm

We aimed to conduct an exploratory study to determine if a gap in occupational therapy practice could be addressed by providing clinicians with knowledge and tools. To meet the objectives of this project, we began by locating our study within a research paradigm, in order to determine our choice of methods. A paradigm is described as a "set of interrelated assumptions about the social world which provides a philosophical and conceptual framework for the organized study of that world" (Filstead, 1979, p. 34). In choosing the paradigm for our study we followed the classification schema proposed by Guba and Lincoln (1994). There are four categories within this schema: 1) positivism, which presumes that the world is objectively knowable, and that it can be understood through the verification of hypothesis using quantitative, experimental methods; 2) post-positivism, which presumes that the world is objectively knowable as well, though only imperfectly using hypothesis testing and experimental methods; 3) constructivism, which presumes that one objective reality is not knowable, and proposes that existence of multiple, equally valid realities can be understood using qualitative methods, and 4) critical theory, which is concerned with detecting and defining human experiences of inequality and involves intercession on part of the researcher to achieve equality and emancipation (Guba and Lincoln, 1994). Locating our study within one of these paradigms was a preliminary step to undertaking this project.

In consideration, we acknowledged that the objectives of our study were shaped by pre-existing research describing gaps in occupational therapy practice for evaluating older adults

with cognitive impairments. In particular, this research identifies very low reported use by occupational therapists of standardized instruments assessing occupational performance as well as a limited availability of such instruments with adequate psychometric properties for evaluating older adults with neurocognitive disorders. This previous research led us to develop an informal hypothesis that occupational therapists lack knowledge and tools to evaluate older adults with cognitive impairments. However, previous research has not determined if occupational therapists themselves perceive there to be a lack of knowledge and tools to support them in their evaluations and if they are satisfied with the current methods they use to evaluate this population. We plan to explore the need for additional knowledge and tools from the perspective of occupational therapist themselves.

We have situated our project within a post-positive paradigm, which assumes that reality can be objectively understood and generalized, though only imperfectly (Ponterotto, 2005). We acknowledge the possibility that not all occupational therapists evaluate cognitively impaired older adults identically and that not all will perceive identical needs for additional tools and knowledge in this area of practice. However, we do believe that there is a process to the evaluation that can be generalized to many occupational therapists who evaluate occupational performance for older adults with cognitive impairments, and moreover that they may have common needs for additional tools and knowledge to support them. In this study, we will not explicitly explore other factors that impact the evaluation process of clinicians besides availability of tools and knowledge. This would include factors related to work environment or to characteristics of the clinicians themselves, such as their sense of personal and professional efficacy. It is beyond our scope to construct a reality of practice that explores all factors influencing the evaluation process in different practice contexts. However, we will note if there

are factors other than knowledge and tool needs that strongly impact the practice of clinicians and consider their implications for future research.

To explore the need for tools and knowledge to support occupational therapists in their evaluations, we have chosen to use qualitative methods focused on gathering their perceptions and opinions. In keeping with a post-positive paradigm, these methods will be used to answer our research questions and provide preliminary answers that can be generalized to occupational therapists who evaluate occupational performance with cognitively impaired older adults in Québec. Our research questions have been constructed based on pre-existing research as described above. Our methods for data collection analysis will subsequently be chosen to extract and interpret data so as to directly inform our research questions related to knowledge and tools needs in practice.

CHAPTER III: METHODS

3.1 Study Design

To meet our objectives, we designed a descriptive qualitative study (Sandelowski, 2000) with a deductive-inductive approach to data collection and analysis. We chose this method because we believed it could be possible to generalize aspects of the clinical reasoning process, knowledge needs, and tool needs to all occupational therapists working in Québec who evaluate occupational performance and predict occupational capacity with cognitively impaired older adults. Our objective was therefore to understand the common elements that shape the overall evaluation process of occupational therapists, as well as identify common knowledge and tool needs. Sandelowski (2000) suggests that the use of a descriptive qualitative method can be "especially amenable to obtaining straight and largely unadorned answers to questions of special relevance to practitioners" (p. 337). This method supports inquiry without theoretical positioning and facilitates a comprehensive understanding of an issue simply by obtaining as much descriptive information as possible from those involved. While previous studies have used descriptive quantitative methods to explore occupational therapy practice for evaluating older adults with cognitive impairments (Douglas et al., 2007; Belchior, Korner-Bitensky, Holmes et al., 2015), we expected that descriptive qualitative methods would lead us to new insights into occupational therapy practice and knowledge needs, as we would be able to adjust questioning routes during data collection and explore information as it emerged (Sandelowski, 2000). We also chose to use a deductive-inductive approach for data analysis which would allow us to gather information directly responding to each research objective while at the same time allowing us to refine the content for each (Miles et al., 2014).

We received ethical approval for the project from the *Comité d'éthique de la recherche vieillissement-neuroimagerie* in April 2018. Approval from this research ethics office allowed us to recruit participants from a large integrated urban university health and social services region (CIUSSS) in Montréal: the *CIUSSS de Centre-Sud-de-l'île de-Montréal* (CSMTL). Sites for potential recruitment within this region included the *Institute Universitaire de Gériatrie de Montréal* (IUGM), two hospitals and three rehabilitation centres for adults with physical disabilities. Other potential recruitment sites included 9 local community care centres, (CLSC's), and 16 long term-care centres (CHSLD's). The IUGM is a specialized geriatric care centre with an attached geriatric research institute. The occupational therapy department at this location serves a variety of in-patient clinical settings including post-acute, short stay, geriatric assessment, geriatric rehabilitation and long-term care units. It also serves out-patient settings including a cognitive clinic, geriatric day hospitals, and geriatric day centers. We began to recruit participants for our study from all of the above settings in May 2018 using the sampling process described below.

3.2 Sampling

Using a purposive sampling approach as described by Patton (2007), we recruited occupational therapists working in various practice settings within the CIUSSS de CSMTL. This approach involved recruiting participants from a variety of practice settings who shared a common characteristic of evaluating occupational performance in cognitively impaired older adults on a regular basis. By recruiting a representative sampling of clinicians with similar expertise from various practice settings, we hoped to obtain a comprehensive understanding of the evaluation process that could be generalized across settings, and to other settings in Québec

where occupational therapists perform similar evaluations. We also hoped to identify the knowledge and tool needs of participants that could be generalized to other practice setting in Québec where similar evaluations are performed. Our sample included therapists that had one or more years of work experience in which they evaluated older adults with cognitive impairments on at least a monthly basis. Therapists with less than one year of experience working with this population were excluded from the study. We planned to recruit the final number of participants according to the achievement of data saturation; that is, when no new information answering our research questions emerged by adding new participants (Krueger & Casey, 2015). All participants were sent an information and consent form via email prior to data collection and were required to produce a signed copy of the form before participating in the study.

3.3 Data Collection

3.3.1 *Focus groups*

We used focus groups as the main method of data collection for the study. According to Krueger and Casey (2015), focus groups are a useful method to explore perceptions of individuals regarding a specific topic that the researcher wishes to understand. Focus groups gather groups of people who have common experiences, and work under the premise that they will be most comfortable sharing their experiences freely with others who are similar to them (Krueger & Casey, 2015, p. 5). Through moderated, small group discussions, each individual contributes their insights regarding the specific topic of interest. This enables the researcher to understand the topic based on the shared discussion and conclusions of the group (Krueger & Casey, 2015, p. 41). This method of data collection fits the objectives of our study. By gathering occupational therapists who work with cognitively impaired older adults together in small groups to discuss

their clinical reasoning and knowledge needs, we believed that we would obtain the most comprehensive answers to our research questions. A distinct advantage of using focus groups for our data collection was the potential of this method to generate ideas in a relatively short period of time. Observational methods may have provided us with information on the evaluation process uncontaminated by opinions that generated from the group discussion (Green & Thorogood, 2014 p. 138). Due to the interaction between participants, focus groups may lead to the development and expression of new perceptions and opinions on an issue that were previously not held. However, for our purposes, we aimed to directly explore these perceptions and opinions, particularly with regards to gaps within the evaluation process and potential needs for knowledge and tools. For this reason, we chose to use interviews over observational methods such as collecting data on the evaluation process from a review of patient charts.

As Krueger and Casey (2015, p. 22) acknowledge, "a group possesses the capacity to become more than the sum of its parts", that is the momentum generated by group discussion has the potential to generate more ideas than discussion with each individual alone. Focus groups provide a means to generate ideas and also to assess needs common to the participants (Green & Thorogood, 2014, p. 127). Given our chosen research paradigm, we were looking for consensus of information among participants to the greatest degree possible. We therefore choose a method that provided a large quantity of in-depth information on our topic of interest. We did not aim to obtain and in-depth account of what shapes individual practice in different contexts in order to compare and contrast realities, which require the support of individual interviews (Green & Thorogood, 2014, p. 97).

Focus groups as a method do come with limitations which presented us with challenges. Due to their nature of providing a venue for the expression of multiple perceptions and opinions, we

could anticipate difficulty establishing common practices and needs and therefore, results that could be generalized to other occupational therapists (Kruger and Casey, 2015, p. 22). We addressed this limitation as much as possibly be tailoring our sampling strategies and question routes to foster the establishment of common practices and needs in the group interviews (Green & Thorogood, 2014, p. 127). By recruiting a representative sample of clinicians with similar expertise in the evaluation of older adults with cognitive impairments and by developing a question guide mirroring our key research objectives, we hope to obtain some degree of consensus in the response of participants to our research questions.

Occupational therapists for our study were asked to participate in two focus groups (FG) sessions: FGa and FGb, planned for a maximum interval of one month apart, as well as a third focus group session planned for an interval of eight months after completion of FGb. The composition of each group of participants in FGa was retained for FGb to ensure continuity of discussion. To maximize recruitment of participants, the focus groups were held in their workplace, during their lunch break, with a meal provided. This also helped to maintain homogeneity among the participants according to their practice location; therapists who worked in the same location participated in the same groups. Maintaining homogeneity among participants supported the premise that people are most comfortable sharing their perceptions with others similar to themselves (Krueger & Casey, 2015, p. 5). We planned for focus groups of up to six participants, as smaller groups are recommended when there is high level of expertise among the participants and the topic is complex (Krueger & Casey, 2015, p. 82).

As recommended by Krueger and Casey (2015, p. 44), a question route was developed prior to conducting the focus groups, with open ended questions encouraging the participants to elaborate on their opinions and perceptions. The question route followed the following format:

1) opening and introduction, 2) key questions, and 3) ending questions (Krueger & Casey, 2015, p. 44). During the opening and introduction, participants were briefed on the purpose of the focus group and were given guidelines for participation. The participants were also given the opportunity to ask questions about the overall group process. The discussion then moved on to the key questions and sub-questions. Krueger and Casey (2015, p. 45) define key questions as the "questions the drive the study". One key question each was composed for FGa and to FGb, each reflecting one of the two primary research questions described in section 2.2. Once the key questions were formulated, sub-questions were added as probes for use as needed to guide the course of the discussion. The key question for FGa was: *"Can you describe the process you are using to assess the elderly with cognitive impairments?"*. The key question for FGb was: *"In your opinion, what type of information is most useful when you assess the elderly with cognitive impairment?"*. Following the discussion of key questions, a short verbal summary of the discussion was provided, followed by the ending question "*how well does this capture what was said here?"* which invited the participants to comment on the summary and provide additional information that might have been missed. The complete interview guide for FGa and FGb is provided in Appendix B.

Each focus group was 50-60 minutes in length, with a one to two-day gap between FGa and FGb. Forty minutes was allocated for the key question in each group which allowed sufficient time for discussion and probing. Five minutes was allocated for the opening and introduction and 15 minutes was allocated for the ending question (Krueger & Casey, 2015, pp. 45-46). The focus groups were conducted in French which was the language of the participants. One of the research collaborators of this thesis, an expert in qualitative research, acted as moderator for the focus groups and was responsible for facilitating the discussion of the key

questions. The author of this thesis acted as assistant moderator and was responsible for taking notes during the groups, providing the summary following discussion of each key question and asking the ending question. The principal supervisor of the thesis was present during the focus groups as an observer. Each focus group was recorded audio-numerically and transcribed into verbatim in French, using a professional transcription service. Participants were identified by a number only in the transcriptions to protect their identity.

3.3.2 *Sociodemographic Questionnaire*

The participants were also asked to complete a sociodemographic questionnaire prior to participating in the focus groups. In addition to their primary practice setting, the questionnaire requested each participant to provide the number of years they had practiced occupational therapy, their degree level of professional training in occupational therapy (diploma, baccalaureate or masters), continuing education they have attended related to the evaluation and treatment of older adults with cognitive impairments and the other health professionals they worked with in their current employment. Participants were also asked to indicate the age range of patients they most frequently encounter in their practice as well as the diagnosis contributing to cognitive impairment that they encounter most frequently. The sociodemographic questionnaires were collected immediately prior to the focus groups along with participant consent forms. The complete sociodemographic questionnaire is provided in Appendix A.

3.4 Data Analysis

3.4.1 *First cycle coding*

The transcribed data from the focus groups was analyzed using the approach for qualitative data analysis and interpretation described by Miles et al. (2014). We followed their three-step process to: 1) categorize the transcribed interview text into areas of content, or codes 2) organize similar codes together into broader themes and 3) display the themes in various matrix designs to present the information clearly to different audiences, for different purposes (Miles et al., 2014). During data analysis, it was necessary to analyze the content of both FGa and FGb as a whole for each group of participants. We chose to do this because answers to each key question could be found in both FGa and FGb; participants would, for example, discuss how they evaluate older adults with cognitive impairments while simultaneously proposing what knowledge and tools they required in the evaluation. To begin the analysis, the writer of this thesis, the principal supervisor and the collaborator who moderated the focus groups met to develop first cycle codes. First cycle codes are those initially assigning to the sort large chunks of the textual data into categories according to content (Miles et al., 2014). The process we used resembled first cycle hypothesis coding described by Miles et al. (2014. p 78), which involves "the application of a researcher generated, predetermined list of codes onto qualitative data specifically to assess a researcher-generated hypothesis". In keeping with our post-positivist position, we had constructed our question guide to ensure that data would emerge regarding the assessment process, knowledge needs, tools needs, and knowledge translation strategies. These four content areas comprised our list of first cycle codes, which were generated in French and translated to English before applying them to the verbatims.

Once the first cycle codes were established, the full body of interview transcripts were reviewed by the writer of this theses and passages were extracted that fit into one of the four content areas. Google Translate was used to translate these verbatim passages from French to English when there was a question whether the content of the verbatim matched with a first cycle code and one of the co-supervisors validated about 10% of the translation. Extracted verbatim passages were collected under each first cycle code heading. These passages were left in French, however, key points were removed from each passage, summarized in English, and collected together under each code. These extracted summary points in English provided the framework for describing our results, detailed further in this paper.

Sub-codes were identified by the writer during the process of applying the first cycle codes to the verbatims. This was accomplished by continually comparing new material from the verbatims to previous coded material to determine if it could be considered a distinct sub-area based on its content. For the assessment code, sub-codes emerged for the different methods used by the participants to assess older adults with cognitive impairments. For the knowledge needs code, sub-codes emerged for content areas required in assessment. Sub-codes emerged for different types of tools needed in the assessment process and sub-codes for knowledge translation strategies emerged for activities the participants found useful to integrate new knowledge into practice in the past. Our overall process for coding was thus a mixture of deductive and inductive analysis. First-cycle coding was largely deductive, in that the analysis was undertaken with a pre-determined list of categories. However, the process of creating sub-codes was inductive, in that the codes were not pre-determined but generated from the verbatim data itself (Miles et al., 2014, p. 81). All sub-codes were discussed with the writer, the two supervisors, and the collaborator before including them in the list of codes.

3.4.2 *Second cycle coding*

Once the full body of interview transcripts were reviewed and the content extracted into first cycles codes with sub-codes, we began second cycle coding. Second cycle coding involves grouping codes data into larger categories called themes, based on content that they have in common (Miles et al., 2014, p. 86). Our second cycle coding was assisted by the use of matrix displays, which are charts or tables created to assist the analysis of data and display the findings: in our case, matrix displays were used to create themes (Miles et al., 2014, p. 91). Using a table matrix for the assessment code, we were able to group sub-codes together to form themes, based on similar reasons for using the methods identified by participants. An evolved version of the original table matrix display for the assessment code is represented in Table 2 and is described in the results section below. Table matrices were also created for the knowledge needs, tool needs, and knowledge translation strategy codes to assist the analysis of content and the creation of larger themes whenever possible. For the knowledge needs code, the sub-codes for different areas of content were thought to be best represented as distinct themes and were therefore not combined. For the tools needs codes, the sub-codes could be combined to create one large theme, based on a shared overarching clinical need for the all of tools. The sub-codes for knowledge translation strategies were again felt to best represented as distinct themes and were not combined. Table 3 depicts the final evolution of the original table matrix displays for knowledge needs and tool needs, while Table 4 represents the final evolution of matrix displays for knowledge translation strategies.

3.5 Data Validation

3.5.1 *Network and Matrix Displays*

Following analysis of the data from the first two focus groups, our remaining step is to validate the data collected from FGa and FGb with the participants. Miles et al. (2014, p. 58) indicate that products data analysis, such as our tables and network displays, can be circled back to participants "as a way of providing member checks on the accuracy of descriptions, explanations and interpretations". Additional displays of the data were constructed to present the data as succinctly as possible for review and commentary by the working clinicians who participated in the study. A network display was chosen to represent the themes related to evaluation, because the relationship between them described "a process, and thus a network of how things act or transform across time" (Miles et al., 2014, p. 91). The network display was designed to depict how and when evaluation methods are chosen over the period of the assessment process. Figure 1 in our results section depicts the final version of the network matrix depicting the evaluation process. We designed additional table matrix displays for the knowledge needs, tool needs, and knowledge translation strategy themes. Here, we displayed each knowledge and tool need in a separate table for clarity and separated one of the tools identified by participants working in-patient settings only. The clinical need for the knowledge or tool was displayed prominently at the top of each table, along with the settings in which participants identified the need for them. The knowledge translation strategy themes were integrated into the tables by placing the participants preferred strategies alongside the specific knowledge or tools they wished to integrate when the data supported it. The matrix designs for validating the knowledge needs, tools needs, and knowledge translation strategies themes with participants has been included in Appendix C- Figure 2.

3.5.2 *Focus Groups*

Our original study protocol planned for a third focus group, FGc, to validate the analyzed data with the original participants. Due to the events of the COVID-19 pandemic, we were required to modify the study protocol for the third focus groups to avoid in-person interaction with the participants and conduct remote meetings. Data validation is still ongoing. Due to the timeline for completion of the academic requirements for the writer, data validation with be completed after the submission of the thesis.

A question route has been prepared for the third focus group, following the same format of FGa and FGb: 1) opening and introduction ; 2) key questions ; and 3) ending questions (Krueger and Casey, 2015, pp 44). We are planning to send the participants the network display for assessment themes (Figure 1) and the matrix tables for knowledge needs, tools needs, and knowledge translation strategies (Figure 2) to review two weeks prior to participating in the third focus group. Participants option for written validation will be sent the same displays, as well as a questionnaire with the same questions as the third focus group which they will be invited to return via email.

Three key questions have been prepared for FGc: 1) "*How well does Figure 1 represent the assessment process?*" ; 2) "*How well does Figure 2 represent the types of knowledge and tools that you require in the assessment process?*" ; and 3) *How well does figure 2 represent main strategies that you prefer to acquire new knowledge?* Sub-questions have again been added as probes to use if needed to guide the course of the discussion. Please refer to Appendix D for the question guide for the third focus group, and Appendix E for the written questionnaire. We again plan for the third focus group to be 60 minutes in length, with 15 minutes allocated for each key question and 5 minutes allocated for the introduction and ending questions. There will

again be a maximum of 6 participants per group with the same co-investigator for FGa and FGb acting as moderator for FGc, and the writer acting again as assistant moderator. To the greatest degree possible, we will attempt to follow the original participant composition of FGa and FGb.

We plan to use the ZOOM platform for FGc. Participants will be issued a link to the meeting via email, which included the meeting password, and number for the dial-in option. The ZOOM platform settings for the meeting will be adjusted to 1) create an automatic identification number for each meeting, 2) require participants to provide a password for joining a meeting, 3) integrate the meeting password in the meeting link, 4) disable participants from entering the meeting before the moderator (oonly members of the research team and participants who returned the signed the information and consent form will be allowed to enter the meeting), 5) activate the co-moderator option, and 6) disable to option for participants to screen share. The ZOOM platform will not be used to record the meetings. Instead, they will be recorded audio-numerically by the moderator, using an audio recording device place next to the computer screen.

The recordings of FGc will not be transcribed but will be reviewed by the student writing this thesis along with the responses to the written questionnaires. Summary notes from both sets of responses will be made by the writer and checked for congruence with the main themes and sub-themes from FGa and FGb. The results of the study will be adjusted for new information emerging from validation, although this new information will be distinguished from the data gathered via earlier analysis and coding.

