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Language-based Strategies That Support Person-centered Communication In Formal Home Care Interactions With Persons Living With Dementia

Reanne G. Mundadan, *The University of Western Ontario*

Supervisor: Savundranayagam, Marie Y., *The University of Western Ontario*

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Abstract

Language-based strategies are recommended to improve coherence, clarity, reciprocity, and continuity of interactions with persons living with dementia. Person-centered care is the gold standard for caring for persons living with dementia. Person-centered communication (PCC) strategies, include facilitation, recognition, validation, and negotiation. Little is known about which language-based strategies support PCC in home care. Accordingly, this study investigated the overlap between language-based strategies and PCC during home care. Analysis of conversation of 30 audio-recorded interactions between personal support workers (PSWs) and persons living with dementia was conducted. The overlap between PCC and language-based strategies was analyzed. Of 11,347 communication-units, 2,578 overlapped with PCC. For facilitation, 21% were yes/no questions. For recognition, 25% were yes/no questions and 22% were affirmations. For validation, 81% were affirmations and positive feedback. Finally, for negotiation, 60% were yes/no questions. The findings highlight the person-centeredness of language-based strategies. PSWs should use diverse language-based strategies that support PCC.

Keywords

Dementia, formal caregivers, personal support workers, home care, communication, person-centered communication, language-based strategies, education, training

Summary for Lay Audience

Dementia is a disorder that impairs memory, behaviours, and thinking. Persons living with dementia often experience declines in short term memory, planning, judgement, along with communication and language difficulties. Persons living with dementia experience a deterioration of speech, language, and comprehension difficulties over time. PSWs working in home care, a prominent care setting in the future due to increasing demand, should be trained to communicate effectively with persons living with dementia. Language-based strategies can be used to address communication challenges faced by persons living with dementia. They also improve various elements of conversation with persons living with dementia. Person-centered communication (PCC) helps to acknowledge persons living with dementia as a distinct individual and respond to their unique needs. However, it is unknown whether there is some overlap between language-based strategies and PCC. The cooccurrence of language-based strategies and PCC during home care interactions between PSWs and persons living with dementia was analyzed. Instances in which language-based strategies may contribute to PSWs missing opportunities to be person-centered were also investigated. We found that language-based strategies support PCC during home care interactions with persons living with dementia. PSWs should specifically use the following language-based strategies to support PCC: yes/no questions, acknowledging the feelings of the person living with dementia, using their name, announcing care activities, and giving instructions. However, PSWs should simultaneously be careful when using yes/no questions, announcing care activities, and giving instructions to avoid missing opportunities for PCC. PSWs should also use a wider array of language-based strategies that support PCC during care as many displayed little overlap. The home care setting was unique because PSWs could spend more time having meaningful conversations with their clients with dementia. This contributed to language-based strategies like open ended questions, which allow the person living dementia to make meaningful contributions to conversation, to overlap more frequently with PCC in home care than in long-term care. Our findings can improve care for persons living with dementia by showing specific ways that PSWs can enhance their communication skills using PCC and language-based strategies.

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Chapter 1

1 Introduction

1.1 Definition and Characteristics of Dementia

Dementia is defined as a chronic, progressive major neurocognitive disorder that affects cognitive functioning and memory processes resulting in impaired memory, behaviours, and thinking (5th ed.; *DSM-5;* American Psychiatric Association, 2013; World Health Organization, 2021). Dementia involves a *decline* in cognitive functioning, hence it is distinguished from intellectual disabilities and learning disorders that are evident and symptomatic over the life course (Oh & Rabins, 2020). Persons living with dementia experience cognitive impairments in several domains that are severe and affect their occupational, domestic, and/or social functioning (Camicioli, 2013; Gale et al., 2018). Dementia is an acquired syndrome that could be caused by various diseases such as Alzheimer's disease or Parkinson's disease, among others (Gale et al., 2018). A small percentage (1-2%) of persons living with dementia have a potentially reversible, non-neurodegenerative form that could be linked to vitamin deficiencies, infections, hypothyroidism, traumatic brain injury, major depression (Gale et al., 2018; Oh & Rabins, 2020). However, older adults mostly experience dementia caused by neurodegenerative diseases (Gale et al., 2018). Common degenerative dementias experienced by older adults include Alzheimer's disease, vascular dementia, frontotemporal dementia, and dementia with Lewy bodies (Gale et al., 2018). In Canada, based on most recent available data between April 2017 and March 2018, approximately 452,000 individuals over 65 were living with diagnosed dementia and approximately 85,000 individuals older than 65 were newly diagnosed with dementia (Public Health Agency of Canada, 2014). Only about 3% of persons living with dementia in Canada are below the age of 65 and experiencing young onset dementia. To receive a diagnosis of dementia, a significant decline in one or more of the following domains must be evident: language, learning and memory, attention, executive functioning, perceptual motor, or social cognition (American Psychiatric Association, 2013). The behavioural and psychological symptoms commonly associated with dementia include agitation, depression, apathy, repetitive questioning, sleep problems, and wandering (Kales et al., 2015). Other characteristics of dementia include declines in short-term memory, planning, and judgement; physical changes such as loss of coordination