CHAPTER IV: RESULTS

4.1 Participant Demographics

The final number of participants recruited for our study was sixteen, that were divided into 4 groups. Each group participated in two focus groups sessions (for a total of 8 sessions), at two points in time because clinicians were only available for about 40 minutes each meeting as they we met during their lunch time. Recruitment was discontinued at this number, as the team agreed that data saturation had been reached. By the end of the fourth group sessions (session 7 and 8), no additional methods or steps were identified from the previous groups' description of the evaluation process, and no new insights were introduced into why particular methods where used. Similarly, no significant additional knowledge or tools needs were identified from those identified in the proceeding groups sessions.

The results from the sociodemographic questionnaire are summarized in Table 2. Ten of the sixteen occupational therapists recruited for the study worked at a specialized geriatric care centre. All of the care settings previously described within this facility were represented in our sample; in-patient care was represented by sub-acute and rehab settings, out-patient services included a geriatric evaluation clinic, cognitive clinic, geriatric day hospital and geriatric day centres. Long term was also represented at this setting, though therapists working in these settings provided rehabilitation to specific patients on the unit. The remaining six occupational therapists were recruited from two CLSC's. These participants functioned either in a combined role as case-manager and occupational therapy clinician for community care clients, or solely as an occupational therapy clinician. Three occupational therapists were recruited from each CLSC. All of the participants completed the information and consent form and the sociodemographic questionnaire before participating in the study. Please refer to Table 2 for

further details regarding the number of years of practice experience of participants as well as their completion of continuing education related to evaluating and treating older adults with cognitive impairments.

The majority of participants evaluated cognitively impaired older adults in the age range of 76-85 years old. The most frequently reported diagnosis they reported was mild neurocognitive disorder, followed by major neurocognitive disorder (dementia) On average, the participants assessed four older adults with cognitive impairments per week, ranging from one evaluation per month to twelve evaluations per week. Participants identified working with nurses most frequently in their practice, followed by social workers and neuropsychologists. Other health care providers involved in the care of older adults with cognitive impairments included nutritionists, physical therapists, speech therapists, psycho-educators, music therapists, recreation therapists, family physicians, pharmacists, and personal care attendants.

4.2 Results for Objective 1:

How occupational therapists evaluate older adults with cognitive difficulties and the reasoning behind their choice of methods.

The study's first objective was to understand how occupational therapist evaluate older adults with cognitive impairments and the reason behind their clinical choice of methods. Three themes emerged from the focus groups that responded to this objective, each representing a distinct stage in the evaluation process. The three themes are: 1) gathering information from **the individual and others involved** to plan the evaluation ; 2) gathering information from **standardized testing** and non-standardized observation to evaluate occupational performance and safety ; and 3) applying a **clinical reasoning process to predict occupational capacity**.

Subthemes emerged within two of the three main themes for distinct methods used within each stage of the process.

The three themes represent stages of the evaluation process because they are related chronologically. Each occurs at a specific time in the evaluation process in relation to the others; the methods used within each stage could not be employed without the information collected from the stage before. The network display shown Figure 1 depicts the temporal flow of themes as stages of the evaluation process, including the subthemes of methods used at each stage. Table 3 provides a summary of the themes and subthemes for objective 1, which are discussed further below.

4.2.1 ***Theme 1***–*Gathering information from the patient and others involved to plan the evaluation*

Gathering information from the older individual and others involved is the first stage of the evaluation process. The participants described using two methods to collect information within this stage: 1) gathering information from other health professionals; 2) gathering information from an informal interview with the individual and a close family member.

Subtheme 1: Gathering information from other health professionals

Occupational therapists gather information from other health professionals to **determine who requires their professional evaluation, and what is a priority for them to assess.** In our sample group, the main source of referrals to occupational therapy were other health care professions. Physicians were the primary source in the specialized geriatric care setting, while therapists in the community care settings received referral from physicians and other health professionals, such as nurses or social workers. The referral is the first point of data collection: it

almost always includes a reason for the individual to be seen by occupational therapy. It may be stated as a broad request such as “global functional evaluation”, or a request to address a specific problem such as “assess ability to adhere to a medication regime”.

The participants report often receiving referrals to find solutions to suspected problems with occupational performance, especially when there are concerns regarding the individual’s safety at home. Depending on the referral, they will collect further information to clarify what is important to evaluate, and why. Concerns are clarified by speaking with the referral source and reading the individual’s health records. Descriptions of the individuals’ physical and social environment are noted when possible, especially observations that have implications for safety at home, such as cigarette burns on the carpet, or disorganized medications. This helps the therapist to **understand why they are being asked to become involved with the individual:**

> *So, when we receive these requests and we are asked for a "global evaluation", I will call the referral source back, and ask them to specify "what are the issues that you noticed?” Because otherwise, we will not be efficient. So, it will happen that I call back the referral source to identify much more precisely what my involvement as an occupational therapist will be in the case...* (Focus group 3, Participant 3- Free translation from French verbatim)

Information collected from other health professionals also helps the therapist to decide who is the highest priority for their evaluation, which is relevant when organizing heavy caseloads with multiple referrals per day. This information base is the starting point from which the therapist can move to other methods; the next step is typically an informal interview with the older individual and a close family member:

> *So, what in fact when I receive a request from the CLSC,... I have the file; I already have the person's diagnosis. I read the file ... so I have a good profile of the person. Already, that is part of my assessment. I already have a good idea of what to expect when the person comes for an interview* (Focus group 1, Participant 5- Free translation of French verbatim)

Subtheme 2: Gathering information from an informal interview with the individual and a close family member

After collecting background information from other health professionals, occupational therapists conduct an informal interview with the older individual to **further target which daily occupations are most important to observe** in the evaluation. The interview is used to establish the individual's daily activity routines, which may include their lifelong occupational roles and habits. Current problems with daily occupational performance are discussed, as well as the individual's prior levels of ability, awareness of safety issues, and therapeutic goals. Details regarding the individual's environment are explored if the therapist is not able to observe them directly. The COPM (Law et al., 2005) was identified by some participants as an inspiration for their questions, though not completed and scored.

> *Well, we have a framework… We all end up asking the same questions. It is nothing standardized, but we take a look at all the lifelong habits of the person. I think questionnaires are the same, in terms of the initial interview. I think maybe we all make little tweaks in our own manner. But overall,… I think it is the COPM, our model? It is really concerned with… everything about the environments, the activities of daily life, the activities of domestic life… We go through all of that* (Focus group 1, Participant 1-Free translation from French verbatim)

The interview helps the therapist plan which activities to evaluate via observation. Typically, occupations that are not part of the individual's routine and do not pose a problem for them will not be evaluated because they are not relevant to their issues in everyday life:

> *Well, the process, basically - I start with a good initial interview with the person and with the family, to validate… at home, what were her difficulties, and what were her habits, as well? Because I won't evaluate things she didn't do at home. I won't evaluate meal prep if she hasn't been cooking for years; it's irrelevant. And from there, I choose the activities that I will evaluate: meal preparation, dressing, showering, all that.* (Focus group 1, Participant 2-free translation of French verbatim)

The interview may also be used **to explore the impact of cognitive difficulties on the individual's performance of daily occupations.** For example, an individual may describe disinvestment in occupations that were once part of their usual routines. This provides a clue for participants that certain occupations may be no longer possible for the individual to perform due to a cognitive impairment and may help them to target those which might be important to observe to further define their abilities and limitations.

> *Another notion in the interview that I often notice is that of disinvestment in certain activities. Often people say "Ah, I don't do that anymore, it's been a long time. "Ah, that, I liked that, but ..." Often times, that gives me clues. A lot of times it's, I imagine, a protective reaction, or at some point something gets difficult and you let it go, because it confronts. So often these are clues that allow us to know where to dig in terms of evaluations. And since this is a clientele where self-criticism can often be compromised, well this is the relevance of validating, in different ways, the information.* (Focus group 1, Participant 1-Free translation of French verbatim)

The therapist also interviews a close family member to **validate the information provided by the older individual**. Close family members have the benefit of knowing the individual over a long period of time and can describe what their abilities were like prior to them becoming a concern. If family member is unavailable, a close friend or health care professional may be able to provide validation. Validating this information is necessary because the individual's cognitive function may impact their ability to report information accurately. The individual may also feel threatened to have their cognitive impairment known and therefore downplay their difficulties:

> *I would say… basically, to have the opinion of the user, but also to have information and observations from those around him; because as we said, people with cognitive problems often have an impaired self-criticism. So, you can't necessarily rely on what the user says, in full ... You need to have information from relatives and friends and family.* (Focus group 3, Participant 3- Free translation of French verbatim)

The information gathered from the older individual, close family members and other health care professionals helps the therapist to understand the key issues behind the

referral to occupational therapy. This sets the stage for the next step, which involves gathering information using methods that assess the individual's occupational performance and safety.

4.2.2 ***Theme 2****: Gathering information from non-standardized observation and standardized testing to evaluate occupational performance and safety*

Gathering information from non-standardized observation and standardized testing is the next stage of the evaluation process as described by our participants. We define non-standardized observation as methods used by the therapist in which they evaluate an individual by observing their occupational performance without the pre-determined use of an evaluation guideline, conceptual framework or standardized test (McLeod & Vancouver Coastal Health, 2011; OEQ, 2016). The participants described using three methods to collect information in this stage of the evaluation process: 1) gathering information from task simulations ; 2) gathering information from standardized tests ; and 3) gathering information from free observations.

Subtheme 1: Gathering information from task simulation

Non-standardized task simulations are **used more frequently than any other method to evaluate occupational performance and safety**, according to the participants. They are valued because they allow therapists to directly observe what an individual is able to do. By simulating and observing selected activities, therapists can determine for themselves if an individual's performance is both functional and safe. Task simulations are extremely practical for therapists because they **can be modulated to include only occupations that are relevant to the individual's issues** in everyday life. Observation of one or two specific daily activities may be

all that is required to solve a problem; for example, a simulation may be limited to bath transfers and hygiene if the only concern is the individual's need for help or equipment for these activities.

> *...I would say, more generally, when it is recommended at the level of autonomy ... the benefit of a task simulation, we can really adapt it. To really get the information you need and stop when you have had all the information you need. And adjust in case of super difficulty* (Focus Group 1, Participant 1-Free translation of French verbatim)

Task simulations **can be modulated to allow the difficulty of the evaluation to be graded** according to the strengths and limitations of the individual. A simulated task may be stopped if it becomes too difficult for the individual to perform. The therapist may also assist at the same time noting the amount and type of help required. Task simulations may also be intensified to thoroughly define the impact of the cognitive impairment on occupational performance:

> *I sometimes will like to put them in something a little more complex, which they've done before, but which might they not be doing right now. Just to be able to… it will allow me to calibrate the level of impact… For example, if they prepare a sandwich and they reheat it, sometimes I will add a second component, or I will increase the degree a little bit. complexity; just to allow me to calibrate.* (Focus group 1, Participant 1- Free translation of French verbatim)

Simulations may also be modulated to **explore the individuals use of strategies** to compensate for cognitive impairments that impact occupational performance; for example, by integrating assistive devices they use at home:

> *And this is where, also, the potential to recommend, for… you know, there are people, often… I am going to ask them for example to bring with them their diary, their medicines, their calendar; whatever they use at home. Since they are at home, I ask them to bring it with them, and they explain it to me. And at the same time, I look inside, and I see a little. I make a scenario to set a new appointment with me* (Focus group 1, Participant 1- Free translation of French verbatim)

Safety concerns during everyday activities are **explored using task simulations whenever possible**. The therapist notes if the simulated task is performed as expected. If an

unexpected result occurs, they consider if it is due to the individual's lifelong habits, cultural differences, or errors in performance. Unexpected differences in the performance and end result of a task are tolerated, but they must occur without placing the individual in any identified danger. The gravity of consequences that could result from a divergent performance is considered when determining if it is unsafe:

> *Well, the errors ... What is different from the norm? And here is where we have to be careful because there is the cultural. You know, what's the norm, according to ... We're always influenced by our personal experiences. And that's where you have to be careful, sometimes, and always keep ... working to say, "Okay, no, that's different. That's not what I do, but ... At that point, what's the risk, what's the consequence, what's the risk in terms of how often it might happen?* (Focus group 4, Participant 3- Free translation of French verbatim)

It is here that participants identify limitations to using non-standardized task simulations, despite their efficiency in addressing specific functional concerns. They acknowledge that they must rely on their individual judgement, and that this can have important implications for the reliability of the results. **Accumulated clinical experience functions as a norm reference** when the participants use non-standardized observations; they use this experience to judge if the performance of a task is safe. One participant proposed that experienced therapists are more likely to be aware of potential bias in their evaluation. However, most acknowledge that relying on their experience alone can produce biased results. Individual perceptions of what comprises a risk to safety can influence their conclusions, and in some cases, past professional experience can produce bias:

> *But that assessment won't be exactly the same, even if we see the same thing, the five of us. We won't necessarily have the same analysis or the same recommendation in the end. Colored by our experiences - by our professional experience, by our personal experiences. There is all this that tints our evaluations a lot - especially from a cognitive point of view* (Focus group 2, Participant 3- Free translation of French verbatim)

Participants also note that conclusions drawn from task simulations are less valid when performed outside of the individual's usual home environment. For example, in hospital, an individual may perform daily occupations better than they would at home due to the structure provided, or worse because they are performing in an unfamiliar setting.

> *And it can happen, too, that ... You know, scenarios are all the same in clinical settings. And we knew that at home, people perform much better than in the clinic. There is that, too, that must be taken into consideration*. (Focus group 2, Participant 2- Free translation of French verbatim)

Only one participant in the community care-setting reported the use of an in-house guideline for assessing a simulated meal preparation. Non-standardized observations are otherwise overwhelmingly favored, with reliance on professional experience to evaluate occupational performance and safety. This is a principal reason why participants integrate standardized assessment tools into their evaluations, which include cognitive screening tests and performance-based tests, particularly when the results will have important consequences to the individual.

Subtheme 2: Gathering information from standardized cognitive screening and performance-based tests

Therapists use **standardized testing to address issues of bias in their evaluations**. Standardized tests are valued because they provide a score for the individual's performance and a range of what is considered normal. This provide the therapist with an objective means to decide if the individual's performance deviates from normal and to what extent. The results can also be directly compared over time which facilitates understanding of progress for the therapist, patient and family. Standardized tests are also valued because they **provide a framework to assess the impact of cognitive functions that are difficult to reproduce in task simulations.** For

example, designing simulations to evaluate an individual's judgement in response to potentially dangerous situations at home is difficult to simulate. Finally, the therapists value standardized tests because they ensure that different therapists can arrive at the same conclusions about a performance. This **facilitates understanding of assessment results between clinicians**:

> *I received an evaluation from the OT at the hospital who had done that evaluation; so, it allows us to speak the same language. So, when she said that the gentleman was able to recognize all the security features, I knew exactly what she was talking about. It still gave me qualitative data regarding how my man will react in the kitchen. So, I find that it gives a lot more content to our evaluation* (Focus Group 3, Participant 2- Free translation of French verbatim).

Participants report being more likely to use standardized tests when the evaluation involves legal consequences to the individual, as in the case of legal capacity, or if there are other profound personal consequences to the individual, such as their safety to continue living in their home. When these consequences are involved, therapists feel the need for more objectivity, which standardized tests with scores and norm references can provide.

> *If an in-depth assessment is required, I'll try to really include some standardized tools, which I'll really use at that point - like PECPA, for example. It will depend a bit on where the demand is coming from, and in what context, in fact. It will depend on the level of functional impact of cognitive impairment. If it's a high level and the consequence is a possible relocation, it's going to be all the more important to have a fairly concrete, detailed assessment and all that; because the implication is very big for the person.* (Focus group 4, Participant – Free translation of French verbatim)

When there are legal consequences to the evaluation, the results may be contested by the patient or their family. In this case, the participants are not comfortable relying on non-standardized observations of occupational performance alone. They report that poor test scores are more accepted by the individual and their family as evidence that an individual's cognitive impairment limits their ability to drive or care for themselves and their property .

> *Well, this is again to take away the subjectivity in the result. As it's going to be results that may very well be disputed. I mean, it's like being backer, because these*

are the results that will probably be challenged… (Focus group 2, Participant 4-Free translation of French verbatim)

Participants are at times requested by other professionals to integrate specific standardized tests into their reports, because they are well-known to the referring professional. For example, at times they are asked by referring physicians to include cognitive screening tests in their evaluation of an individual's occupational performance and safety:

..there is the interview with the user and the family, the scenario, and to standardized test, often it is the MOCA or the MMSE…These are the two cognitive evaluations which are nevertheless well known by family physicians… I had a physician who asked me to administer both, and it was from all this information that he made his decision regarding the interventions that were to be carried out. 'he was going to do. (Focus group 3, Participant 2- Free translation of French verbatim)

In general, cognitive screening tests are administered by participants to individuals with a suspected cognitive impairment if another health professional has not recently done so and if neuropsychological testing is not available. The MOCA followed by the MMSE and the PEPCA-2r are preferred. Participants stress that they cannot draw conclusions on occupational capacity and safety from these tests alone: they must link the individual's performance on these tests with their observations of occupational performance.

... a lot of times I make a connection to everyday life - for example, if it's for a driving test, I will make the connection. Or if it's at the monetary level, managing executive functions and all that, and we say it in our words (Focus Group 3, Participant 2- Free translation of French verbatim)

Cognitive screening tests are relied on heavily to assess driving. In addition to administering the MOCA, all participants include the Motor Free Test of Visual Perception (MVPT) (Colarusso & Hammill, 1972). Some add additional cognitive screening tests such as Trail Making A and B (Tombaugh, 2004) and the Bells Test (Gauthier, Dehaute & Joanette, 1989). These tests are relied on to screen safety to drive because the participants cannot simulate this activity in their work settings. Instead, they rely on correlational evidence established in the

literature between these tests and driving ability. Again, therapists do not rely on screening tests alone to draw conclusions on occupational performance and safety. If the test scores are below normal they request a referral for an in-depth driving evaluation, including a road test, at another facility.

> *We cannot evaluate it any other way. And there are still things in the literature that say… There is some evidence that it has to do with driving. And I think…in my mind, there is so much impact on patient that this data is important for that. In real life, the result of the MVPT, if it isn't for the driving, it won't be of much use to me.* (Focus group 2, Participant 3- Free translation of French verbatim)

Two performance-based tests were commonly identified in both the community care and specialized geriatric care settings. The Safe At Home assessment (Robnett et al., 2003) includes both a questionnaire and a simulated performance scenario to assess the individual's judgment in responding to safety hazards in the kitchen. The participants report using both the standardized questionnaire and performance scenario. This test is appreciated because it provides a process to assess and individual's judgement in unsafe scenarios and can be completed in a relatively short period of time (30 minutes). However, participants are unable to score the performance on the scenario because they have not been standardized for older adults. Interestingly, they continue to use the test and include observations from the administration in their reporting because they find the scenarios useful.

The participants also report use of the *Échelle de montréal pour l'évaluation des activités financières* or EMAF (Bédirian, 2008) when contributing to evaluations of legal capacity. The EMAF provides both a standardized questionnaire and standardized task simulations to evaluate ability to manage personal finances. It includes activities such as paying bills, writing cheques, and planning a budget. A total score can be calculated and compared to scores for normal older adults. The EMAF is not frequently used by participants outside of evaluations of legal capacity

due to the length of time required for administration. It is also only available in French and lacks simulations of modern financial practices such as internet banking. Participants express concern that it may not reflect how the individual manages their finances in real-life.

> *The EMAF, to name it ... It is very interesting, it is well structured, but it is not related to the financial habits of the patient. What are the habits? So, we're like ... here again, we direct, we structure, and it's not quite related to his daily life.* (Focus group 2, Participant 5- Free translation of French verbatim)

Gathering information from standardized testing is therefore helpful to therapists to increase the objectivity to their results and to assess the impact of cognitive functions that are difficulty to simulate and observe.

Subtheme 3: Gathering information from free observation

Non-standardized free observation is the final method used by participants to evaluate occupational performance and safety. The main advantage to this method is that it **allows therapists to see what the individual does when left to their own devices**. Task simulations and standardized tests are directive; they provide the individual with direction toward an expected outcome. Free observation allows therapists to see what the individual initiates and accomplishes on their own when no directions are given. Though not the primary method used in evaluations, free observations provide therapists with valuable supplemental information on the individual's occupational performance and safety.

> *There's also a lot of ... a lot of information that we're going to document by observation. For example, if the person arrives and their clothes are dirty; if there are smells; if she forgot her medication for the day… If she forgot to come – right now there is a lady, she cancels every time. Clearly, it's because she isn't able to organize herself, and she has cognitive issues.* (Focus group 2, Participant 5- Free translation of French verbatim)

Observations can include those regarding the individual's personal appearance as described above, of their actions, and of their living environment. The latter is more available to participants working in the community care settings; they described the home environment as a rich source of information on how well the individual is functioning:

> *So sometimes, the level of safety, we can see if the elements are burned, if there are burns on the ground ... In terms of medications, we can see if we see that there are medications that have been forgotten during the week. So, it gives us ... sometimes the person isn't going to tell us on their own, either because they don't want to tell us, or because they don't realize it. So often, it's more the environment that will give us data at that time* (Focus group 3, Participant 2- Free translation of French verbatim).