and trouble standing, sitting or walking; behavioural and personality changes; visuospatial difficulties and hallucinations; writing and reading difficulties (Public Health Agency of Canada, 2014; Morhardt et al., 2015). Finally, as foreshadowed in the diagnostic criteria, communication and language deficits are experienced by persons living with mild, moderate, and severe dementia (Banovic et al., 2018).

1.2 Dementia and communication

Communication is the foundation of most social interactions and what it means to exist in an increasingly social world. It is a means to show care and concern, convey needs and desires, and a pathway for mutual understanding. Persons living with dementia often experience changes in their communication abilities, specifically memory, comprehension, speech and language skills, and social skills (Santo Pietro & Ostuni, 2003). The onset of dementia causes various progressive disturbances to higher cortical functions (World Health Organization & Alzheimer's Disease International, 2012). In particular, language functions start to deteriorate resulting in speech, language, and comprehension difficulties during early and middle stage dementia (Eggenberger et al., 2013; Santo Pietro & Ostuni, 2003). Common speech and language difficulties include decline in naming abilities, fluency issues, inability to self-correct, and loss of creative language use (Santo Pietro & Ostuni, 2003). Communication deficits resulting from long- and short-term memory impairments include word finding difficulties that can make conversational interactions arduous for persons living with dementia and their conversational partners (de Vries, 2013; Savundranayagam & Moore-Nielsen, 2015; Wilson, Rochon, Leonard, et al., 2012). Some other declines related to memory include difficulty retaining recently acquired information (Santo Pietro & Ostuni, 2003). Additionally, cognitive disturbances can cause poor logic and coherence during conversation (de Vries, 2013), impaired verbal fluency (Wilson, Rochon, Leonard, et al., 2012), and detrimental effects on comprehension of contextual elements of interactions such as requests and instructions (de Vries, 2013; Wilson, Rochon, Leonard, et al., 2012). Other comprehension deficits experienced by persons living with dementia include difficulty understanding rapid or complex speech and difficulty maintaining focus in distracting environments (Santo Pietro & Ostuni, 2003). Finally, impaired understanding of pragmatic and discourse rules coupled with cognitive impairments can produce inappropriate topic shifts and

continual repetitions of previously stated ideas (de Vries, 2013; Savundranayagam & Moore-Nielsen, 2015).

Ensuring effective communication can be challenging for caregivers who enter an interaction without a nuanced understanding of these communication changes and abilities of the person living with dementia. Interactions can become demeaning, dehumanizing, and often one-sided when verbal communication is maladapted for the individual (Acton et al., 2007). The Communication Predicament of Aging Model provides a framework for how a reliance on pervasive age-associated stereotypes and assumptions can result in such communication behaviours that are detrimental to the interaction and overall well-being of the older adult (Ryan et al., 1986). However, when harnessed appropriately by caregivers, communication opportunities with the person living with dementia can promote the meaningful expression of thoughts, feelings, and desires and inclusion in a reciprocal interaction (Acton et al., 2007; Morris et al., 2020). Accordingly, the Communication Enhancement Model stipulates that older adults can be supported when caregivers employ positive communication modifications that are rooted in a consideration of the person living with dementia, their communicative intentions, and the environment (Ryan et al., 1995).

1.3 Communication Predicament of Aging Model

The Communication Predicament of Aging Model developed by Ryan and colleagues (1986), highlights that communication behaviours shaped by negative stereotypes result in constrained communication opportunities and the reinforcement of patronizing stereotypes. Individuals adjust their verbal and nonverbal communication practices to accommodate their communication partners, often with the goal of enabling a successful conversation or interaction. However, this model states that these adjustments are often subject to subconscious or overt stereotypes relating to a perception of dependence or incompetence of the conversational partner. The negative outcomes of this natural accommodating yet often stigmatizing tendency include dissatisfactory conversational outcomes, reinforcement of age-related stereotypes, and negative psychological impacts for the older adult. When a conversational partner links age-associated features of an individual with negative social stereotypes, this may often result in the assumption that specific communication adjustments are required to accommodate for speech and hearing difficulties. Therefore, there is increased likelihood of implementing age-motivated modifications, as with

the use of patronizing communication, including unprompted reduction of grammatical complexity, as well as frequent repetitions, interrogatives, and commands (Ashburn & Gordon, 1981; Ryan et al., 1995). Over time, these modified behaviours can feed into the negative feedback model and result in physical, psychological, and social disadvantages for the person living with dementia (Ryan et al., 1995; Ryan et al., 1991).

1.4 Communication Enhancement Model

The Communication Enhancement Model, developed by Ryan and colleagues (1995), emerged from a health promotion lens of self-care, mutual aid, and healthy environments. This theory recognizes that communication challenges often stem from a mismatch in abilities and expectations and the opportunities available to persons living with dementia in their environment. Caregivers can facilitate communication by attempting to learn more about the person living with dementia, modifying the environment to enable successful communication, and understanding the intentions behind what the person living with dementia is trying to express. The positive modification of communication practices results in an interaction that also supports the older adult in interacting with greater confidence and expectations of his/her role as an active participant in conversation (Orange et al., 1995). As effective communication strategies are used, the caregiver can improve their assessment of the older adult's individual needs and abilities and therefore act in a responsive manner to accommodate them rather than relying on generalized perceptions (Ryan et al., 1995). The application of this model to interactions with persons living with dementia can guide caregivers to move beyond stereotypes and an ignorance of personhood, to a more individualized and responsible way of communicating. It encourages caregivers to integrate the heterogeneity of persons living with dementia into interactions to facilitate a growing understanding of individual cues, needs, and expectations. The Communication Enhancement Model highlights that an individualized focus during communication will allow for more positive interactions. Conversational interactions can support older adults rather than stigmatize them when caregivers use communication that is tailored to individual needs rather than the learned stereotypes implicated in the Communication Predicament of Aging Model (Orange et al., 1995; Ryan et al., 1995).

1.5 Caregiving for persons living with dementia

Personal support workers (PSWs) provide the bulk of formal care relating to activities of daily living and other general care assignments, including respite, palliative care, and medication assistance in Ontario long-term care and home care settings (Home Care Ontario, 2018). There is a projected shortage of 150,000 long-term care beds in Canada by 2038, which will result in a sharp rise in persons living with dementia receiving home care (Street, 2008). Home care includes a range of services provided to individuals of all ages in community settings, including the home, workplace, and schools (Home Care Ontario, 2018). Approximately 60% of home care users in Ontario are older adults (Home Care Ontario, 2018). Older adults overwhelmingly want to age at home (i.e., age in place). For instance, 93% of Home Care Ontario survey respondents indicated their desire to stay at home with none identifying long-term care in their future housing plans (Home Care Ontario, 2020). Also, 87% of Canadians aged 55 years and older indicated their desire to live at home as long as possible (Canadian Institute for Health Information, 2011). In fact, a more recent survey by the National Institute of Ageing (2020) concluded that 91% of Canadians and nearly 100% of Canadians aged 65 and older indicate their plans to age in place as long as possible. The COVID-19 pandemic may have further reinforced this perspective. Another Canadian survey conducted in the Fall of 2020 regarding long-term care preferences found that 70% of respondents had serious concerns about exposure to health risks in long-term care homes (Achou et al., 2021). Further, 70% of respondents indicated increased support for home care policies, including subsidies and tax exemptions, reflecting their desire for home care to be a viable option post-pandemic (Achou et al., 2021).