Access to free observations is particularly important when the individual does not collaborate with standardized testing or task simulations. A request for an occupational therapy evaluation typically comes from a health care professional who has concerns about and individual's occupational performance and safety. It is rarely initiated by the individual in question. Lack of collaboration on their part is therefore not uncommon. The individual may resist collaborating because they feel threatened and afraid of their difficulties being exposed. They may also fear that exposure of these difficulties may lead to institutional placement. Free observation **allows the therapist to gather information without directly confronting the individual.**

> *You know, there are things that we can see, ... and to measure, it's going to be a bit like the scenarios: what is the risk that this brings? What is the danger of that? But it's going to be more by observation. If, for example, we see things in the house… if by frequent visits we see that there is the same food, in the same places, poorly preserved or kept even though they are out of date, well… that, it is not within the framework of a scenario, except that it is an observation, and that will perhaps give us information which poses a danger for the person. So that will also be put in the evaluation reports, ultimately, and it will help build our analysis.* (Focus group 4, Participant 1- Free translation of French verbatim)

Individuals feel threatened when safety concerns are presented to them regardless of the method used to identify them. The participants stress the need to establish a collaborative

relationship with the individual. This includes acquiring consent for the evaluation: therapists cannot record and report observations of a patient without obtaining consent. Ideally, they must build their therapeutic relationship with the individual until the right moment presents to address safety concerns.

> *When you name a cognitive difficulty, not everyone - most people don't take it that well. Because often they don't see it, or they deny it. So, if we want to keep a bond, sometimes I think to myself, "Right now, is it at risk for her? "If not, I'll wait a bit later.* (Focus group 3, Participant 1- Free translation of French verbatim)

This concludes the various methods used by the participants to evaluate occupational performance and safety for older adults with cognitive impairments. The final stage of the evaluation process is unique in that it describes the clinical reasoning process occupational therapists use to predict an individual's occupational capacity based on what they have observed.

4.2.3 ***Theme 3****: Applying a clinical reasoning process to predict occupational capacity*

Applying a clinical reasoning process unique to occupational therapy for predicting an individual's occupational capacity is the final stage of the evaluation process. Requests to predict occupational capacity are often nested within referrals to occupational therapy for evaluating safety at home. For example, participants working in in-patient care settings are often asked to evaluate and older individual's safety for discharge home without directly observing how they manage in that setting. The participants describe the clinical reasoning for prediction as dependant on a combination of professional knowledge and skills. First, they must **understand the physical and cognitive demands** of the occupations the individual routinely engages in, within the context of their usual environment. Second, they must understand the **individual's underlying physical and cognitive functions**. Finally, they must **observe,**

understand and articulate how these functions are impacting the individual's occupational performance.

The participants indicate that their professional training has oriented them to identify the physical and cognitive requirements of any given daily occupation. This includes applied knowledge of **a hierarchy of difficulty for daily activities** that is based on the physical demands and cognitive complexity required. The hierarchy helps them to predict if an individual will be able to perform an activity based on their physical and cognitive function. The participants stressed that it is rare that they see individuals for issues related to cognition only, so they usually consider both the cognitive and physical requirements of the individual's daily occupations.

> *And the element on which we did not insist on much yesterday, but which is one of our realities, is that it is rare that we see someone for only cognitive impairments ... Often, it is one diagnosis among many conditions… You know, older people have many co-morbidities.* (Focus group 1, Participant – Free translation of French verbatim)

The cognitive vs. physical demands of an activity can differ in their intensity for the same activity. In terms of cognitive demands, **an activity is considered to be as easier or more difficult based on the degree of routine or repetition involved**. Non-routine activities are considered more difficult because of higher cognitive demands. These are complex activities that have fluctuating requirements; they are not necessarily performed the same way each time. For example, driving or managing finances required adjusting actions on the spot to accommodate what is happening immediately, and may require also planning and projecting oneself into the future. The participants assume that if an individual is able to perform these types of activities, they will be able to perform those that are more routine

> *For example, if I see a meal prep here and it's going very smoothly, I can already assume physically there are the prerequisites. If she arranges to do two preparations*

> *at the same time, then I can assume that this person has the prerequisites for bathing. When the level of complexity is higher, than ultimately a much more routine, day-to-day task - we're going to transpose* (Focus group 1, Participant 1-Free Translation of French verbatim)

More routine daily activities are described by some participants as "automatisms": they are always performed in a similar manner, rarely need adjustment during performance and are performed in response to an immediate need, sometimes many times over the course of a day. Toileting, for example, is consider the most basic routine activities in terms of cognitive demand. **If performance difficulties are observed with more routine activities, therapists conclude they will be present with less routine activities**:

> *Well, for example there are executive functions; so, planning, executing, correcting at the same time if mistakes happen. In driving, it's all the time. And in addition, there is the timing factor; so, if we arrive at a light and a pedestrian passes, there is a child - we don't see the light, we don't see the child… There is risk management to be done which requires certain cognitive abilities. And if the person does not have it, at the level of… if there are difficulties that we see in the kitchen, where a task is static, let's say, we are not in a dynamic environment… We can wonder, in a car, what can happen?* (Focus group 3, Participant 2- Free translation of French verbatim)

While comfortable describing the relative difficulty of everyday activities, the participants are less comfortable identifying and articulating how specific cognitive function is impacting an individual's occupational performance. To capture how a cognitive impairment impacts occupational performance, some participants try to observe it in **at least three simulated scenarios**, and preferable **confirmed via other sources** such as free observations and standardized testing:

> *What are the common difficulties? What kind of difficulties are there that have an impact? Because you generally say, when you find it in three areas, well, it's a pivotal element, so to speak.* (Focus group 2, Participant 1-Free translation of French verbatim)

Overall, the participants report that distinguishing the cognitive impairment impacting occupational performance using unstructured task simulations and free observations alone is time consuming given the number of observations needed. The participants do not find these methods precise enough to appreciate the cognitive impairment, articulate the severity of impact, describe how it is compensated for and predict how the individuals will perform other activities. It is here that the participants begin to articulate a need for supplemental knowledge and tools to help them formulate conclusions from their observations:

> *And in addition, if we can have something that would help us from three scenarios, which allows us to generalize or extrapolate "for this type of activity, this lady should be adequate, and this type activity, less", that would be perfect.* (Focus group 2, Participant 2- Free translation of French verbatim)

Documenting the results and conclusions using these methods is likewise time consuming as observations need to be interpreted and described to justify conclusions. Cognitive screening tests provide the participants with language to describe cognitive function, but they are not comfortable relying on these test results to describe the individual's performance. They describe a responsibility to express their observations in the language of their own professional domain and report that this has been heightened since the amendments to the professional code implemented by Loi du Quebec 2009, chapitre 28. The participants describe a professional pull to describe how cognitive impairments manifest in occupational performance:

> *Because before, you know, "executive functions" was a jargon that we used before Law 21, but no longer use… Now we will say "more difficulty planning the steps"* (Focus group 2, Participant 4-Free translation of French verbatim)

It is here that we begin to explore the second objective of our study: the need for knowledge and tools that would support occupational therapists in their evaluations of older adults with cognitive impairments. Already we see hints of an emerging need for supplemental

knowledge and tools that to support identifying and articulating how specific cognitive functions are impacting occupational performance.

4.3 Results for Objective 2:

What type of knowledge and tools needed by occupational therapists to evaluate older adults with cognitive impairments?

The second objective of the study was to identify knowledge and tools needed by occupational therapists to evaluate older adults with cognitive impairments. Three themes emerged responding to this objective, each representing an area of knowledge or type of tool supporting a specific clinical need in the evaluation process. The three themes are: 1) knowledge related to cognition and occupational performance ; 2) knowledge related to legal capacity and protection regimes and ; 3) tools to support assessing the impact of cognitive function on occupational performance. These themes were generated by participants in all settings, with the exception of one subtype of tool, which was generated by therapists in the specialized geriatric care centre only. Table 4 provides a summary of the themes and subthemes for objective 2, which are discussed further below.

4.3.1 ***Theme 1****: Knowledge related to cognition and occupational performance and skills to apply this knowledge in practice*

The first theme describes the knowledge needed by participants related to cognition and occupational performance. Three subthemes emerged for this theme: 1) Knowledge of cognitive processes and cognitive disorders ; 2) skills to apply knowledge of cognitive processes and disorders to evaluation of occupational performance ; and 3) knowledge of interventions that compensate for cognitive difficulties in occupational performance.

Subtheme 1: Knowledge of cognitive processes and cognitive disorders

Participants agreed that **a basic understanding of cognitive processes and cognitive disorders is required** to be able to detect when a cognitive impairment is causing problems in occupational performance. Most indicated that they have acquired knowledge of cognitive processes through their professional training. However, they recognize that **this knowledge must be kept up to date**, as the knowledge, theories and vocabulary change over time. This includes knowledge related to both cognitive processes and cognitive disorders:

> *Well ... always needs to be kept up to date ... Yeah, and dementia ... it's still something that's complex. ... You know, I did training, and I also did a master's course. And these are things that you should always refresh. Because memory, we only hear that term once in a while, we need someone to explain to us, too, all the new terms. So that, I find that helps. To always be stimulated to keep knowledge, and to update oneself.* (Focus group 4, Participant 2- Free translation of French verbatim)

Subtheme 2: Skills to apply knowledge of cognitive processes and disorders to evaluations of occupational performance

Participants describe even greater **need for skills related to applying their knowledge of cognitive processes and cognitive disorders** within their evaluations of occupational performance. Though they may have acquired up to date knowledge in these areas, they cannot easily identify a specific cognitive function can impact an individual's occupational performance. There is a lack of confidence in their own observations and doubt regarding their findings:

> *I question myself all the time, to be sure I have all the information, in fact ... when I had another case where we had to go to court, it seems that again, to be sure of myself, I revisit my judgment. What to really assess, cognitive ... what information to include? The training gave me the knowledge on cognition, but it seems like applying it afterwards in the environment is more difficult. Because we have all the knowledge at the cognitive level; episodic memory, semantics, and all that. But then, to really*

apply it in practice, and to use understandable words, too ... (Focus group 3, Participant – Free translation of French verbatim)

As previously discussed, therapists feel uncomfortable with relying on their own observations, particularly when their evaluations have legal consequences for the older individual. This is partly due to their discomfort in identifying and articulating how specific cognitive functions are impacting the individual's occupational performance. They feel pressured to detect the problems, but do not feel they are equipped with the skills and resources to support them in the analysis of their reasoning explaining an individual's occupational challenges.

Basically, we all evaluate a bit the same way - it's sure that there's a kind of pressure put on us, but you know, we're going to ... We might push patients a little more, but it remains that we will put them in a simulated task in the kitchen, ... Our evaluations are still the same, but it seems that there is a pressure - in any case, I still feel a little lacking in resources… (Focus group 2, Participant 5-Free translation of French verbatim)

Some of the participants report that **formal training focused on observing and identifying problems with cognitive function** during everyday activities has been helpful. This training, offered as a course within their professional degree or as a continuing education course, provided them with instruction on how to focus their observations to appreciate specific cognitive functions and how to articulate what they observe. Despite receiving this training, the participants still report a need to improve their skills in this area. They perceive a need for greater speed and precision, as well as the ability to generalize their results to other situations:

So, being able to identify certain cognitive difficulties more quickly, that would help. And sometimes the dosage, too… I see she's apraxic, but is it intense? It's hard to measure the difficulty here… the level. The level of memory, compensated up to where? What are the elements that help us know that she is going to be able to compensate, or maintain, or transfer her compensation at home? (Focus group 2, Participant 1-Free translation of French verbatim)

This led to further discussion of tools that would help participants to appreciate and articulate how cognitive functions are impacting occupational performance, which are presented in in our discussion of Theme 3.

Subtheme 3: Knowledge of interventions that compensate for cognitive impairments in occupational performance.

Though not the focus of our study, we have included the needs that participants expressed for knowledge related to interventions. They identified a need for **knowledge about interventions that address the impact of the individual's cognitive impairments on performance of daily occupations** once they have been identified. The participants consider this knowledge to be related to the evaluation process in that it shapes what they are looking for. They expressed that an evaluation describing the individual's occupational performance only is incomplete; it should offer more.

> *I think that's more the end - you know, I feel super comfortable making good observations, and grouping my concepts together to rule, "Ok, that's really a difficulty … But after that," ok, but now, what is my conclusion? Is he going to be able? "I have a hard time saying how far I can rule on certain things; or what can I recommend, other than just, "well, he can't."* (Focus Group 1, Participant 4-Free translation of French verbatim)

Suggested areas for further knowledge translation include guidelines for **interventions that exploit the residual cognitive function** of the individual. This would include **training on how to help the individual employ compensatory strategies at home** and **guidelines for implementing assistive technology** to support compensation. The participants also need further **guidelines on how to address behavioral symptoms** at home. They expressed that they do not have enough knowledge to feel at ease in these areas, and some believe it was missing from their basic professional training.

4.3.2 ***Theme 2****: Knowledge related to legal capacity and protection regimes*

The second theme describes the knowledge needs of participants related to legal capacity and protection regimes. Determining an individual's legal capacity, or their ability to care for themselves and their personal property is a reserved act for social workers and physicians within the practice contexts of this study. However, the participants are regularly sought out by these professionals to contribute to decisions of legal capacity. As a result, participants report a need for more knowledge of terms and concepts related to legal capacity in order to **exchange information with other professionals** and **contribute to these decisions**. This knowledge would enable them to **target relevant information in their evaluations**:

> *You know, what I would like is more information on all things related to aptitude-inaptitude. Even though I know that it is not me who decides "is the person fit or not", I think I would be able to provide even more information.* (Focus group 1, Participant 2- Free translation of French verbatim)

Specific knowledge includes **differences between complete and partial inaptitude and types of protection regimes**. The participants recognize the impact their expertise in evaluating occupational performance and safety might have on decisions of legal capacity. Increased comfort with concepts related to legal capacity would help them to solidify their confidence in relevance of their observations and enable them to **advocate for what is in the best interest of the individual**.

> *I also think that having a little more training ... as an occupational therapist, you would have more confidence that you are bringing something. And there is a lot ... you know, it's a reserved act, but at the same time I think there is so much observation that we as OT's can nurture, which has a lot of impact overall … Respect for one's own personal limits, putting oneself in a risky situation, the notion of risk, the extent of the risk to returning home… I really think that we have a lot of elements… and it is really with our pair of glasses that we are more inclined to see them.* (Focus group 1, Participant 1-Free translation of French verbatim)

4.3.3 ***Theme 3****: Tools to support evaluating the impact of cognitive function on occupational performance*

The third theme describes tools identified by participants that would support them in evaluating the impact of cognitive function on occupational performance. Three subthemes of tools emerged: 1) standardized performance-based tests, 2) evaluation guidelines and conceptual frameworks, 3) facilitative assessment environments.

Subtheme 1: Standardized performance-based tests

The participants report a **lack of standardized, performance-based tests that are practical to use** in their work environments. The tests that they are aware of require too much time to administer, require formal training for the therapist to learn, or require specific materials that are often out-of-date or not easy to access. In addition, some performance-based tests they like to use do not have norms for older adults. They acknowledge that cognitive screening tests are over-used in their work settings and the conclusions the participants can draw from them on occupational performance and safety are limited:

> *I like it, having a standardized tool. I find that super important, especially when we do evaluations. I often do an evaluation and there have already been two evaluations, and you want to compare. And the only thing that is used - or in the health system in general, which is used a lot, a lot, we agree, is a mini-mental, or the MOCA, and I find that very... That's screening, that's it, exactly. And it's overused.* (Focus group 4, Participant 2- Free translation of French verbatim)

The participants specifically identified a need for **standardized, performance-based tests for instrumental daily activities (IADL)**. Typically, the participants receive referrals for a comprehensive evaluation of occupational performance and safety when an individual begins to have difficulty with IADL. When the individual they are evaluating has known difficulty with basic ADL, they have often already had an evaluation of occupational performance and

interventions are put in place. The participants indicate a preference for **a global evaluation of IADL performance**, that allows them to assess occupational performance in other domains. The EMAF has many of the specific characteristics they require in a standardized performance-based test, but it is limited to managing personal finances:

> *If you take the EMAF, I think that's a great good example of a tool that you can use to compare, and that doesn't take training. You still need to take the time to sit down, read it, and try it out. But you don't have to sign up for training and go there to use it. And it's super clear, it's super good. So, if there was something so accessible, but which perhaps portrays a more global picture than just financial management, it would be, I think, an asset* (Focus group 4, Participant 1- Free translation of French verbatim) .

As this example demonstrates, the participants would like a standardized test that is **accessible**; it should require **little or no formal training to learn** how to use it, and it should not require the purchase of a workbook for administration. The participants prefer the option to **learn a test on their own, in a short amount of time**; two hours to review the test is ideal. The test should also be **practical to use in the workplace**; it should not require more than 45 minutes to an hour to administer. A test with **long and short versions** is preferable, allowing therapists to adjust to the endurance of the individual and the depth of information needed. Any materials required should be up to date and easy to find. For our participants, an English version of any standardized test should be available, as they work in multi-cultural practice contexts where English is often the common language between therapist and client. Finally, the test must **have norms for older adults**, to allow comparison of the individual's performance:

> *It's nice to have a number that everyone understands and is able to compare over time. You should never stop at just that that, you need to do everything else and the scenarios; but it's also interesting, and it allows you to triangulate. You know, especially in cases where you're not sure, it helps you find something very objective. It also helps to add that little side to avoid biases between each person - you know, culturally, personally, and in our experiences.* (Focus group 4, Participant 2- Free translation of French verbatim)

In addition to a performance-based test for IADL, participants require standardized tests to evaluate **the impact of cognitive impairment on occupational performance** and give a specific need for a tool to evaluate an individual's **judgement in unsafe scenarios**. As previously discussed, the participants stress that it is difficult to capture the impact of specific cognitive functions on occupational performance using non-standardized task simulations. Although experience helps the participants decide if the individual can make safe decisions, they are not comfortable relying on experience alone to predict behavior in unsafe scenarios:

> *I would say that what I really would like and which is the most subjective when one evaluates, it is really to evaluate the judgment. I find it to be so much of a subjective thing. We have a good idea, and the more experience you have, the more you see what reactions and responses are acceptable, and what are not. But sometimes it's a bit of a gray area. So that, I find that it is missing.* (Focus group 1, Participant 2-Free translation of French verbatim)

Participants routinely use the Safe at Home assessment (Robnett et al., 2002) even though it is missing norms for older adults because it provides them with information on an individual's response to unsafe scenarios at home. To have norms available for this test would be helpful to them, as well as other tests to evaluate the impact of specific cognitive functions in occupation. The option to provide a score for a performance would, in turn, support the participants in communicating the results of their evaluation to other professionals, which is important in certain situations such as contributing to decisions of legal capacity.

> *We haven't addressed it at all, but I, sometimes, I don't feel so comfortable with… We are not the ones who rule on inaptitude, but we are often asked to collaborate, to rule on the suitability of the person to manage property, finances, and all that. There, we are often framed by task simulations, either functional or otherwise. You know, I think doctors and the like would like that to have clearer answers, clearer ratings for that - which they are not provided in occupational therapy. Maybe it's personal, but I don't always feel very well equipped for this type of assessment, which is really more of helping doctors or others to determine capacity.* (Focus group 2, Participant 4-Free translation of French verbatim)

Subtheme 2: Evaluation guidelines and conceptual frameworks

While participants from all practice settings identified the need for more practical standardized performance-based tests, some indicated they would be better served by evaluation guidelines and conceptual frameworks. Their main concerns with standardized tests are that the activities are too structured and do not reflect what the individual actually does in their daily routines. To obtain a score for performance, the activity must be executed exactly the way the test requires and only activities provided by the test can be scored. The participants note that not all individuals perform well on this type of testing, as the activities are not always pertinent to their everyday lives. As previously discussed, therapists prefer the freedom to choose activities and modulate them via task simulations but **require guidelines and conceptual frameworks to analyse the individual's performance**.

> *... in types of standardized assessment, but by simulation, it is always very structured. If there was a way we could leave the task really free, but there was a way of analyzing the activity that was a little more structured, maybe ... but ... That's it! Not something that takes three hours ... if there was a little greater freedom in the choice of the task, that it be less framed than "it is absolutely necessary that she does that in this step so that we can use standardization or dimension ".* (Focus group 2, Participant 4- Free translation of French verbatim)

Guidelines would **include key elements that need to be observed in the performance of any simulated task.** Some participants suggested that guidelines providing general advice on how to assess the cognition within daily occupations would be helpful. However, participants from almost all focus groups propose that **a grid providing direct cues of what to observe during task simulations** would be a useful format for a framework:

> *... I will try to draw a parallel – driving a car, for example, in a scenario on the road, we have grids for that. So, during the evaluation, we check; for example, if the person signaled their intentions, if they put on the flashing light. Unprotected left turns that are executed well; visual scans, when they come to a stop or an intersection. So, these are all the broad outlines that we observed, that we could check off and that we can put in our report ... So maybe that's what we should have,*

but for different daily activities when we do evaluation. (Focus group 3, Participant 3- Free translation of French verbatim)

The participants proposed different kinds of observations could be provided on a grid. They believe the grid should provide cuing for **key cognitive functions that can be observed in the performance**; for example, the individual's ability to initiate a task or their ability to recognize objects in the environment and using them correctly during an activity. The grid could also allow them to record the **type of assistance required during the activity**. The participants stressed that overall, an evaluation grid **would provide a structure for their non-standardized observations of occupational performance**, as well as **vocabulary to describe what they are observing**:

It is also more of a vocabulary, sometimes, that we seek to qualify. You know, we are able to write it down: "She walked, it took her 12 minutes to go find the bread, even though we showed her where it was, and we told her that it is in the cabinet on the left. We are able to write it. But to formulate it in a more specific way, sometimes that's also what we miss, perhaps ... (Focus group 2, Participant 3-Free translation of French verbatim)

Ideally a conceptual framework would allow the participants the ability to **locate where the individual's performance lies based on a continuum of independence in occupational capacity**. If they observe and appreciate the same cognitive function impacting performance during a few observations, this framework would help them to generalize how it would impact the individual's overall occupational capacity. Ideally, this could be accomplished observing three everyday activities. Such a tool would therefore help the participants to **generalise and predict occupational capacity**:

Maybe, if there was something like that, a structure a little more defined, it would be a little easier to generalize ... You know, if we did two tasks and the errors are always in such section, such section , it's a little easier, I think, in the eye of a therapist, to generalize, versus to do other tasks, or to have to re-evaluate them all… That's what doesn't exist, I think, but that's it, whatever the task ... you know,

> *sometimes the scope of the task is too limiting.* (Focus group 2, Participant 4 - Free translation of French verbatim)

Some participants acknowledge that the AMPS allows the rater to locate the individual's motor and processing skills on a continuum, based on their performance of two or more activities. The AMPS also provides cut off scores on the continuum to predict if the individual is at risk of further functional decline (Bernspang & Fisher, 1995). However, the participants find this tool too structured; the activities it provides for testing do not necessarily reflect what the individual does in real life. They would prefer a framework would allow them to draw the same conclusions for task simulations chosen to reflect the everyday activities performed by the individual in real life.

> *Because if you look at the AMPS assessment, which is structured in the style of the tasks the person has to do, they were trying to make some kind of correlation like that; that if you did two or three of the activities they were talking about, it allowed you to put together a chart that showed you roughly where the person's level of difficulty was. But the task is framed; and the task is specific, you know?* (Focus group 2, Participant 2 – Free translation of French verbatim)

The participants noted that evaluation guidelines and conceptual frameworks would also ensure that **different therapists reach the same conclusions** observing the same patient using their preferred method of tasks simulations, thus increasing inter-related reliability using this method.

Subtheme 3: Facilitative assessment environments

The final tool suggested by participants was needed only for those working in **in-patient care settings** within the specialized geriatric care centre. Participants who evaluated older adults with cognitive impairments within these care settings need facilitative environments **it is more difficulty to assess occupational performance and safety outside of the individual's home environment**. In-patient care units have help available for basic ADL such as bathing and

dressing. In addition, the unit provides a structure to the day; for example, meals arrive at the same time and medications are distributed regularly. It is therefore difficult to predict how well an individual will manage daily activities at home when home does not offer the same help or structure.

> *It should be observed, ideally. But it is not possible, unfortunately, all the time, in the context of care. We can't do it.* (Focus group 2, Participant 4 – Free translation of French verbatim)

The participants propose that access to **an environment resembling a studio apartment** would provide a more realistic milieu to assess occupational performance. The space would **include a kitchenette**, and it would be located **close to in-patient care units** with **help from hospital staff available if needed**. Ideally the suite should be **equipped with a video camera,** so they could observe and monitor the patient's activity at key points in the day. When there are significant safety concerns regarding discharge home, an individual could be transferred to the apartment prior to leaving for 12 to 24 hours before leaving. Under the observation of the therapist, they could complete routine ADL and IADL such as personal care, preparing their own meals and do their own laundry without help, to see how they manage.

> *If we had a more facilitative environment… you know, an apartment, or something… Here, we are really limited by the physical spaces which are a bit institutional. But an environment where we could even say, "ok, we can leave him 12 hours, or 24 hours ..." How is he going to manage? So, have a more realistic physical environment ... We could document, really, the initiative ...* (Focus group 2, Participant 4 – Free translation of French verbatim)

The advantage of a facilitative environment is that it would allow the participants to **assess the individual's occupational performance and safety in a home-like environment**. Absence of hospital staff would allow them to identify if the individual **initiate routine daily activities**. It would also allow them to identify if the individual has enough endurance to perform routine activities over the course of a full day. A further advantage is that the

individual's safety and occupational performance could be evaluated with less risk than if they were sent home for a trial period, as help from the in-patient floor staff could be reinstated if needed. This type of trial could be helpful for the individual **to understand their own limitations,** and what will truly be required of them when they return home:

> *... maybe they would see the effort it takes to eat three meals a day. Or maybe they're just going to make one, and they won't eat for the rest of the day. And we will find that there may be something to work on at this level. Because I mean, what you have to do in a day, normally, compared to what they have to do here - you know, your meal is served on the table.* (Focus group 2, Participant 2 – Free translation of French verbatim)

The participants point out that to their knowledge, facilitative environments are often used in rehabilitation settings for individual's with physical difficulties and are good environments for clinicians to introduce technical aides and compensatory strategies. They would like a similar environmental resource to be available in their work setting.

4.4 Results for Objective 3:

What are the preferred strategies for occupational therapists to integrate new knowledge into practice?

The final objective of the study was to take preliminary steps to identify knowledge transfer strategies to increase the uptake of knowledge into clinical practice. Two themes emerged responding to this objective, both representing a strategy that the participants found useful in the past to acquire integrate new knowledge. The two themes are: 1) interacting with experts in the field and 2) interacting with students, professional peers and other health professionals. Table 5 provides a summary of the themes and subthemes, which are discussed further below.

4.4.1 ***Theme 1***–*Acquiring new knowledge through interaction with experts in the field*

The participants expressed a preference for interacting with experts in the field to acquire new knowledge for clinical use. They identified experts in the field as **researchers who are constantly contributing to evidence in their area of knowledge** and identifying directions for future research. The participants indicated they do not have the time or resources to keep up-to-date on knowledge and tool developments for evaluating older adults with cognitive impairments. Some do not have access to databases in their workplace, so finding and reading research articles is a challenge. This group of clinicians look to researchers to **provide them with new knowledge to move their practice forward**. However, they stipulate that new knowledge must be **presented to them in a synthesized form**, with **guidelines as to how they could use it in clinical practice**:

> *Honestly, there is one aspect that I think that we, as therapists ... we don't have the time, indeed, to read ... studies become very specific on a subject and answer a research question. ...But we need to chew on it; and for me, that's one of the parts that I love about training, is getting up to speed on the evidence… it points us to where the research is going. So that's a way to refresh, and to refresh our practice. And we need this to be prepared for us, because we don't have time. And I think that's a much more effective way to have a more concrete impact on our practice ... we need to have research people who act as agents of change in this; but we have the will to improve or to perfect ourselves.* (Focus group 1, Participant 1 – Free translation of French verbatim)

The participants identified two types of interaction with experts that have helped them to acquire new knowledge in the past: 1) interaction via formal courses and 2) interaction via informal workshops. Formal courses, typically described as being 2 days in length, are the **more immersive** experience of the two and **provide more time for material to be covered in depth**. This allows clinicians to become more comfortable with the new material. The participants

report that formal courses are most effective when the **theoretical content is relevant to their practice** and presented in a **format that is easy to refer to**.

> *I would say… what I liked about her training is that… well, I think she has a teaching method that speaks to me. Because I like it a lot, she uses conceptual models a lot, and that speaks to me. I still remember them, the diagrams - when I have a diagram which shows me something and that I can use it as a reference table to support my reflections ... it is something. thing that speaks to me. And I find that it stays a little more in mind.* (Focus group 1, Participant 1 – Free translation of French verbatim)

New knowledge is also much more likely to be integrated when it is **presented with clinical examples**. This includes clinical case studies requiring them to apply the new knowledge in discussion with their peers. Clinical examples using **multi-media such as video vignettes** are particularly appreciated; participants report retaining these clinical examples and identifying similar cases in their own practice.

> *That's for sure ... her training ... I just wanted to come back, because it's so interesting and relevant. And you learn a lot - especially because she gives very concrete examples. It's not just theory. She often showed videos. Then we had to analyze them with the group. So, we team up, we equip ourselves with the right evaluation methods when dealing with patients who look like these examples*. (Focus group 1, Participant 3 – Free translation of French verbatim)

While formal courses are appreciated, the participants report they are difficult to access due to time off needed from work and limited financial support from their departments. They report that many of the courses they would like to attend are offered during the work week. Some describe an amotivational situation of needing to take unpaid time off from work to attend a course that they have paid for out of their own pocket.

> *I think in general training is not always super accessible to us. We have to take days on our own. And often, we don't get paid for the training, we have to pay out of pocket. So, it is not always easy to go looking for information to learn new information on existing evaluations* (Focus group 4, Participant 3 – Free translation of French verbatim)

Some participants describe a practice within their departments of sharing knowledge from formal courses. Those who have attended a course are required to present a brief summary of the content to their peers. This reportedly does not result in successful knowledge uptake for those who did not attend the course; the clinician must attend the course, which provides them with enough immersion in the material to reflect personally how they will use it in their practice:

> *And yes, it's true, there is a person who is going to go to the course, and who has to give the information to the others afterwards; but it's not true that you can pass a two-day training course on to your colleagues in 15 minutes. So yes, they gave us some info afterwards, but concretely, that does not help me. I didn't take the training, so that doesn't help.* (Focus group 1, Participant 2 – Free translation of French verbatim)

Informal workshops are a promising method of interacting with experts because they are **cost-effective and convenient**. An hour-long workshop can be **adapted to accommodate the location and schedule of clinicians**. The participants described workshops scheduled over their lunch break or during staff meetings as being an effective method. Some have had consistent interactions with then same expert over several informal workshops. They report this had a strong impact on their new skills and knowledge. Others describe single short, informal workshops as being a catalyst for them to explore an area further via an in-depth course.

> *We were also fortunate to have ... come during lunch hour a few times to talk about how to assess memory, executive functions, all that. For me, it was like a review every time she came; so she is still very present within our team.* (Focus group 1, Participant 5 – Free translation of French verbatim)

The participants also stress that the **timing of when they receive new knowledge from experts is important**. Some indicate that they did not receive enough information on how to evaluate and treat older individuals with cognitive impairments in their basic professional training. However, more report that they were in a better position to integrate this knowledge

into their clinical practice after they had more extensive experience working with this population:

> *..when you have work experience, and you have training afterwards, you know concretely how all the information you absorb will influence your practice. But when you're in school, you try to absorb it all, and you think to yourself, it'll probably come in handy someday. You don't know how. It's nothing concrete for you in your mind, so it doesn't consolidate. And that makes you lose some of it, and there are things that you forget. You can't attach it to anything.* (Focus group 1, Participant 4 – Free translation of French verbatim)

4.4.2 ***Theme 2****-Acquiring new knowledge through interaction with students, peers and other professionals*

The participants also expressed the benefits of interacting with occupational therapy students, their professional peers, and other health professionals to acquire new knowledge. The unique combination of these types of interactions result in the uptake of new knowledge that addresses **specific clinical issues in their work setting.**

Participants identify occupational therapy students as clinicians in training who are completing clinical internships at their work setting. These students help the participants to acquire new knowledge by **asking clinical questions** during their training that demand reflection and sometimes research to answer. This leads to both the therapist and student acquiring new knowledge. The participants often give students clinically-based project that require research into questions they do not have time to answer themselves. Students also bring up to date knowledge from their training programs to their clinical internships and share it.

> *And having a student, I find that motivates us, too. And the student too, since he's still in school, he's more up to date with what's going on right now, what's new. So that also allows us to keep ourselves up to date with our knowledge*. (Focus group 1, Participant 5 – Free translation of French verbatim)

The participants also acquire new knowledge by talking to their professional peers, which includes occupational therapists working either in their own environment or other clinical

settings. Acquiring **knowledge from the experience of other occupational therapists** is especially valued by more novice participants who are establishing their methods of practice.

> *So, watching someone with more experience is like, "Okay, that's good". And "ah, she uses that technique". So, you know, it's more experiential, what we are looking for; and it's hard at first, … But it seems that what would interest me more, is to go see people in their context of evaluation, and maybe in other settings too, where there are other cultures of the environment - to have more experiential baggage than what I would have acquired just by working here for years* (Focus group 1, Participant 4 – Free translation of French verbatim)

Working in a larger occupational therapy department is viewed as an asset because of the exchanges of knowledge that occurs between peers. Knowledge may be **acquired through one-to-one discussions or through organized exchanges among groups** of therapists to address a specific practice concern. In this excerpt, a participant described how the therapist in her department addressed immediate practice concern following the implementation of Loi du Quebec 2009, chapitre 28:

> *That's how I got to the point. I did not go to read about it. It was a lot while chatting together, exchanging aloud on the subject that I became somewhat aware of the impact of all this.* (Focus group 1, Participant 1 – Free translation of French verbatim)

Interactions with other health professionals also provide the participants with the opportunity to acquire new knowledge. Other health professionals have **different areas of expertise** and provide supplementary information relevant to the clinical situation. Again, knowledge may be exchanged via one-to-one discussions, or through more organized exchanges:

> *There is a social worker here - whenever there are new groups of doctors and interns coming in, she gives a little training of about 45 minutes to really explain everything about the difference between full inaptitude, partial inaptitude, protective regimes,… I found that super relevant, and everyone should have access to that.* (Focus group 1, Participant 2 – Free translation of French verbatim)

In closing, the participants describe using a blend of interactions with experts in the field as well as interactions with students, professional peers, and other health-care

professionals to integrate new knowledge into clinical practice. For example, they describe learning about cognitive systems and disorders through formal courses with experts in the field, as well as from clinical neuropsychologists through interactions in their work setting. New knowledge on standardized tests to assess the impact of cognitive impairment on occupational performance might be acquired via both formal courses from experts in the field, as well as from occupational therapy students completing an internship in their work setting.

CHAPTER V: DISCUSSION

Our study had three research objectives: 1) to understand how occupational therapists evaluate older adults with cognitive impairments and the reason behind their clinical choices, 2) to identify the knowledge and tool needs of occupational therapists in this area of practice and 3) to take preliminary steps to identify knowledge transfer strategies that will increase the uptake of research evidence into occupational therapy practice. Our results showed that the participating therapist's use a clear process to evaluate older individuals with cognitive impairments and that this process is the same among the in-patient, out-patient, and community care settings. Distinct steps could be identified within the evaluation process, each occurring at a specific time in relation to the others and each defined by a clear rationale for choice of methods and tools. Within the evaluation process, the clinicians described an analytical framework they use to identify the impact of impaired cognitive function on occupational performance and predict occupational capacity in areas they have not directly observed. They also described clear and similar needs across the practice settings sampled for additional knowledge and tools to support them in their evaluations. Finally, they were able to provide information on the best ways for them to acquire new knowledge to assist them in practice according to their past experiences, including interaction with experts in the field and interaction with professional peers, students, and other professionals.

5.1 Objective 1: How occupational therapist evaluate older adults with cognitive impairments and the reason behind their clinical choices

By identifying the main themes related to evaluating older adults with cognitive impairments and creating a network display showing the relationships between these themes, we created a framework for the overall evaluation process used by participants (Figure 1). In order to clarify practice gaps within this process, it is useful to compare our constructed framework to

two of the existing occupational therapy frameworks for evaluating individual's with cognitive and perceptual impairments described earlier in this paper: Hartmann-Maier's (2009) Cognitive Functional Evaluation (CFE) and the OEQ decisional process for evaluating adults and older adults with cognitive and perceptual impairments (OEQ, 2016). Table 6 summarizes the steps and methods in our process framework and compares it with the steps and methods from these two other frameworks.

We begin by noting that our framework contains all the key elements identified by Hartman-Maier (2009) to evaluate individuals with suspected cognitive and perceptual impairments as described in section 1.5. The participants use methods to directly observe occupational performance, ask the individual specific questions focused on the cognitive difficulties encountered in everyday life, verify this information with a proxy and conduct an assessment of the individual's living environment. The depth of the environmental assessment described by our participants depended on their practice context; those working in community-based settings reported being able to directly observe the environment while those in institutional settings report relying on descriptions from the individual or proxy information.

We can also identify all six stages of Hartman-Maier's CFE in our framework, including those required for basic cognitive functional evaluation and those required for an in-depth evaluation of specific cognitive domains in occupation. Differences begin to arise when we compare our framework with Hartman-Maier's CFE for methods used at each stage. The CFE recommends using standardized instruments, such as the SADI to measure the individual's awareness of their limitations, as well as the COPM to determine daily activity routines and occupational priorities. Our participants instead rely on semi-structured interviews with the individual and a close family member to gather this information. The use of cognitive screening

tests such as the MMSE and baseline tests of cognitive function were common to both the CFE and our framework. However, the only standardized instruments measuring specific cognitive functions identified by our participants were those used to screen safety to drive, such as the MVPT. There was also very limited mention by our participants of using instruments providing a global measurement of cognition in occupational performance, such as the CPT, or instruments targeting executive function in occupational performance, such as the KTA. Likewise, the participants did not report the use of instruments targeting specific cognitive domains in occupational performance, such as the MET. The participants indicated a strong preference for using non-standardized task simulations to evaluate the impact of cognitive impairment on occupational performance which they achieve by increasing the complexity of the simulation beyond the evaluation of the individual's immediate issues. Although standardized tests of occupational performance such as the Safe at Home and the EMAF were integrated by our participants, these tests were often completed only partially, without obtaining a full score, and the participants noted a lack of normative data for some of these tests. There was also no reported use by our participants of standardized instruments to providing information on the individual's home environment, such as the HEAP (Gitlin et al., 2002) as recommended in Hartman-Maier's framework.

We are able to further probe these gaps within the occupational therapy evaluation process when we compared our constructed framework to the OEQ's (2016) "Decisional process for evaluating adults and older adults with cognitive and perceptual difficulties". As our data was collected in 2018, some of our Quebec-based participants may have been familiar with this decisional guide, so it serves as a useful activity to compare it to our constructed model to identify gaps in practice. When we compare our framework with the OEQ decisional process,

we can again identify all of the specific steps in their process and there is more congruence of methods used by our participants with the OEQ decisional process than with the CFE. This is because the OEQ guideline includes non-standardized task simulations as a recommended method for both a basic and an in-depth evaluation of occupational performance. As previously stated, our participants showed a strong preference for this method in their evaluations, with very limited reported use of standardized instruments measuring occupational performance. In addition, there was also no report of evaluating occupational performance aided by the use of a conceptual framework or an in-house evaluation guideline. Use of the latter was reported by only one participant to assist the evaluation of capacity to prepare meals.

Our findings are similar to those described in previous research by Douglas et al. (2007) and Belchior, Korner-Bitensky, Holmes et al. (2015), who found that occupational therapists almost exclusively use non-standardized methods to evaluate occupational performance, with very low reported use of standardized testing. We were able to probe this practice pattern further using our qualitative methods. Our findings shed significant light on the issue of using standardized instruments to evaluate occupational performance. Using standardized performance-based testing was identified as essential by participants in at least two clinical scenarios: to screen for safety to drive and to contribute to evaluations of legal capacity. Participants also identified a need for such testing in situations when there are important consequences to the individual, such as independent living. There were clear efforts on the part of the participants to integrate standardized performance-based tests into their evaluations, to the extent that they use portions of tests that are too long to administer, or tests with incomplete psychometric data when the instrument otherwise fit their needs. The participants also described limited use of information the obtain from cognitive screening tests such as the MMSE and

MOCA and did not describe a pattern of reliance on these tools; for example, they use results of these tests from other professionals when possible, instead of completing the tests themselves.

The participants indicated that there is a need for them to perform both basic and in-depth evaluations of an occupational performance for individuals with cognitive impairments in their practice settings. Many of the reasons they receive referrals for evaluation is for prediction: prediction of the safety of an individual to remain at home, prediction of an individual's safety to drive, prediction of ability care of oneself and one's property when legal capacity is in question. The participants accordingly increase the complexity of non-standardized task simulations to explore the extent of a cognitive impairments on occupational performance or keep task simulations limited to focusing on specific problems if that is the sole purpose of the referral. Could it be possible that the participants are able to evaluate occupational performance and occupational capacity adequately using non-standardized observations alone? Are they able to complete an in-depth evaluation of the impact of the cognitive impairments on occupational performance using their current methods? Is the absence of other methods to support the prediction of the occupational capacity a problem, or does it merely reflect a preference on the part of clinicians? Our participants provided the answer to this question.