Home care services support the physical, mental, and social wellbeing of older adults by providing continued freedom, comfort, independence, and choice (Home Care Ontario, 2018). While the demand for home care services continues to grow with increased urgency, it is essential that the industry has skilled and effectively trained PSWs to meet the needs of a growing population. Home care may differ from long-term care due to environmental differences, social differences in that the family of the person living with dementia is intensely part of the caregiving process, and the outlook and behaviours of the person living with dementia given that they are living at home in a familiar and personal environment. As the proportion of

persons living with dementia living at home increases, the attention to home care practices must be intensified accordingly.

1.6 Communication with persons living with dementia during formal, direct care

Currently, there is limited and inadequate dementia-specific and communication-related training in formal education and training for PSWs (Savundranayagam et al., 2020). The lack of dementia-specific communication training for formal caregivers may lead to communication interactions that can be task-focused, overly directive, and patronizing (Vasse et al., 2010). Formal caregivers recognize the need for and are interested in receiving training specific to caring for persons living with dementia (Breen et al., 2021; Flöjt et al., 2014; Morgan et al., 2016; Savundranayagam et al., 2021). Communication-related challenges faced by the person living with dementia are often further exacerbated by ineffective caregiver communication that promotes age- and dementia-related stereotypes (Savundranayagam & Moore-Nielsen, 2015; Young et al., 2011). The unmet needs related to these communication challenges can result in agitation and other responsive behaviours (de Vries, 2013). Therefore, responsive behaviours can arise in response to problematic and ineffective communication from the caregiver. Responsive behaviours from persons living with dementia are often labelled as aggressive and disruptive and are met with poor communication by PSWs (Young et al., 2011). This may culminate into physical and mental health issues, stress, and burnout experienced by PSWs, adding pressure to an already unstable care system that relies on them (Viau-Guay et al., 2020). The consequences of poor communication with persons living with dementia highlights the need for attention on effective dementia-specific communication practices. It is recommended that care interactions with persons living with dementia be more person-centered, meaning interactions must be empathetic and sensitive to the individual communication challenges, needs, and perspectives of persons living with dementia (de Vries, 2013; Fetherstonhaugh et al., 2016). Individualized, dementia-specific communication is considered to be the bridge that closes the gap in the caregiver-client relationship and encourages persons living with dementia to share freely their desires, thoughts, and preferences (Barbosa et al., 2016; de Vries, 2013; Levy-Storms et al., 2011). When the caregiver-client designation grows into a true partnership and relationship, results are overwhelmingly positive for PSWs who find meaning in their work and persons living

with dementia who gain an improved sense of well-being and comfort (Ericsson et al., 2013). To facilitate this, PSWs must first know how to enhance the way they communicate with their clients living with dementia. Therefore, equipping PSWs with evidence-based communication practices that complement the person living with dementia and their communication abilities while accommodating for their communication challenges is necessary. A person-centered approach and language-based approach to communicating effectively with persons living with dementia can be the pathway to improved care and caregiver-client relationships.

1.7 Person-centered Approach

The person-centered care approach can holistically revolutionize dementia care to effect positive outcomes for both the caregiver and persons living with dementia. This approach was established by Tom Kitwood's work on the dawn of a new dementia care culture which highlighted the impact of interpersonal relationships and experiences on the behaviours associated with dementia (Downs & Collins, 2015; Kitwood, 1997; Savundranayagam & Moore-Nielsen, 2015). Person-centered care involves the caregiver's recognition of the desires, preferences, personal history, and beliefs of persons living with dementia at the forefront of care interactions (Young et al., 2011). Further emphasizing the social process of dementia progression and care, Kitwood's person-centered approach pays close attention to the potential impact of formal caregivers' interactions with persons living with dementia (Barbosa et al., 2016). The implementation of person-centered care is evident when persons living with dementia are recognized as individuals with unique qualities, traits, and characteristics beyond their diagnosis (Kitwood, 1997). This approach has the distinct capability of empowering both caregivers and persons living with dementia. For example, studies that assessed person-centered care interventions presented positive evidence-based outcomes for PSWs, including increased job satisfaction and staff morale (Clegg et al., 2014; Harwood et al., 2012; O'Rourke et al., 2020; Viau-Guay et al., 2013; Young et al., 2011). Likewise, the person-centered approach can increase cooperation, politeness, conversational participation, and sharing of life history by persons living with dementia (Harwood et al., 2012; O'Rourke et al., 2020; Savundranayagam et al., 2016).