5.2 Objective 2: Knowledge and Tools Needs

The second objective of our study was to identify the knowledge and tool needs for occupational therapists to assess older adults with cognitive impairments. We begin by noting that participants from all settings identified the need for standardized, performance-based tests for evaluating occupational performance, particularly for IADL. They strongly identified a need for such tools when contributing to decisions of legal capacity, where there is a need for their

evaluation results to be understood by other professionals involved. The participants relied on these tools specially in situations that have profound consequences to the individuals, because they control for bias in their evaluation. However, these are not the only reasons behind the need for standardized testing identified by the participants. They note that the impact of cognitive function on occupational performance is difficult to assess via non-standardized task simulations. They describe this approach as a lengthy process involving multiple observations, with the end result often still too imprecise to generalize to other tasks and predict occupational capacity. Indeed, the participants acknowledged that some complex cognitive functions such as judgement cannot be captured using this method. They identify a need for standardized tests that provide a framework for evaluating the impact of complex cognitive functions on occupations, but at the same time, have specific requirements regarding the usability and accessibility of the tests.

To illustrate, the ADL Profile (Dutil et al., 1990) and the IADL Profile (Bottari et al., 2010) are examples of performance-based tests that measure the impact of impairments in executive function on individual's occupational performance. The ADL Profile allows the examiner to rate an individual's performance of four operations of executive functioning, namely, formulating a goal, making a plan to achieve the goal, carrying out the plan, and verifying the results, within a repertoire of 17 everyday tasks related to personal care, home and community activities (Dutil et al., 2017). Built on concepts from the previously developed ADL Profile, the IADL Profile measures an individual's performance the same four operations of executive functioning within an overarching complex everyday activity of preparing a hot meal at home for an unexpected guest (Bottari et al., 2010). Both the ADL and the IADL Profile rate the individual's performance of executive operations and the type of assistance the individual requires to accomplish them. Studies have been undertaken to explore the feasibility of using the

IADL Profile to evaluate healthy older individuals (Bier et al., 2016), and to explore it's use in the context of an evaluation of legal capacity (Blanchet et al., 2016). This is of particular significance as cognitive components related to executive functioning have been identified by occupational therapists as important predictors of occupational competency (Zur et al., 2013).

Tools such as the ADL Profile and IADL Profile thus appear promising for an in-depth evaluation of occupational performance of older adults with cognitive impairments, particularly as their psychometric properties continue to be developed for older adults. Participants in both of our interview settings identified these tests as providing an inspiring framework for their evaluations of older adults with cognitive impairments. However, both instruments require formal training sessions to administer, which was reported as a barrier to use by participants. In addition, the length of time required to administer the IADL Profile was also reported as a barrier by the participants in the community care settings, who are in the best position to administer the tool in the individual's home environment as required.

Some participants also praised the AMPS evaluation because it locates an individual's abilities on a continuum of motor and processing skills and predicts functional decline. Within the adult stroke population, Bernspang and Fisher (1995) developed a risk zone for functional decline based on where an individual's motor and processing skills falls in relation to cut off scores for each. Hartman et al. (1999) also found that 94% of older adults with and without major neurocognitive disorder (dementia) were correctly classified as needing assistance using the AMPS ADL process skills cut-off measures. Furthermore, within a wide range of adult diagnostic groups, including major neurocognitive disorder (dementia), Merritt (2011) confirmed that the measures for ADL motor and processing skills can be used as evidence of a client's need for assistance to live in the community .

Our participants clearly appreciate the evaluation framework provided by the AMPS. Elements of this test is seen in the clinical reasoning process they described for analysing non-standardized observations, such as observing a common difficulty in three tasks to predict how it will impact other areas of performance. However, as stated above, the participants find the AMPS too structured; they must choose from the 17 everyday tasks it offers, which may fall outside what an individual does in real life. Non-standardized task simulations are preferred because they are selected by the clinician based on relevance to the individual. Ideally, the participants would like to predict an individual's need for assistance using task simulations with the same precision offered by the AMPS. The AMPS also requires a five-day training course to administer (Merritt, 2011), which presents a barrier to use to our participants.

Evaluation guidelines and conceptual frameworks were also identified by participants as tools that could assist them in evaluating the impact of cognitive impairments on occupational performance. The participants did not give a specific example of a potential tool in the interviews, however, such as tool is exemplified by PRPP. This PRPP is a two-step evaluation system providing a conceptual framework for measuring an individual's level of independence in occupational performance, as well as their overall ability to process information (Steultjens et al., 2012). This system differs from standardized performance-based tests in that the individual and therapist can decide on which activities are most important to observe. The activity is then performed by the individual and rated against the criteria of the individual's usual performance. Moderate to excellent single rater and inter-rater reliability of the PRPP system has been found with community-dwelling individuals with major neurocognitive disorder (dementia). (Steultjens et al., 2012). Stigen et al. (2020) identified the PRPP as a tool that could be used by community-based occupational therapists to structure their observations of occupational

performance by older adults with cognitive impairments. In their study, this need for structure was identified by the community-care clinicians in their sample group. The PRPP would appear to have potential to meet the needs our participants as it can be used to evaluate the impact of cognitive impairments on the performance of activities or occupations chosen according to relevance to the individual. However, the PRPP also requires a five-day training course to learn, which again presents as a barrier to using the tool as described by our participants. It also does not address important aspects of administration and scoring, such as the degree to which the administrator can assist during the performance, and how this impacts the score.

This brief glance at existing tools in the literature suggest that some could potentially support the needs of our participants in performing in-depth evaluations of the impact of cognitive impairments on occupational performance. However, there were other factors unrelated to availability of tools that influence their clinical choices in this area of practice. Our participants consistently listed institutional factors such as time constraints, lack of access to paid days off for educational activities and lack of funding to attend educational activities as barriers to using these tools. In particular, the time it takes to administer a test was described as a barrier: the participants reported not having enough time available with any single patient to administer standardized performance-based tools such as the IADL Profile. As a result, it would appear that the participants requirements for accessibility and practicality in the workplace are the highest priority. Auger et al. (2006) identify the administration time and availability of a tool as practical aspects clinicians must consider when using a measurement tool in their work context. It would appear that the potentially useful tools described above also involve a high examiner burden for our participants. This results in the precarious situation they describe using portions

of standardized tests, or tests with missing psychometric properties for this population, because they are easy to access and can be completed in under 45 minutes.

5.3 Objective 3: The Importance of Knowledge Translation

Our findings for knowledge and tools needs suggest there may be a need for carefully considered strategies to move existing evidence into practice. To begin our reflection on knowledge translation strategies, we note that the participants in our study were able to clearly describe past activities which helped them to effectively integrate new knowledge and skills. Many of the participants had already found ways to acquire knowledge related to the two main areas of need they identified in this study: knowledge related to cognition in occupational performance and knowledge related to legal capacity. This was through formal courses and informal workshops given by research experts in the field. The participants described the value of interacting with content experts to integrate new knowledge, preferably on a regular basis to keep their knowledge up to date. Participants working in the specialized geriatric setting gave the example of attending regular lunchtime workshops with a content expert. They stressed the need for new knowledge to be presented in a way that speaks to them clinically, with useful theoretical concepts and opportunities to use the new knowledge in practice, such as analysing clinical vignettes.

These findings are consistent with theoretical literature regarding which interventions support the uptake of evidence-based practices by health care clinicians. Michie et al. (2008) reviewed the psychological literature for techniques that change individual behavior, at the same time linking them with causes, or determinants of the behavior. Each determinant was linked to change on the agreement of content experts. For example, the behavioral determinant of

"knowledge", meaning lack of knowledge, was linked to the change technique of "providing information related to behavior and outcomes", while the behavioral determinant of "skills", meaning lack of skills, was linked to various techniques including the "rehearsal of relevant skills" (Michie et al., 2008). According to this literature, it makes sense that our participants found courses providing knowledge on cognitive processes in occupation, coupled with group exercises requiring the application of the new knowledge through vignettes, to be effective in changing their practice.

Greenhalgh et al. (2005, p. 603) also supports tailoring the content of formal education session to the context of users when designing programs to disseminate new knowledge. Graham et al. (2006) describes dissemination as the spreading of existing knowledge to interested groups. While dissemination through formal courses has been described by some of our participants as effective in acquiring new knowledge related to cognition in occupational performance and legal capacity, this strategy alone clearly has not been effective for our participants to acquire all the knowledge and skills they need. For example, some of the participants have attended formal AMPS training, but they do not use this tool in clinical practice. It has been shown that formal courses alone are not enough to ensure that clinicians sustain new knowledge and skills in practice. Miller et al. (2004) found that while clinicians show initial gains in new knowledge and skills following formal training, the effects are short lived. Additional feedback and coaching are needed following formal training to ensure that the knowledge and skills are retained. Our participants in the specialized geriatric care setting indicated that in addition to receiving knowledge through formal courses, they had regular access to a research expert in their workplace, above what is offered in a formal course. This was particularly helpful to their integration of new skills into practice, as it provided continued

review of the new material and how to apply it. This level of interaction is typically not available to most clinicians and indicates a need to consider additional strategies that could work in most clinical settings if practice is to be changed.

Further consideration of strategies that address barriers related to the work context of the participants is also required if practice is to change. These strategies may also need to address the beliefs and attitudes of the participants themselves. Wilding (2011) study of behavior patterns among occupational therapists in acute care settings suggests that clinicians working in these setting are unconsciously subservient to financial and medical models that dominate these settings, to the extent that their clinical decision making toward solving the occupational issues of their patients is undermined. The participants in Wilding's (2011) study reported, above all else, a particular drive to meet a standard of seeing enough patients per day: for example, seeing less patients or taking time off in order to engage in overdue professional development overburdening colleagues. Though not part of our direct line of questioning in this study, the behaviors of our participants suggest they may share some of these unconscious beliefs about the value of occupational therapy. This includes behaviors such as accepting lack of paid time off, paying out of their own pockets for training and accepting time restrictions placed on them to fulfill their complex professional role within the institutions they work. Our participants clearly perceive that there are limitations in their practice settings to integrating new tools and knowledge that they have little control over. Given that they are required to perform in-depth evaluations of the impact of cognitive function on occupational performance, and moreover that their evaluations contribute to paramount decisions such as legal capacity, clinical supervisors, managers, and referral sources should be advocates in ensuring that these barriers related to time and resources for occupational therapy are addressed.

The integration of new knowledge into practice is indeed a complex undertaking involving individual clinicians, organizational factors, external factors (such as health care policy) and the characteristics of the new knowledge itself (Gotham, 2006; Greenhalgh et al., 2005). In terms of organizational factors, Greenhalgh et al. (2005) propose that changes in practice are more likely to be integrated when they are advocated for by management, when there is dedicated time and resources to implement them. Bennett et al. (2018) indicates that managers have a key role in creating the culture within an organization toward acquiring new knowledge and directing resources to achieve it. Lack of organizational support appears to be a barrier for our participants to integrating new tools and knowledge into practice, although we did not include management or clinical supervisors in our focus group discussions. We therefore do not know what their perspective is on the state of practice with regards to evaluating older adults with cognitive impairments, and their thoughts on how barriers to integrating new tools and knowledge could be addressed. Their perspective and collaboration would be essential to identifying how to address these barriers.

O'Neal and Manley (2007) further emphasize a collaborative approach to planned actions to for changing practice, emphasize that actions should be owned by all involved, and not generated by one individual. The authors stress the importance of identifying elements workplace that support planned actions to change practice, such as the presence of leadership to develop a common vision of practice change, and the presence of resources, such as skilled staff and a dedicated time commitment from all stakeholders, including management. O'Neal and Manley (2007) provide both a tool and a framework for identifying key enablers in the workplace that facilitate planned actions, as well as observable characteristics of successful action planning and expected consequences. Identifying such assets that support practice

change would be an important precursor to any plan to adopt any new tools or knowledge in the work settings of our participants.

Involvement of specific personnel within health-care organizations may also facilitate changes in practice. Greenhalgh et al. (2005) further describe social mechanisms that support the diffusion of new knowledge in the workplace. For example, individuals within organizations may influence the adoption of new knowledge by acting as opinion leaders or practice champions. Practice champions are key individuals in the workplace who support the new knowledge and work with peers towards adopting it into practice, while opinion leaders are individuals of influence in the work setting who may convince their peers to adopt new knowledge into practice depending on whether they support it (Greenhalgh et al., 2005; Ploeg et al., 2010). Both opinion leaders and practice champions can be trained to assist in changing practice and practice champions have been involved in adapting a new practice to the context of their workplace (Lozano et al., 2004; Ploeg et al., 2010). Involvement of opinion leaders and practice champions has been shown to produce more lasting changes in practice when combined with formal training than with formal training alone (Miller et al., 2004), and practice champions have been shown to improve clinician compliance with practice changes in an acute care setting (Campbell, 2008). As discussed above, some of our participants had the benefit of repeated interactions with research experts in their work settings. They described these experts as agents of change in their practice. Given that most clinicians do not have this level of interaction with research experts in their clinical settings, identifying and training opinion leaders or practice champions to function as agents of change may be a feasible solution to ensure that changes in practice occur and are sustained. However, before choosing any of the above approaches, the first step would be to assess all of the barriers and facilitators to changing practice behavior, in a

collaborative approach with clinicians, within the specific context of a clinical practice setting before selecting and implementing specific strategies such at this (French et al., 2012; Graham, et al, 2006) possible aided by the use of a tool such as Theoretical Domains Framework (French et al., 2012).

It is encouraging that our participants were already able to give vivid examples of activities that helped them change their practice behavior, and that their examples involved a mix of both formal and informal activities. In addition to interacting with experts in the field, our participants identified informal exchanges of knowledge with different groups in the workplace including their peers, students, other professionals. These activities helped them to respond to specific issues within their workplace and change their clinical behavior as needed. This was particularly exemplified when clinicians described working together to address new legislation regarding the activities of health professionals in the evaluation of individuals with neurocognitive disorders, proposed by Loi du Quebec 2009, chapitre 28. That our participants in this study appear to be motivated to change their practice, and willing to collaborate among themselves and with agents of change to achieve change is a promising sign that other identifying and implementing other strategies may be beneficial.

5.4 Facilitative Assessment Environments

Facilitative assessment environments were the final tool identified by the participants to assist them in evaluation older adults with cognitive impairments and represents a distinct entity. The previously described tools offer different ways of capturing the impact of an individual's cognitive impairment on occupational performance through methods that focus the evaluation of the individual's performance. This final tool directly addresses the contribution of the

environment in the assessment process, and the need for therapists to have choices in this domain as well. Skubik-Peplaski et al. (2012) highlight the importance of the physical environment in providing occupational therapy services, and advocate for clinicians to consider how the therapeutic environment impacts what can be accomplished with the individual. The authors propose a continuum of treatment environments for clinicians, each facilitating to different degrees interventions for impairments, activities limitations, or for participation restrictions. For example, therapists working at physical rehabilitation hospitals often have access to therapy gyms, which the authors identify as appropriate environments for interventions addressing impairments, such as reduced strength and balance. Therapy environments that include a bathroom or a kitchen suite can support interventions related to occupational performance. Access to more home-like therapeutic environments, such as an apartment-like suite, supports interventions that are truly occupation-based, such as performing a morning activity routine according to a schedule (Skubik-Peplaski et al., 2012). For the participants in our study working in in-patient hospital and rehabilitative settings, this type of home-like therapeutic environment is missing, and they report that this limits their evaluation of occupational performance. While Sjukbik-Pepliaski et al. advocate for such environments to address occupational issues, they report barriers to using them when they are available, including accessibility (due to their location within the building) and time constraints of the part of the clinicians' schedule. Though perhaps not an immediate solution to participants in our study due to the cost of re-allocating clinical space in a multi-disciplinary care centre, these types of treatment environments should be considered when designing clinical spaces for older adults who will be receiving occupational therapy services.

The needs of older adults with cognitive impairments should also be considered when designing therapeutic spaces. Torrington (2006) shows that attention to the physical design of living spaces for older individuals can positively impact their well-being. In particular, there is a positive impact when the space supports activity, and a negative impact when activity is restricted by safety regulations. Torrington (2006) also stresses that the physical space must match the activity or occupation performed, as it can be easily misunderstood by individuals with cognitive impairments. For occupation-based assessments, this would support the use of smaller apartment-like space closer to residential size than a kitchen located within a multi-purpose therapy space. However, close attention would need to be paid to other aspects of the design such as lighting and the intrusion of institutional technology into home-like spaces, which could be potential ambiguity for patients regarding what type of activities takes place in the space (Torrington, 2006).

The integration of home-like environments tailored to assessing and treating individuals with cognitive impairments into institutional spaces is an exciting possibility. One could imagine an ideal scenario of a single patient room designed to resemble a home-like apartment on every floor of in-patient clinical settings where clinicians are required to address autonomy and safety concerns. In reality, the reconfiguration of existing physical spaces is a time consuming and expensive endeavor (Torrington, 2006) and would involve the agreement of many people involved that use the space. When possible, partnerships to share existing spaces to support the evaluation of occupational issues and trial of solutions should be explored. As is the case when considering the creation and design of tools such as standardized tests to evaluate occupation performance, the targeted users of assessment environments should ideally be consulted regarding the utility of their design. Practicing occupational therapists should be

consulted during process of creating new spaces where they are expected to provide evaluation and interventions in order for them to be used optimally.

Though not identified as a potential tool for use in clinical practice by our participants, virtual environments may become a resource for future occupational therapy evaluations of older adults with cognitive impairments. Virtual environments are a promising rehabilitation tool because they offer a low cost means for clinician to observe, evaluate and treat their clients in environments that can be manipulated to optimize achievement of their rehabilitation goals (Levin, 2011). Research now exists focused on the use of virtual environments to simulate complex scenarios that are difficult to reproduce in everyday life, such as following an evacuation route to escape from a fire in a building, with measures of functional ability using these virtual scenarios showing sensitivity in detecting errors that differentiate mild and major neurocognitive disorders (dementia) (Tarnanas et al., 2013). However, Flynn et al. (2003) note that it is unclear if occupational performance in a virtual environment by individuals with cognitive impairments would be the same as their performance in the real world. These authors stress the need to validate a virtual performance with real world performances. As in any evaluation of occupational performance, attention must be paid to the type of assistance and cueing that is offered in the virtual environment. As this technology develops, it would be important to solicit input from occupational therapists on the design of these environments for use in the evaluation and treatment of occupational issues related to cognitive impairments in order to ensure that virtual testing reflects what the individual is able to do in everyday life.

CHAPTER VI CONCLUSIONS AND FUTURE WORK

This project focused on the current practice of occupational therapists for evaluating older adults with cognitive impairments, and their current perceptions of knowledge and tools needed to support them in. Our findings indicate that there is a need for improvement in the evaluation process in order for occupational therapists to optimize their capacity to understand the impacts of cognitive impairments on occupational performance with more confidence and rigor. It could also include further reflection on the occupational therapy curriculum in this area. This would ultimately help occupational therapists to provide comprehensive interventions for older adults with cognitive impairements, the importance of which have been highlighted in the literature. In addition, our findings highlight that occupational therapists have important needs for knowledge and tools in order to conduct these evaluations. This includes knowledge related to cognition and occupational performance, performance-based tests and conceptual frameworks for evaluation. All have the potential to improve the capacity of clinicians to understand the impact of cognitive function on occupational performance.

While there is a continued need for the development of psychometric properties for existing performance-based tools to evaluate cognitively impaired older adults, our results suggest there is also a need for knowledge translation strategies designed to move existing tools into practice. Our participants do not use existing tools, despite expressing a wish to do so in certain practice situations. Any action to integrate new tools and knowledge into practice should involve a collaborative approach between clinicians, management, and research experts in which planning to change practice is owned by all. Stragtegies such training pratice champions in workplace settings may help to integrate existing tools, but only after an in-depth analysis of the barriers and facilitators to their intergration particular to each setting in undertaken.

Further steps related to this research project could involve performing a more comprehensive review of performance-based tools that would meet the needs of the participants as well as further investigating the barriers and facilitators to the use of standardized evaluation instruments in rehabilitation and occupational therapy. In addition, future research could explore needs of occupational therapists other than those related to knowledge and tools. This would require exploring other determinants of practice in greater depth, including those such as sense of personal effectiveness among clinicians, practice routines and social influences on practice. This may lead to the discovery of other needs that could improve practice, as well as additional barriers and facilitators to change that could be addressed using other strategies than those proposed in this study. In order to explore the possibility of additional strategies to change practice, achieving an in-depth understanding of these barriers and facilitators is important. This could be achieved by obtaining the perceptions other stakeholders, such as supervisors and managers, and employing other methods of data collecting such as in-depth individual interviews. An additional step may also include engaging clinicians in a reflective process, either using group or individual methods, to help them understand more in depth what contributes to their decision-making regarding their evaluation process.

Another element emerging from this study that could be explored in a further research project would be the clinical reasoning process used by occupational therapists with regards to the principle of hierarchy of difficulty in activities used to predict occupational capacity. Further research could involve exploring and identifying the contribution of specific types of clinical reasoning to this principle, and how the use specific types of clinical reasoning contributes to choosing not to use standardized measurement instruments in the evaluation process.