Formal caregivers should be trained to adopt communication practices that empower persons living with dementia when speaking with and about them. Communication that follows the person-centered approach can act as a pathway to this important goal. The benefits of the person-

centered approach are especially evident when communication is used as the mechanism to provide person-centered care (Young et al., 2011). Caregivers who are person-centered communicate in a manner that focuses on responding to individual needs, amplifying abilities, and recognizing persons living with dementia as a unique individual, first and foremost (Downs & Collins, 2015; Kitwood, 1997; Savundranayagam & Moore-Nielsen, 2015). These practices can improve the interpersonal relationships and experiences of a person living with dementia and reinforce the avoidance of stigmatizing attitudes and language tendencies (Kitwood, 1997). Person-centered communication (PCC) enriches routine care based on Kitwood's principles of personhood so that the interaction between PSWs and persons living with dementia can become a meaningful partnership (O'Rourke et al., 2020). Interactions that are essential to good dementia care and meet specific psychological needs of persons living with dementia are termed as "positive person work" (Kitwood, 1997). Interactions that enable positive person work enrich personhood in different ways through positive content and psychotherapeutic functions. Kitwood's indicators of positive person work that are most relevant to conversational interactions during routine care include recognition, negotiation, validation, and facilitation (Savundranayagam et al., 2007; Savundranayagam & Moore-Nielsen, 2015).

Recognition includes communication that is used to acknowledge the person living with dementia as an individual, such as calling them by name, integrating their life story into conversation, and using humour to highlight the close caregiver-client relationship. Recognition also can be achieved during conversation where the caregiver shows awareness of the client's life, relationships, preferences, and other unique qualities.

Negotiation includes communication that is used to consult with the person living with dementia on their needs, desires, and preferences. Negotiation is especially evident during routine care tasks where the caregiver may present choices to the person living with dementia, enquire about their present needs, or ask if they are ready to get up for the day.

Validation includes communication that is used to affirm the person living with dementia, such as genuine compliments, empathy, understanding, and responses that are feeling-oriented. When validating communication is used during routine care tasks, persons living with dementia gain a sense of control over activities they may otherwise find challenging.

Facilitation includes communication that is used to initiate and sustain interactions. For example, facilitation may involve working together with the person living with dementia during a task that they may find difficult, involving the person living with dementia in shared tasks, and being responsive to them. Further, asking questions to the person living with dementia to find out more about them as an individual, their interests, thoughts, and experiences is also considered facilitative communication.

Missed opportunities for PCC occur where one of the above indicators of positive person work could have been used to support the sense of self of the person living with dementia but were not (Savundranayagam, 2014; Savundranayagam et al., 2007). A missed-opportunity alternative occurs when a caregiver uses a non-person-centered alternative during an opportunity to be person-centered. It may also involve the use of patronizing communication or nonverbal communication that presents missed opportunities for PCC. A missed-opportunity omission is when a person-centered response could have been given but instead there was a nonresponse or a minimal response indicating that the caregiver may have ignored what the person living with dementia was sharing. It may also include failing to greet the person living with dementia and not allowing them enough time to respond.

1.8 Language-Based Approach

Certain language-based strategies can be used to maintain or promote the coherence, clarity, reciprocity, and continuity of conversational interactions (Savundranayagam & Moore-Nielsen, 2015). Language-based strategies are verbal communication strategies that involve the modification of language, where words, sentence structure, and function may be tailored to best support the communicative needs and abilities of persons living with dementia. For example, yes or no questions can facilitate responses from the person living with dementia without overloading the communication output required (Ripich et al., 1999; Small & Gutman, 2002; Small & Perry, 2005; Wilson, Rochon, Leonard, et al., 2012). Alternatively, caregivers may ask open ended questions that invite the person living with dementia into conversation (Hopper, 2001; Small & Gutman, 2002; Small & Perry, 2005; Ripich et al., 1999; Tappen et al., 1997).

The use of effective language-based strategies during care interactions leads to positive outcomes for PSWs and persons living with dementia. When language-based strategies are used to preserve

the autonomy of persons living with dementia in various contexts, their increased involvement enhances their wellbeing and quality of life (Fetherstonhaugh et al., 2016; Lindsey Jacobs et al., 2019). In fact, older adults especially value autonomy as it is often not a central focus of care provision across settings, especially when dementia-related impairments are allowed to overshadow the abilities, qualities, and individual voice of the person living with dementia (Fetherstonhaugh et al., 2016; Lindsey Jacobs et al., 2019). An increased sense of autonomy contributes to an improved quality of life, decreased occurrence of mental illness, and even decreased mortality and adverse outcomes (Lindsey Jacobs et al., 2019).