Study strengths and limitations

A significant strength of our study relates to our use of qualitative methods to answer complex questions related to clinical practice. Our results shed light on certain discrepancies between the recommendations of the literature by comparing the data collected with available frames of reference and practice guidelines. Our methods allowed us to probe the clinical reasoning of occupational therapists in this area of practice and subsequently obtain a more comprehensive understanding of practice gaps and how they might be addressed than previous research has provided. In addition, our methods allowed us to identify common elements within an occupational therapy process for evaluating of older adults with cognitive impairments, as well as common knowledge and tools needs for clinicians practicing in multiple in-patient and community care settings in a urban centre in Québec.

One of the limitations to our study remains the extent to which we can generalize the results of this study to other occupational therapists. We recruited occupational therapists from one geographic location in Québec. Although we achieved data saturation within our representative sample of clinicians who evaluate occupational performance for older adults with cognitive impairments in different practice contexts, the extent to which we can apply the results to therapists practicing in other practice settings within the province, in other provinces of Canada, or in other countries may be limited. For example, our participants worked in predominantly French-speaking clinical environments. This may result in some of the choices they make for evaluation tools to differ from therapists working in environments where French is not the primary language of communication. We also note that due to global pandemic circumstances, we were not able to validate our data with the original participants in time for the preparation of this thesis, which may have implications for the accuracy of our results.

A further limitation of this study lies within the breadth of our inquiry. We limited our second research question to identifying the tools and knowledge needs of occupational therapists. As previously discussed in the section above, it would have been informative to take a broader perspective to understand if occupational therapists have further other needs for practice improvement than those related to tools and knowledge. This might include needs related to the work environment as well as their sense of personal effectiveness and practice habits. A related limitation of this study lies within our choice of methods. While the focus groups did generate many perceptions regarding our specific topic of interest, the limited time to explore the opinions of each participant restricted the breadth of information we obtained regarding all the factors influencing clinical choice of assessment methods, as well as their perceived and barriers and facilitators to practice improvement. As described above, using in-depth individual interviews with clinicians, potentially using a theoretical framework to guide questioning, would provide an enhanced venue to explore all factors influencing clinical choice. Our sampling also limited the achievement of a complete understanding of the barriers and facilitators to practice improvement, in that it was limited to clinicians only. Interviewing managers and clinical supervisors could provide valuable additional perspectives regarding barriers to integrating new knowledge and tools in the workplace and potential solutions. Thus, while we took important preliminary steps to improving occupational therapy practice, we remain with a need to further understand the clinical choices occupational therapists make to evaluate older adults with cognitive impairments, as well as the barriers and facilitators to practice improvement.

REFERENCES

Allen, C. K., Austin, S. L., David, S. K., Earhart, C. A., McCraith, D. B., & Riska-Williams, L. (2007). *Allen Cognitive Level Screen-5 (ACLS-5) and Large Allen Cognitive Level Screen-5 (LACLS-5)*. Camarillo, CA: ACLS and LACLS Committee.

Alzheimer Society of Canada (2016). Prevalence and Monetary Costs of Dementia in Canada. Alzheimer Society of Canada.

American Occupational Therapy Association (2014). Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy*. *68* (2), Supplement 1.

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.

Andersen, C. K., Wittrup-Jensen, K. U., Lolk, A., Andersen, K., & Kragh-Sørensen, P. (2004). Ability to perform activities of daily living is the main factor affecting quality of life in patients with dementia. *Health and quality of life outcomes*, *2*(1), 1-7.

Auger, C., Demers, L., & Swaine, B. (2006). Making sense of pragmatic criteria for the selection of geriatric rehabilitation measurement tools. *Archives of gerontology and geriatrics*, *43*(1), 65-83.

Baltes, P. B., & Singer, T. (2001). Plasticity and the ageing mind: An exemplar of the bio-cultural orchestration of brain and behaviour. *European Review*, *9*(1), 59-76.

Baum, C., & Edwards, D. F. (1993). Cognitive performance in senile dementia of the Alzheimer's type: The Kitchen Task Assessment. *American Journal of Occupational Therapy*, *47*(5), 431-436.

Bédirian, V. (2008). *L'aptitude à gérer ses biens chez les personnes âgées: élaboration d'un outil fonctionnel et étude des variables sociodémographiques et neuropsychologiques associées.* [Doctoral dissertation, Université du Québec à Montréal] https://archipel.uqam.ca/1969/1/D1745.pdf

Belchior, P., Korner-Bitensky, N., Holmes, M., & Robert, A. (2015). Identification and assessment of functional performance in mild cognitive impairment: a survey of occupational therapy practices. *Aust Occup Ther J*, *62*(3), 187-196. https://doi.org/10.1111/1440-1630.12201

Belchior, P., Holmes, M., Bier, N., Bottari, C., Mazer, B., Robert, A., & Kaur, N. (2015). Performance-based tools for assessing functional performance in individuals with mild cognitive impairment. *The Open Journal of Occupational Therapy*, *3*(3), 3.

Bennett, S., Laver, K., & Clemson, L. (2018). Progressing knowledge translation in occupational therapy. *Australian occupational therapy journal*, *65*(2), 156-160.

Bennett, S., Laver, K., Voigt-Radloff, S., Letts, L., Clemson, L., Graff, M., Wiseman, J., & Gitlin, L. (2019). Occupational therapy for people with dementia and their family carers provided at home: a systematic review and meta-analysis. *BMJ Open*, *9*(11), e026308. https://doi.org/10.1136/bmjopen-2018-026308

Bernspang, B., & Fisher, A. G. (1995). Differences between persons with right or left cerebral vascular accident on the Assessment of Motor and Process Skills. *Arch Phys Med Rehabil*, *76*(12), 1144-1151. https://doi.org/10.1016/s0003-9993(95)80124-3

Bier, N., Belchior Pda, C., Paquette, G., Beauchemin, E., Lacasse-Champagne, A., Messier, C., Pellerin, M. L., Petit, M., Mioshi, E., & Bottari, C. (2016). The Instrumental Activity of Daily Living Profile in Aging: A Feasibility Study. *J Alzheimers Dis*, *52*(4), 1361-1371. https://doi.org/10.3233/JAD-150957

Bill 21, *An Act to Amend the Professional Code and other legislative provisions in the field of mental health and human relations, 2009*, 1st Sess., 39th Leg, 2009 (assented to 19 June 2009), SA 2009, c28. Retrieved from http://www2.publicationsduquebec.gouv.qc.ca

Blanchet, M., Huynh, T., Giroux, D., & Bottari, C. (2016). Contribution of occupational therapy to the assessment of competence: A case study. *Can J Occup Ther*, *83*(3), 154-165. https://doi.org/10.1177/0008417416644272 ([L'evaluation en ergotherapie pour contribuer a documenter l'aptitude : etude de cas: Contribution of occupational therapy to the assessment of competence: A case study].)

Bottari, C. L., Dassa, C., Rainville, C. M., & Dutil, E. (2010). The IADL profile: development, content validity, intra- and interrater agreement. *Can J Occup Ther*, *77*(2), 90-100. https://doi.org/10.2182/cjot.2010.77.2.5

Brown, T., Joliffe, L., & Fielding, L. (2014). Is the Mini Mental Status Examination (MMSE) Associated with Inpatients' Functional Performance? *Physical & Occupational Therapy in Geriatrics*, *32*(3), 228-240.

Burns, T., Mortimer, J. A., & Merchak, P. (1994). Cognitive Performance Test: a new approach to functional assessment in Alzheimer's disease. *Journal of geriatric psychiatry and neurology*, *7*(1), 46-54.

Canadian Association of Occupational Therapists. (1997a). *Enabling Occupation: An occupational therapy perspective*. CAOT Publications ACE.

Campbell, J. (2008). The effect of nurse champions on compliance with Keystone Intensive Care Unit Sepsis-screening protocol. *Critical care nursing quarterly*, *31*(3), 251-269.

Campbell, N. L., Unverzagt, F., LaMantia, M. A., Khan, B. A., & Boustani, M. A. (2013). Risk factors for the progression of mild cognitive impairment to dementia. *Clinics in geriatric medicine*, *29*(4), 873-893.

Caracciolo, B., Palmer, K., Monastero, R., Winblad, B., Backman, L., & Fratiglioni, L. (2008). Occurrence of cognitive impairment and dementia in the community: a 9-year-long prospective study. *Neurology*, *70*(19 Pt 2), 1778-1785. https://doi.org/10.1212/01.wnl.0000288180.21984.cb

Colarusso, R. P., & Hammill, D. D. (1972). *Motor-free visual perception test*. Academic Therapy Pub.

Denzin, N. K., & Lincoln, Y. S. (Eds.). (2000a). *Handbook of qualitative research* (2nd ed.). SAGE.

Douglas, A., Letts, L., & Liu, L. (2008). Review of cognitive assessments for older adults. *Physical & Occupational Therapy in Geriatrics*, *26*(4), 13-43.

Douglas, A., Liu, L., Warren, S., & Hopper, T. (2007). Cognitive assessments for older adults: which ones are used by Canadian therapists and why. *Can J Occup Ther*, *74*(5), 370-381. https://doi.org/10.2182/cjot.07.010

Dutil, E., Bottari, C., & Auger, C. (2017). Test-Retest Reliability of a Measure of Independence in Everyday Activities: The ADL Profile. *Occup Ther Int*, *2017*, 3014579. https://doi.org/10.1155/2017/3014579

Dutil, E., Forget, A., Vanier, M., & Gaudreault, C. (1990). Development of the ADL Profile. *Occup Ther Health Care*, *7*(1), 7-22. https://doi.org/10.1080/J003v07n01_03

Farias, S. T., Harrell, E., Neumann, C., & Houtz, A. (2003). The relationship between neuropsychological performance and daily functioning in individuals with Alzheimer's disease: ecological validity of neuropsychological tests. *Arch Clin Neuropsychol*, *18*(6), 655-672. https://www.ncbi.nlm.nih.gov/pubmed/14591439

Farrell-Holtan, J. (1990). The Occupational Therapist's Role in Interdisciplinary Team Assessment of the Cognitively Impaired Elderly. *Occupational Therapy in Mental Health*, *10*(3), 53-63. https://doi.org/10.1300/J004v10n03_03

Filstead, W. J. (1979). Qualitative methods: A needed perspective in evaluation research. In T. D. Cook & C. S. Reichardt (Eds.), *Qualitative and quantitative methods in evaluation research* (pp. 33–48). SAGE.

Fisher, A. G. (2006a). Assessment of Motor and Process Skills: Vol. 1. Development, standardization, and administration manual (6th ed.). Three Star Press.

Fisher, A. G. (2006b). Assessment of Motor and Process Skills: Vol.2. User manual (6th ed.). Three Star Press.

Fleming, J. M., Strong, J., & Ashton, R. (1996). Self-awareness of deficits in adults with traumatic brain injury: How best to measure? *Brain injury*, *10*(1), 1-16.

Flynn, D., Van Schaik, P., Blackman, T., Femcott, C., Hobbs, B., & Calderon, C. (2003). Developing a virtual reality–based methodology for people with dementia: a feasibility study. *CyberPsychology & Behavior*, *6*(6), 591-611.

Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). "Mini-mental state". A practical method for grading the cognitive state of patients for the clinician. *J Psychiatr Res*, *12*(3), 189-198. https://doi.org/10.1016/0022-3956(75)90026-6

French, S. D., Green, S. E., O'Connor, D. A., McKenzie, J. E., Francis, J. J., Michie, S., . . . Grimshaw, J. M. (2012). Developing theory-informed behaviour change interventions to implement evidence into practice: a systematic approach using the Theoretical Domains Framework. *Implement Sci, 7*, 38. doi:10.1186/1748-5908-7-38

Freund, A. M., & Baltes, P. B. (2002). Life-management strategies of selection, optimization, and compensation: measurement by self-report and construct validity. *J Pers Soc Psychol*, *82*(4), 642-662. https://www.ncbi.nlm.nih.gov/pubmed/11999929

Ganguli, M., Blacker, D., Blazer, D. G., Grant, I., Jeste, D. V., Paulsen, J. S., Petersen, R. C., & Sachdev, P. S. (2011). Classification of neurocognitive disorders in DSM-5: a work in progress. In: Elsevier.

Gauthier, L., Dehaut, F., & Joanette, Y. (1989). The bells test: a quantitative and qualitative test for visual neglect. *International journal of clinical neuropsychology*, *11*(2), 49-54.

Geneau, D. & Taillefer, D. (1996). Cognitive Assessment Scale for the Elderly (CASE). http://www.sepec.ca/case.html

Geneau, D. & Taillefuer, D. (1996). *Le «Protocole d'Examen Cognitif de la Personne Agée – Version Révisée » (PECPA-2r) : Normalisation pare groups d'age et antécédents éducationnels chez des sujets Québécois francophones*. Allocuation présentéé au 2ième Collloque de Psychogériatrie du C.C.F.P., St. Hyacinthe Québec.

Gill, D. P., Hubbard, R. A., Koepsell, T. D., Borrie, M. J., Petrella, R. J., Knopman, D. S., & Kukull, W. A. (2013). Differences in rate of functional decline across three dementia types. *Alzheimer's & Dementia*, *9*(5), S63-S71.

Gitlin, L. N., Schinfeld, S., Winter, L., Corcoran, M., Boyce, A., & Hauck, W. (2002). Evaluating home environments of persons with dementia: Interrater reliability and validity of the Home Environmental Assessment Protocol (HEAP). *Disability and rehabilitation*, *24*(1-3), 59-71.

Goh, J. O., An, Y., & Resnick, S. M. (2012). Differential trajectories of age-related changes in components of executive and memory processes. *Psychol Aging*, *27*(3), 707-719. https://doi.org/10.1037/a0026715

Gotham, H. J. (2006). Advancing the implementation of evidence-based practices into clinical practice: how do we get there from here? *Professional Psychology: Research and Practice*, *37*(6), 606.

Government of Québec (2012). Bill 21: Shared professional skills in mental health and human relations: The People First. Act to amend the Professional Code and other legislative provisions in the field of mental health and human relations. Explanatory Guide: L'Office des professions du Québec.

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: time for a map? *Journal of continuing education in the health professions*, *26*(1), 13-24.

Green, J., & Thorogood, N. (2014). *Qualitative methods for health research*. (Third edition) SAGE

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., Kyriakidou, O., & Peacock, R. (2005). Storylines of research in diffusion of innovation: a meta-narrative approach to systematic review. *Social science & medicine*, *61*(2), 417-430.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). SAGE.

Hartigan, I. (2007). A comparative review of the Katz ADL and the Barthel Index in assessing the activities of daily living of older people. *International journal of older people nursing*, *2*(3), 204-212.

Hartman-Maeir, A., Katz, N., & Baum, C. M. (2009). Cognitive Functional Evaluation (CFE) Process for Individuals with Suspected Cognitive Disabilities. *Occup Ther Health Care*, *23*(1), 1-23. https://doi.org/10.1080/07380570802455516

Hedden, T., & Gabrieli, J. D. (2004). Insights into the ageing mind: a view from cognitive neuroscience. *Nature reviews neuroscience*, *5*(2), 87-96.

Holm, M. B., Rogers, J. C., & Hemphill-Pearson, B. (2008). The performance assessment of self-care skills (PASS). *Assessments in occupational therapy mental health*, *2*, 101-110.

Jekel, K., Damian, M., Wattmo, C., Hausner, L., Bullock, R., Connelly, P. J., Dubois, B., Eriksdotter, M., Ewers, M., Graessel, E., Kramberger, M. G., Law, E., Mecocci, P., Molinuevo, J. L., Nygard, L., Olde-Rikkert, M. G., Orgogozo, J. M., Pasquier, F., Peres, K., Salmon, E., Sikkes, S. A., Sobow, T., Spiegel, R., Tsolaki, M., Winblad, B., & Frolich, L. (2015). Mild cognitive impairment and deficits in instrumental activities of

daily living: a systematic review. *Alzheimers Res Ther*, *7*(1), 17. https://doi.org/10.1186/s13195-015-0099-0

Jensen, L., & Padilla, R. (2017). Effectiveness of Environment-Based Interventions That Address Behavior, Perception, and Falls in People With Alzheimer's Disease and Related Major Neurocognitive Disorders: A Systematic Review. *Am J Occup Ther*, *71*(5), 7105180030p7105180031-7105180030p7105180010. https://doi.org/10.5014/ajot.2017.027409

Judge, K.S., & Dawson, N.T. (2017). Cognition. In B. R., Bonder & V. Dal Bello-Haas (4th edition ed.) *Functional performance in older adults*. Davis.

Kiernan, R. J., Mueller, J., Langston, J. W., & Van Dyke, C. (1987). The Neurobehavioral Cognitive Status Examination: A brief but differentiated approach to cognitive assessment. *Annals of internal medicine*, *107*(4), 481-485.

Kirkwood, T. B. (2005). Understanding the odd science of aging. *Cell*, *120*(4), 437-447. https://doi.org/10.1016/j.cell.2005.01.027

Knight, C., Alderman, N., & Burgess, P. W. (2002). Development of a simplified version of the multiple errands test for use in hospital settings. *Neuropsychological Rehabilitation*, *12*(3), 231-255.

Krueger, R. A., & Casey, M. A. (2015). *Focus groups : a practical guide for applied research* (5th edition. ed.). SAGE.

Law, M., Baptiste, S., Carswell, A., McColl, M.A., Polatajko, H., & Pollock, N. (2005). *Canadian occupational performance measure* (4th ed.). CAOT Publications ACE

Law, M., Cooper, B., Strong, S., Stewart, D., Rigby, P., & Letts, L. (1996). The person-environment-occupation model: A transactive approach to occupational performance. *Canadian journal of occupational therapy*, *63*(1), 9-23.

Levin, M. F. (2011). Can virtual reality offer enriched environments for rehabilitation? *Expert Rev Neurother*, *11*(2), 153-155. https://doi.org/10.1586/ern.10.201

Livingston, G., Kelly, L., Lewis-Holmes, E., Baio, G., Morris, S., Patel, N., Omar, R. Z., Katona, C., & Cooper, C. (2014). Non-pharmacological interventions for agitation in dementia: systematic review of randomised controlled trials. *Br J Psychiatry*, *205*(6), 436-442. https://doi.org/10.1192/bjp.bp.113.141119

Lozano, P., Finkelstein, J. A., Carey, V. J., Wagner, E. H., Inui, T. S., Fuhlbrigge, A. L., Soumerai, S. B., Sullivan, S. D., Weiss, S. T., & Weiss, K. B. (2004). A multisite randomized trial of the effects of physician education and organizational change in chronic-asthma care: health outcomes of the Pediatric Asthma Care Patient Outcomes Research Team II Study. *Archives of pediatrics & adolescent medicine*, *158*(9), 875-883.

Marengoni, A., Angleman, S., Melis, R., Mangialasche, F., Karp, A., Garmen, A., Meinow, B., & Fratiglioni, L. (2011). Aging with multimorbidity: a systematic review of the literature. *Ageing Res Rev*, *10*(4), 430-439. https://doi.org/10.1016/j.arr.2011.03.003

Martyr, A., & Clare, L. (2012). Executive function and activities of daily living in Alzheimer's disease: a correlational meta-analysis. *Dement Geriatr Cogn Disord*, *33*(2-3), 189-203. https://doi.org/10.1159/000338233

McLean, A.M. & Vancouver Coastal Health, Occupational Therapy (2011, revised 2013). *An OT Approach to Evaluation of Cognition/Perception… for clients from adolescents to old age, from acute care to long term supports.* Revised version unpublished; original version. https://www.academia.edu/6656628/Occupation_Based_Evaluation_of_Cognition_Perception

McKhann, G. M., Knopman, D. S., Chertkow, H., Hyman, B. T., Jack, C. R., Jr., Kawas, C. H., Klunk, W. E., Koroshetz, W. J., Manly, J. J., Mayeux, R., Mohs, R. C., Morris, J. C., Rossor, M. N., Scheltens, P., Carrillo, M. C., Thies, B., Weintraub, S., & Phelps, C. H. (2011). The diagnosis of dementia due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimers Dement*, *7*(3), 263-269. https://doi.org/10.1016/j.jalz.2011.03.005

McLaren, A. N., Lamantia, M. A., & Callahan, C. M. (2013). Systematic review of non-pharmacologic interventions to delay functional decline in community-dwelling patients with dementia. *Aging Ment Health*, *17*(6), 655-666. https://doi.org/10.1080/13607863.2013.781121

Merritt, B. K. (2011). Validity of using the Assessment of Motor and Process Skills to determine the need for assistance. *Am J Occup Ther*, *65*(6), 643-650. https://doi.org/10.5014/ajot.2011.000547

Michel, J.-P., & Sadana, R. (2017). "Healthy aging" concepts and measures. *Journal of the American Medical Directors Association*, *18*(6), 460-464.

Michie, S., Johnston, M., Francis, J., Hardeman, W., & Eccles, M. (2008). From theory to intervention: mapping theoretically derived behavioural determinants to behaviour change techniques. *Applied psychology*, *57*(4), 660-680.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis : a methods sourcebook* (Third edition. ed.). SAGE.

Miller, W. R., Yahne, C. E., Moyers, T. B., Martinez, J., & Pirritano, M. (2004). A randomized trial of methods to help clinicians learn motivational interviewing. *Journal of consulting and Clinical Psychology*, *72*(6), 1050.

Nasreddine, Z. S., Phillips, N. A., Bédirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J. L., & Chertkow, H. (2005). The Montreal Cognitive Assessment, MoCA: a brief screening tool for mild cognitive impairment. *Journal of the American Geriatrics Society*, *53*(4), 695-699.

Njegovan, V., Man-Son-Hing, M., Mitchell, S. L., & Molnar, F. J. (2001). The hierarchy of functional loss associated with cognitive decline in older persons. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, *56*(10), M638-M643.

Nygård, L. (2003). Instrumental activities of daily living: a stepping-stone towards Alzheimer's disease diagnosis in subjects with mild cognitive impairment? *Acta Neurologica Scandinavica*, *107*, 42-46.

O'Neal, H., & Manley, K. (2007). Action planning: making change happen in clinical practice. *Nurs Stand*, *21*(35), 35-39. https://doi.org/10.7748/ns2007.05.21.35.35.c4553

O'Connor, C., Clemson, L., Brodaty, H., Jeon, Y., Mioshi, E., & Gitlin, L. (2014). Use of the Tailored Activities Program to reduce neuropsychiatric behaviors in dementia: an Australian protocol for a randomized trial to evaluate its effectiveness. *International psychogeriatrics/IPA*, *26*(5), 857.

Office des professions du Québec (2013). *Loi modifiant le Code des professions et d'autres dispositions législatives dans le domaine de la santé mentale et des relations humaines,* Explanatory guide. Retrieved from http://www.oeq.org/userfiles/File/Publications/Doc_professionnels/Guide_explicatif_decembre_2013.pdf

Ordre des ergothérapeutes de Québec (2016). *Processus décisionnel soutenant l'évaluation en ergothérapie d'adultes et d'ainés présentent des incapacités cognitives ou perceptuelles.* Retrieved from: https://www.oeq.org/DATA/NORME/44~v~oeq_processusdecisionnel_cognitif_2016.pdf

Palmer, K., Wang, H. X., Backman, L., Winblad, B., & Fratiglioni, L. (2002). Differential evolution of cognitive impairment in nondemented older persons: results from the Kungsholmen Project. *Am J Psychiatry*, *159*(3), 436-442. https://doi.org/10.1176/appi.ajp.159.3.436

Patton, M. Q. (2007). Sampling, qualitative (purposive). *The blackwell encyclopedia of sociology.*

Petersen, R. C. (2004). Mild cognitive impairment as a diagnostic entity. *J Intern Med*, *256*(3), 183-194. https://doi.org/10.1111/j.1365-2796.2004.01388.x

Petersen, R. C., Caracciolo, B., Brayne, C., Gauthier, S., Jelic, V., & Fratiglioni, L. (2014). Mild cognitive impairment: a concept in evolution. *J Intern Med*, *275*(3), 214-228. https://doi.org/10.1111/joim.12190

Piersol, C. V., Jensen, L., Lieberman, D., & Arbesman, M. (2018). Occupational Therapy Interventions for People With Alzheimer's Disease. *Am J Occup Ther*, *72*(1),

7201390010p7201390011-7201390010p7201390016. https://doi.org/10.5014/ajot.2018.721001

Ploeg, J., Skelly, J., Rowan, M., Edwards, N., Davies, B., Grinspun, D., Bajnok, I., & Downey, A. (2010). The role of nursing best practice champions in diffusing practice guidelines: a mixed methods study. *Worldviews on Evidence-Based Nursing*, *7*(4), 238-251.

Polatajko, H.j., Townsen, E.A., & Craik, J. (2007). Canadian Model of Occupational Performance and Engagement (CMOP-E). In E. A. Townsend & H.J. Polatajko, *Enabling Occupation II: Advancing an occupational therapy vision of health, well- being & justice through occupation.* CAOT Publications ACE.

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of counseling psychology*, *52*(2), 126.

Rahja, M., Comans, T., Clemson, L., Crotty, M., & Laver, K. (2018). Are there missed opportunities for occupational therapy for people with dementia? An audit of practice in Australia. *Aust Occup Ther J*, *65*(6), 565-574. https://doi.org/10.1111/1440-1630.12514

Riediger, M., Freund, A. M., & Baltes, P. B. (2005). Managing life through personal goals: intergoal facilitation and intensity of goal pursuit in younger and older adulthood. *J Gerontol B Psychol Sci Soc Sci*, *60*(2), P84-91. https://doi.org/10.1093/geronb/60.2.p84

Robertson, I. H., Ward, T., Ridgeway, V., & Nimmo-Smith, I. (1996). The structure of normal human attention: The Test of Everyday Attention. *Journal of the International Neuropsychological society*, *2*(6), 525-534.

Robnett, R. H., Hopkins, V., & Kimball, J. G. (2003). The SAFE AT HOME: A quick home safety assessment. *Physical & Occupational Therapy in Geriatrics*, *20*(3-4), 77-101.

Sandelowski, M. (2000). Whatever happened to qualitative description? *Res Nurs Health*, *23*(4), 334-340. https://doi.org/10.1002/1098-240x(200008)23:4<334::aid-nur9>3.0.co;2-g

Savva, G. M., Wharton, S. B., Ince, P. G., Forster, G., Matthews, F. E., Brayne, C., Medical Research Council Cognitive, F., & Ageing, S. (2009). Age, neuropathology, and dementia. *N Engl J Med*, *360*(22), 2302-2309. https://doi.org/10.1056/NEJMoa0806142

Scott, I., Cooper, C., Leverton, M., Burton, A., Beresford-Dent, J., Rockwood, K., Butler, L., & Rapaport, P. (2019). Effects of nonpharmacological interventions on functioning of people living with dementia at home: A systematic review of randomised controlled trials. *Int J Geriatr Psychiatry*, *34*(10), 1386-1402. https://doi.org/10.1002/gps.5127

Sehl, M. E., & Yates, F. E. (2001). Kinetics of human aging: I. Rates of senescence between ages 30 and 70 years in healthy people. *J Gerontol A Biol Sci Med Sci*, *56*(5), B198-208. https://doi.org/10.1093/gerona/56.5.b198

Skubik-Peplaski, C., Rowles, G. D., & Hunter, E. G. (2012). Toward a physical environmental continuum for occupational intervention in a rehabilitation hospital. *Occupational therapy in health care*, *26*(1), 33-47.

Spaniol, J., Madden, D. J., & Voss, A. (2006). A diffusion model analysis of adult age differences in episodic and semantic long-term memory retrieval. *J Exp Psychol Learn Mem Cogn*, *32*(1), 101-117. https://doi.org/10.1037/0278-7393.32.1.101

Steultjens, E. M., Voigt-Radloff, S., Leonhart, R., & Graff, M. J. (2012). Reliability of the Perceive, Recall, Plan, and Perform (PRPP) assessment in community-dwelling dementia patients: test consistency and inter-rater agreement. *Int Psychogeriatr*, *24*(4), 659-665. https://doi.org/10.1017/S1041610211002249

Stigen, L., Bjørk, E., & Lund, A. (2020). The power of observation. Occupational therapists' descriptions of doing observations of people with cognitive impairments in the context of community practice. *Scandinavian Journal of Occupational Therapy*, 1-13.

Tarnanas, I., Schlee, W., Tsolaki, M., Muri, R., Mosimann, U., & Nef, T. (2013). Ecological validity of virtual reality daily living activities screening for early dementia: longitudinal study. *JMIR Serious Games*, *1*(1), e1. https://doi.org/10.2196/games.2778

Tombaugh, T. N. (2004). Trail Making Test A and B: normative data stratified by age and education. *Arch Clin Neuropsychol*, *19*(2), 203-214. https://doi.org/10.1016/S0887-6177(03)00039-8

Townsend, E.A, & Polatajko, H.J. (2013). *Enabling Occupation II : Advancing an occupational therapy vision for health, well-being & justice through occupation.* (Second edition. Ed). CAOT Publications ACE.

Torrington, J. (2006). What has architecture got to do with dementia care?: Explorations of the relationship between quality of life and building design in two EQUAL projects. *Quality in Ageing and Older Adults*.

Verhaeghen, P., Steitz, D. W., Sliwinski, M. J., & Cerella, J. (2003). Aging and dual-task performance: a meta-analysis. *Psychol Aging*, *18*(3), 443-460. https://doi.org/10.1037/0882-7974.18.3.443

Wade, D. T. (1992). Measurement in neurological rehabilitation. *Current opinion in neurology and neurosurgery*, *5*(5), 682-686.

Wall, C. d., Wilson, B. A., & Baddeley, A. D. (1994). The Extended Rivermead Behavioural Memory Test: A measure of everyday memory performance in normal adults. *Memory*, *2*(2), 149-166.

Wesson, J., Clemson, L., Brodaty, H., & Reppermund, S. (2016). Estimating functional cognition in older adults using observational assessments of task performance in complex everyday

activities: A systematic review and evaluation of measurement properties. *Neurosci Biobehav Rev*, *68*, 335-360. https://doi.org/10.1016/j.neubiorev.2016.05.024

Wilding, C. (2011). Raising awareness of hegemony in occupational therapy: the value of action research for improving practice. *Aust Occup Ther J*, *58*(4), 293-299. https://doi.org/10.1111/j.1440-1630.2010.00910.x

Wilson, B.A., Cockburn, J., Baddeley, A. & Hiorns, R. (1991). Rivermead Behavioral Memory Test: Manual. Thames Valley Test Co.

World Health Organization (2001). International classification of functioning, disability and health. WHO. ISBN: 92 4 154542 9

World Health Organization. (2015). World report on ageing and health. WHO. ISBN: 978 92 4 156504 2

World Health Organization (2017). Global action plan on the public health response to dementia 2017–2025. WHO. ISBN: 978 92 4 151348 7

Zur, B. M., Rudman, D. L., Johnson, A. M., Roy, E. A., & Wells, J. L. (2013). Examining the construct validity of the Cognitive Competency Test for occupational therapy practice. *Can J Occup Ther*, *80*(3), 171-180. https://doi.org/10.1177/0008417413491918

TABLES AND FIGURES

Figure 1: Evaluation framework generated by participants

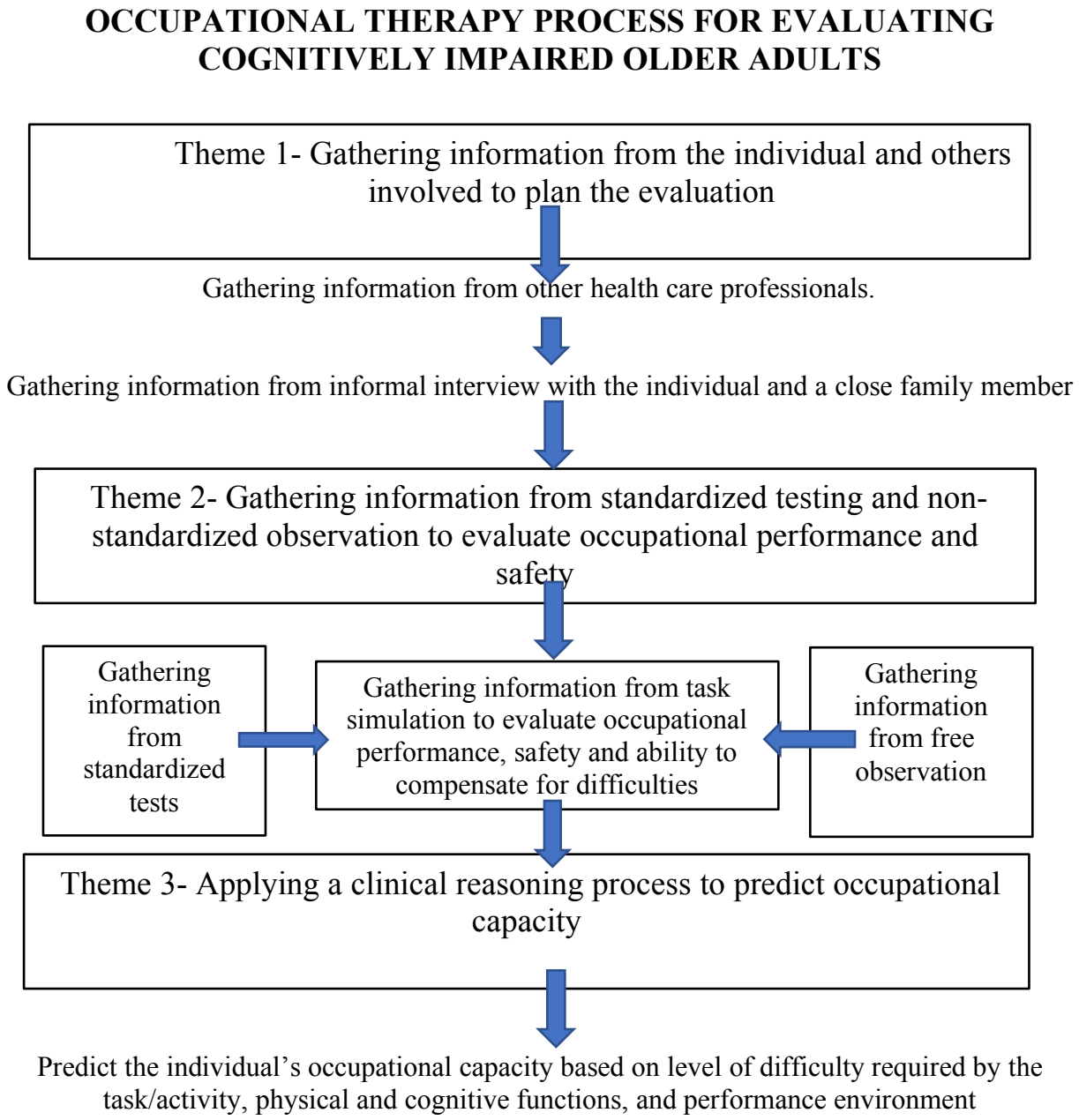


Figure 2: **Hartman-Maier-Cognitive Functional Evaluation**

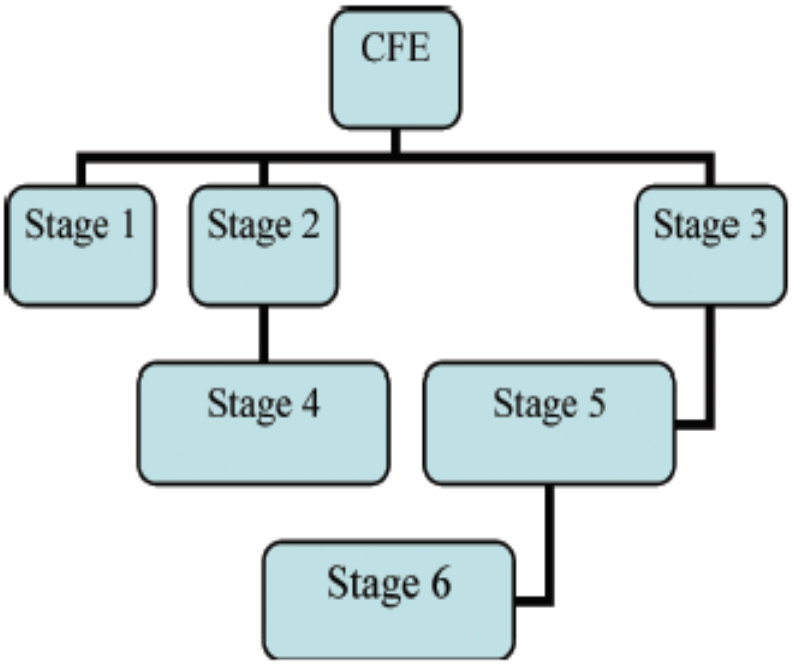
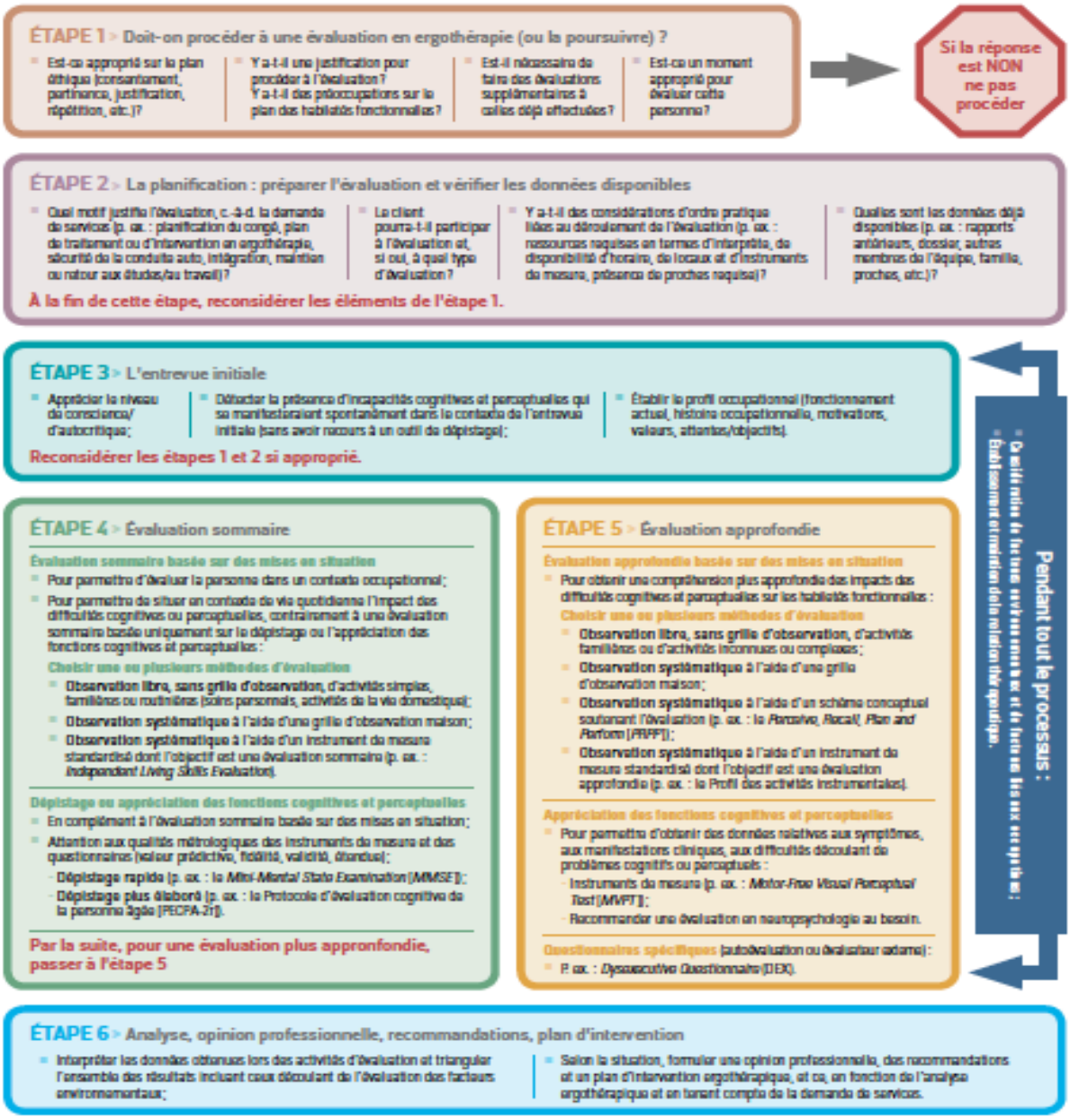


TABLE 1. Stages in the Process of the Cognitive/Functional Evaluation (CFE)

1. Interview and background information including an occupational history
2. Cognitive screening and baseline status tests
3. General measures of cognition in occupations
4. Cognitive tests for specific domains
5. Measures of specific cognitive domains in occupations
6. Environmental assessment

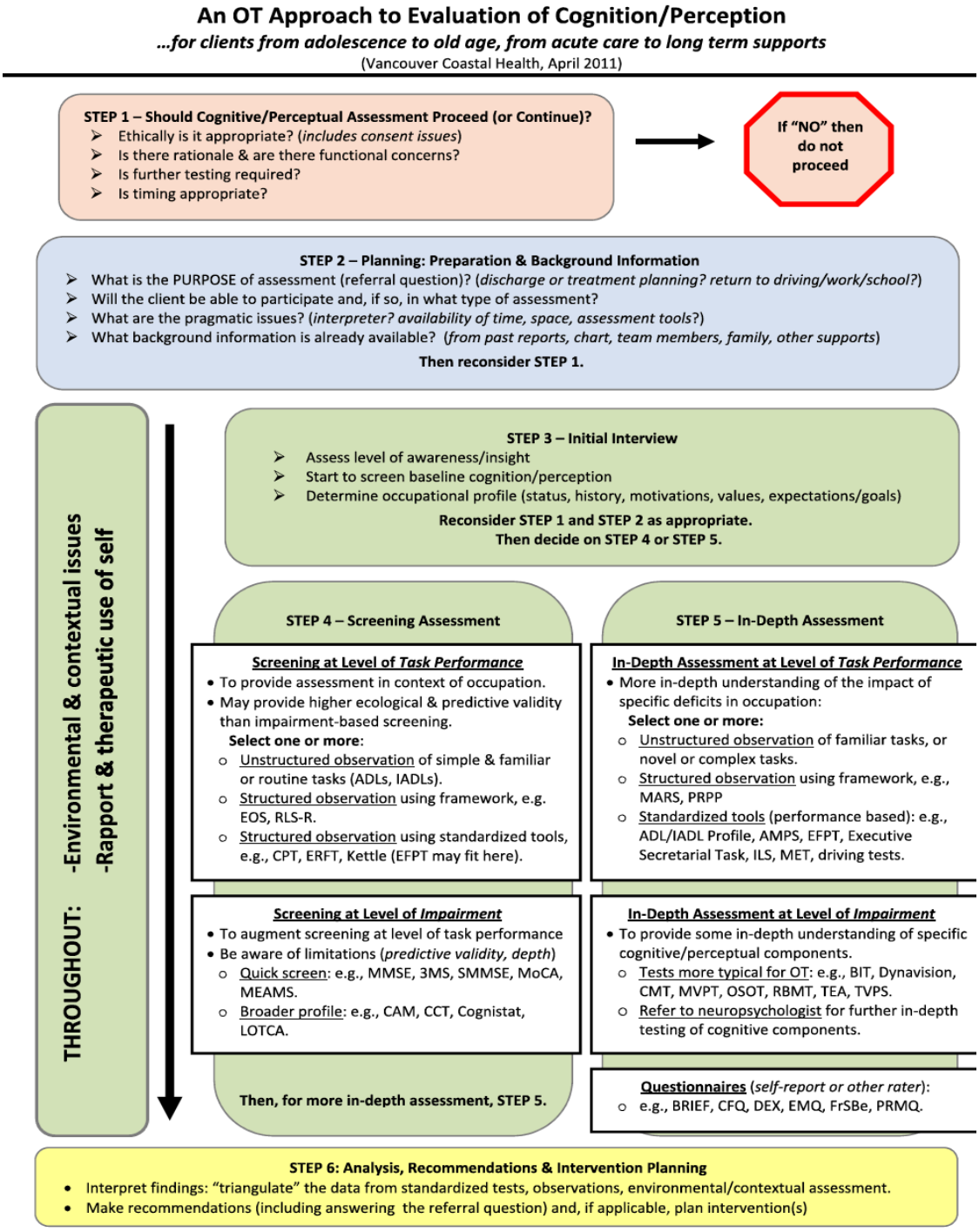
(Hartman-Maeir et al., 2009)

Figure 3: **OEQ decisional support for evaluating perceptual and cognitive difficulties**



Ordre des ergothérapeutes de Québec (2016).
https://www.oeq.org/DATA/NORME/44~v~oeq_processusdecisionnel_cognitif_2016.pdf

Figure 4: McLean/ Vancouver Coastal Health Guideline



McLean & Vancouver Coastal Health (2011).

Table 1: Synthesis of evaluation frameworks and guidelines

Cognitive Functional Evaluation (CFE)	McLean & Vancouver Coastal Health Guideline	OEQ Decisional Guideline
Process and Methods		
Background information, occupational history, initial interview		
Stage 1 - Interview and background information including occupational history **Methods:** standardized instruments	***Steps 1-3*** 1. Decision to proceed 2. Planning: preparation and background information 3. Initial Interview **Methods:** Rapport, therapeutic use of self	***Steps 1-3*** 1. Decision to proceed 2. Planning: preparation and background Information 3. Initial Interview **Methods:** Rapport, therapeutic use of self
Basic, screening or summative evaluation		
Stage 2 & 3 (basic evaluation) (after completing stage 1) • Cognitive screening and baseline cognitive status tests **Methods:** Standardized instruments • General measures of cognition and executive function in occupation **Methods:** Standardized instruments	***Step 4 (screening assessment)*** (after completing steps 1-3) - Screen task performance **Methods:** • Non-standardized observation • Observation using a conceptual framework • Standardized instruments - Screen impairment **Methods:** • Quick screening tests • Broader profile screening tests	***Step 4 (summative evaluation)*** (after completing steps 1-3) - Evaluate activity performance **Methods:** • Non-standardized observation • Observation using an in-house grid • Standardized instruments - Screen/appreciate cognitive function **Methods:** • Quick screening tests • More elaborate screening tests
In-Depth Evaluation		
Stages 4 & 5 (In-Depth Evaluation) (after completing stages 1-5) • Cognitive tests for specific domains **Methods:** Standardized instruments • Measures of specific cognitive domains in occupations **Methods:** • Standardized instruments • Referral to neuropsychology	***Step 5 (In-Depth Assessment)*** (after completing steps 1-4) - Assess task performance **Methods:** • Non-standardized observation • Observation using conceptual framework • Standardized instruments - Assess impairment **Methods:** • Standardized instruments • Referral to neuropsychology	***Step 5 (In-Depth Evaluation***) (after completing steps 1-4) - Evaluate activity performance **Methods:** • Non-standardized observation • Observation using an in-house grid or conceptual framework • Standardized tests - Appreciate cognitive function **Methods:** • Standardized instruments • Referral to neuropsychology
Final Step		
Stage 6 - Environmental assessment (complete for basic and in-depth evaluations) **Methods**: Standardized instruments	***Step 6 - Analysis, recommendations and intervention planning*** *(*complete for screening and in-depth assessments)	***Step 6 - Analysis, professional opinion, recommendations and intervention planning*** *(*complete for summative and in-depth evaluations)

Table 2: Participant Demographics

Participant Demographics	N=16
Practice Setting	
In-patient	5
Out-patient	3
Community care	6
CHSLD	3
Years of Clinical Experience	
1-10	12
11-20	1
20+	3
Occupational therapy training	
Bachelor entry level:	7
Masters entry level:	9
Other related health-care training: Example: Driving evaluation certificate	3
Continuing Education	
Cognitive evaluation: Example: AMPS, PECPA-2r, legal capacity	5
Cognitive interventions	6
Other: Documentation of evaluation	1
Most frequent age evaluated	
65-75 years old	4
76-85 years old	8
86 years +	4
Most frequent diagnosis	
Delirium	1
Major neurocognitive disorder	5
Minor neurocognitive disorder	9
Other: Stroke	1
Number of evaluations per week *Mean* *Range*	 3.95 1/month – 12/week
Other professionals in clinical setting	
Nurses	16
Social Workers	14
Geriatricians	8
Psychiatrists	3
Neuropsychologists	9
Other: Example: physical therapy, music therapy	16

Table 3: Themes for Objective 1
How occupational therapists assess older individuals with cognitive impairments

Themes	Subthemes and definitions
1- Gathering information from the individual and others involved to plan the evaluation	***Subtheme-Gathering information from other health professionals*** • determine who requires their professional evaluation and why • determine what is a priority to evaluate
	Subtheme-Gathering information from an informal interview with the individual and a close family member • target which daily activities are most important to observe • begin to explore cognitive difficulties in daily occupations • validate the information provided by the older individual
2- Gathering information from non-standardized observation and standardized testing to evaluate occupational performance and safety	***Subtheme-Gathering information from task simulation*** • used more frequently than any other method to evaluate occupational performance and safety • can be modulated to: o include only activities that are relevant to the individual o explore the use of compensatory strategies o allow the gradation of difficulty • use to explore safety concerns o clinical experience functions as a norm reference
	Subtheme-Gathering information from standardized cognitive screening and performance-based tests • addresses issues of bias • provide a framework to assess functions that are difficult to simulate • scores are easily understood by other clinicians and professionals
	Subtheme-Gathering information from free observation • provides information on what the individual does when left alone • less confrontational that task simulation or standardized testing
3-Applying a clinical reasoning process to predict occupational capacity	Involves • Understanding the physical and cognitive demands of the occupation o applied knowledge of a hierarchy of difficulty • Understanding the individual's underlying physical and cognitive function and impairments • Articulating how these impairments will impact the performance of routine tasks, activities and occupations

Table 4: Themes for Objective 2: Knowledge and Tool Needs

Themes	Subthemes and definitions
1- Knowledge related to cognition and occupational performance and skills to apply this knowledge in practice	***Subtheme- Knowledge of cognitive processes and cognitive disorders*** • basic understanding of cognitive processes and disorders • knowledge needs to be kept up to date
	Subtheme- Skills to apply knowledge of cognitive processes and cognitive disorders to evaluations • formal training on how to identify problems with cognitive processing during occupational performance
	Subtheme- Knowledge of interventions that compensate for cognitive difficulties in occupational performance • training on how to employ compensatory strategies at home • guidelines for assistive technology that supports compensation • guidelines on how to address behavioral symptoms
2- Knowledge related to legal capacity and protection regimes	• Information about types of inaptitude and protection regimes • Need identified to: o exchange information with other professionals o contribute to decisions o target relevant information o advocate for the individual
3- **Tools to support evaluating the impact of cognitive function on occupational performance**	***Subtheme- Standardized performance-based tests*** • Need for standardized, performance-based tests that are: o global for IADL o accessible (little to no training to learn) o practical (under 45 minutes to administer) o validated/norms for older adults o evaluate specific cognitive functions in occupational performance ▪ example-judgement in unsafe scenarios
	Subtheme-Guidelines and standardized frameworks • Element 1- An evaluation grid to check off key elements to observe in occupational performance o key cognitive functions observed o type of assistance required • Element 2- standardized process to analyze an observation of any activity: o locates the individual's performance on a continuum o performance generalized to predict difficulty with other activities
	Subtheme- Facilitative assessment environments • Need identified for in-patient care settings • Home-like environment facilitating the assessment of abilities and safety (*facilitative assessment environments)* o resembles a studio apartment o includes a kitchenette o close proximity in-patient care unit o help from hospital staff available if needed o video camera to monitor performance

Table 5: Themes for Objective 3: Preferred strategies to acquire new knowledge

Themes	Subthemes and definitions

1-Acquiring new knowledge through interaction with experts	• Knowledge acquisition to move practice forward
	• 2 types of interactions are effective
	  o Formal courses
	  ▪ more immersive
	  ▪ in-depth coverage of material
	  o Informal workshops
	  ▪ cost-effective
	  ▪ convenient
	• Key points for presenting new knowledge
	  o Synthesized form
	  o Guidelines for clinical use
	  o Theoretical content linked to clinical practice
	  o Clinical examples (example: video vignettes)

2-Acquiring new knowledge through interaction with students, peers and other professionals	• Knowledge acquisition for specific clinical issues in the workplace
	• Interaction with students
	  o Stimulates reflection and research on clinical questions
	• Interaction with professional peers
	  o Knowledge from more experienced peers
	  o One-to-one discussions or organized group exchanges
	• Interaction with other health-care professionals
	  o Access to other related areas of expertise

APPENDIX

Appendix A - Sociodemographic Questionnaire

Introduction: To help ensure that we have an accurate representation of your current practice, please answer the following questions:

1.1 How many years have you been working as an occupational therapist?
_____ years

1.2 What year did you graduate from your occupational therapy training program?

1.3 Please indicate the degree you obtained in your professional training as an occupational therapist:

- ☐ Diploma
- ☐ Bachelor's degree
- ☐ Professional master's degree

1.4 Please indicate the diplomas or degrees that you have completed other than your professional training as an occupational therapist:

- ☐ Diploma
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctoral degree

Please indicate the title of the diploma (s) or degree (s):

1.5 Please indicate the facility for which you work most of the time:

- ☐ Hospital
- ☐ CLSC
- ☐ CHSLD
- ☐ Ressource intermédiare
- ☐ Other: please specify_____

1.6 How many years have you been working in this type of facility?
_____ years

1.7 Please indicate the other health professionals you work with in your clinical setting:

- ☐ Nurses
- ☐ Social Workers
- ☐ Geriatricians
- ☐ Psychiatrist
- ☐ Psychologists
- ☐ Neuropsychologists
- ☐ Other: please specify_____

1.8 In a typical work week, how many functional evaluations do you complete with cognitively impaired older adult clients?

_____ evaluations

Approximately how many of these are new evaluations? _____ evaluations

Approximately how many are repeat evaluations? _____ evaluation

1.9 Please indicate in order the age group of clients that you see most frequently in your practice: first choice being most frequent, second choice being second most frequent and third choice being third most frequent.

a) 65 to 75 years old
b) 76 to 85 years old
c) 86 years and older

first choice: ____ second choice: ____ third choice: ____

2.0 Please indicate in order the three most frequent diagnoses associated with your older adult clients: first choice being most frequent, second choice being second most frequent and third choice being third most frequent.

a) Delirium
b) Dementia
c) Mild cognitive impairment
d) Neurological disorder (Parkinson's disease, ALS)
e) Psychiatric disorder (depression, bipolar disorder)
f) Other (please specify)

first choice: ____ second choice: ____ third choice: ____

2.1 Have you received any continuing education or training specifically in the evaluation and/or treatment of cognitively impaired clients? Which course, and when? Please specify.

☐ No
☐ Yes: Specify the name of the training and when you received it:

Thank you !

Appendix B - Interview Guide, FGa and FGb

First Meeting FGa

DESCRIPTION OF THE EVALUATION PROCESS (60 minutes)

1.1 Opening and Introduction (5 minutes)

As outlined in the consent form, today's meeting aims to understand **how occupational therapists evaluate everyday function in seniors with cognitive impairments.** There is no right or wrong answer to the questions I am going to ask you. I just want to know your perception.

The meeting will be organized as follows: the facilitator will ask a question and each of you will be asked to answer it, adding information to what the other participants said. Throughout the meeting, the facilitator will sometimes ask questions to better understand your comments. The observer will take notes during the meeting and give us an account at the end to validate the information.

This meeting is being audio recorded for later analysis by the research team.

Do you have any questions? Do you understand what we're going to discuss? Are you ready to start?

1.2 Can you describe the process you are using to assess the elderly with cognitive impairments? (40 min)
Sub-questions (if necessary):
Why are you asked to assess the elderly with cognitive impairment?
What evaluation methods do you use?
What specific tools do you use?
Why do you choose these methods and tools?

1.3 Ending Questions (5 minutes)

Do you have any further comments?

1.4 Data Validation (10 minutes)

(Five-minutes oral summary to be provided by the observer)

How well does this capture what you said here? (5 minutes)

Second Meeting: FGb

KNOWLEDGE NEEDS (60 minutes)

2.1 Opening and Introduction (5 minutes)

As outlined in the consent form, today's meeting aims to understand **what the knowledge needs are of occupational therapists in evaluating seniors with cognitive impairments?** There is no right or wrong answer to the questions I am going to ask you. I just want to know your perception.

The meeting will be organized as follows: the facilitator will ask a question and each of you will be asked to answer it, adding information to what the other participants said. Throughout the meeting, the facilitator will sometimes ask questions to better understand your comments. The observer will take notes during the meeting and give us an account at the end to validate the information.

This meeting is being audio recorded for later analysis by the research team.

Do you have any questions? Do you understand what we're going to discuss? Are you ready to start?

2.2 In your opinion, what type of information is most useful when you assess the elderly with cognitive impairment? (40 minutes)
Sub-questions (if necessary):
What is the best source of this information?
Is there be an ideal clinical tool that would help you to access this information?
Is there any knowledge that would support or enhance your ability to evaluate everyday function in older adults?

2.3 Ending Questions (5 minutes)

Do you have any further comments?

2.4 Data Validation (10 minutes)

(Five-minutes oral summary to be provided by the observer)

How well does this capture what you said here? (5 minutes)

Appendix C – Table matrices for knowledge needs, tools needs, and knowledge translation strategies

FIGURE 2
KNOWLEDGE AND TOOL NEEDS FOR OCCUPATIONAL THERAPISTS ASSESSING COGNITIVELY IMPAIRED OLDER ADULTS

CLINICAL PRACTICE NEED 1	STRATEGIES to AQUIRE NEW KNOWLEDGE
To better distinguish cognitive functions affecting occupational performance and select appropriate interventions for performance difficulties	Interaction with Experts through formal and informal educational activities to acquire and apply new evidence-based knowledge Interaction with students and professional peers to apply new knowledge to specific issues in clinical practice
TYPE of KNOWLEDGE or TOOL NEEDED	
• Up to date knowledge of cognitive systems and their impact on occupational performance • Up to date knowledge of cognitive disorders • Up to date knowledge of interventions that compensate for decreased cognitive function	
PRACTICE SETTINGS	
In-patient geriatric (post-acute, rehabilitation), out-patient geriatric, and community care settings	

CLINICAL PRACTICE NEED 2	STRATEGIES to ACQUIRE NEW KNOWLEDGE
To contribute information effectively to team decisions related to legal capacity	Interaction with Experts through formal and informal educational activities to acquire and apply new evidence-based knowledge
TYPE OF KNOWLEDGE or TOOL NEEDED	
Up to date knowledge of concepts related to legal capacity and protection regimes	
PRACTICE SETTINGS	
In-patient geriatric (post-acute, rehabilitation), out-patient geriatric, and community care settings	

CLINICAL PRACTICE NEED 3	STRATEGIES to ACQUIRE NEW KNOWLEDGE
To increase objectivity, precision and consistency and be able to compare evaluation results over time	Interaction with Experts through formal and informal educational activities to acquire and apply new evidence-based knowledge Interaction with students and professional peers to apply new knowledge to specific issues in clinical practice
TYPE of KNOWLEDGE or TOOL NEEDED	
• Standardized performance-based tests that are global for IADL, accessible, practical, available in English and French, up to date for household items and technologies (telephone, internet) and include norms for older adults • Evaluation checklists, grids and guidelines for non-standardized tasks simulations to guide the evaluation and analyze the performance of any daily activity	
PRACTICE SETTINGS	
In patient geriatric (post-acute, rehabilitation), out-patient geriatric, and community care settings	

CLINICAL PRACTICE NEED 4	STRATEGIES to ACQUIRE NEW KNOWLEDGE
To accurately assess safety and ability to initiate daily activities and trial interventions when the patient is not assessed in their home environment	Not specified
TYPE of KNOWLEDGE or TOOL NEEDED	
Facilitative in-hospital environments with staff components	
PRACTICE SETTINGS	
In-patient geriatric settings (post-acute, rehabilitation)	

Appendix D - Interview guide FGc

VALIDATION OF DATA FROM FOCUS GROUP MEETINGS 1 AND 2 (60 minutes)

Opening and Introduction (5 minutes)

As outlined in the information and consent form, today's meeting is to confirm that the information we collected in two previous focus groups accurately represents your opinions and perceptions. In these two focus groups, we asked you to describe 1) how occupational therapists evaluate everyday function in seniors with cognitive impairments and 2) what the knowledge needs are of occupational therapists in evaluating seniors with cognitive impairments. Prior to this meeting, we provided you with a summary of the data in 2 figures which we invited you to review.

For today's meeting, there is no right or wrong answer to the questions we are going to ask you. We just want to know your perceptions.

The meeting will be organized as follows: the facilitator will ask a question and each of you will be asked to answer it, adding information to what the other participants said. Throughout the meeting, the facilitator will sometimes ask questions to better understand your comments. The observer will take notes during the meeting and give us an account at the end to validate the information.

This meeting is being audio recorded for later reference by the research team.

Do you have any questions? Do you understand what we're going to discuss? Are you ready to start?

1. How well does figure 1 represent the assessment process?
Sub-questions (if necessary):

How well did we represent all the evaluation methods that you use?
How well did we summarize the main reasons why you use these methods?
Is there any information that we missed with regards to how you assess cognitively impaired seniors? Is there any information you would add?

2.1 How well does Figure 2 represent the types of knowledge and tools that you require in the assessment process? (15 min)
Sub-questions (if necessary):
How well did we identify and describe the clinical need for these types of tools and knowledge?
Is there any information that we missed? Is there any information you would add?

2.2 How well does figure 2 represent main strategies that you prefer to acquire new knowledge? (15 min)
Sub-questions (if necessary):

Is there any information that we missed with regards to the best way for you to acquire new knowledge? Is there any information you would add?

3.0 Ending Questions (5 minutes)

Do you have any further comments?

4.0 Data Validation (5 minutes-oral summary to be provided by the interviewer)

Appendix E – Questionnaire for written validation

QUESTIONNNAIRE

We are interested in your opinion of Figures 1 and 2. Please respond to the following questions in the space provided. There is no right or wrong answer to the questions.

1.0 How well does figure 1 represent the assessment process? How well did we represent all the evaluation methods that you use? How well did we summarize the main reasons why you use these methods? Is there any information that we missed regarding how you assess cognitively impaired seniors? Is there any information you would add?

2.1 How well does figure 2 represent the types of knowledge and tools you require in the assessment process? Did we accurately identify and describe the clinical need for these types of tools and knowledge? Is there any information that we missed? Is there any information you would add?

2.2 How well does figure 2 represent the main strategies you prefer to acquire new knowledge? Is there any information that we missed? Is there any information you would add?

3.0 Do you have any further comments?