Communication training focused on the use of effective language-based strategies contributes to positive communication outcomes for direct care workers and PSWs, such as enhanced dementia-specific verbal skills, improved dementia-specific communication knowledge, and increased preparedness to provide communication support to persons living with dementia (Barbosa et al., 2016; Conway & Chenery, 2016; de Vries, 2013; Savundranayagam et al., 2020). This is also facilitated through the perceived simplicity of the language-based strategies that are taught to PSWs (Conway & Chenery, 2016; Viau-Guay et al., 2013). PSWs' responses to surveys and questionnaires regarding the training interventions and their content showed that language-based strategies were easy to remember, could be put into practice frequently, and were perceived as being helpful for a variety of care activities (Conway & Chenery, 2016). Also, PSWs reported that language-based strategies were smoothly integrated into existing approaches and practices with which they generally carry out their care duties (Viau-Guay et al., 2013). PSWs also report increased confidence in caring for and communicating with persons living with dementia (O'Brien et al., 2020). PSWs who have received language-based communication training report outcomes such as improved staff morale and cooperation, job satisfaction, decreased PSW turnover rates, and increased self-efficacy (Conway & Chenery, 2016; Young et al., 2011). Conway and Chenery (2016) demonstrated that PSWs obtained higher scores on self-efficacy, exhibited decreased strain, and demonstrated increased preparedness to provide care when trained to use language-based strategies during dementia care versus those who were not trained. These results are significant in capturing the array of positive outcomes that are possible when PSWs partake in dementia-specific communication training focused on language-based strategies or with a language-based component.

1.9 Recommended Language-Based Strategies

There are several language-based strategies that can address specific communication challenges faced by persons living with dementia, including those related to comprehension, expression, and other interactional elements of care and conversation. Please see Appendix C for the full language-based strategy codebook.

1.9.1 Language-based strategies facilitating comprehension

Persons living with dementia often experience challenges related to comprehension during interactions (Ripich, 1994; Small et al., 1997; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012). Some specific comprehension challenges include understanding complex sentences at their initial presentation (Small et al., 1997; Wilson, Rochon, Leonard, et al., 2012), following complex and multi-step requests and instructions (Wilson et al., 2013), and long pauses and slower responses (Ripich, 1994). Research in the field has identified several language-based strategies that may be effective at facilitating comprehension abilities of persons living with dementia.

Caregivers can use verbatim repetitions and paraphrased repetitions to facilitate understanding of complex sentences (Small et al., 1997). *Verbatim repetitions* are recommended for communication with persons living with dementia and involve the repetition of a previous utterance in its entirety or with all content words carried over (Haberstroh et al., 2011; Savundranayagam & Lee, 2017; Savundranayagam & Moore-Nielsen, 2015; Small et al., 2003; Weitzel et al., 2011; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012) *Paraphrased repetitions* are also recommended and involve the repetition of the initial message while changing some of the content or structure of the utterance to aid comprehension (Dijkstra et al., 2002; Savundranayagam & Lee, 2017; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2011, 2014; Small et al., 2003; Small & Gutman, 2002; Wilson et al., 2013; Wilson, Rochon, Mihailidis, et al., 2012). Caregivers can use verbatim and paraphrased repetitions to facilitate comprehension and lower demands on working memory capacity instead of limiting communicative opportunities by relying solely on the use of simple sentences (Small et al., 1997). Persons living with dementia show improved comprehension after hearing complex sentences a second time (Small et al., 1997). Some strategies that can be used to

simplify speech appropriately within paraphrased repetitions and in general include: using one proposition at a time, using nouns instead of pronouns, using right-branching sentences, placing modifiers after verbs, and placing modifiers after nouns (Dijkstra et al., 2002; Haberstroh et al., 2011; Kemper & Harden, 1999; Perry et al., 2005; Ripich, 1994; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Caregivers should use *one proposition at a time* when presenting instructions or questions to improve comprehension and avoid instances in which persons living with dementia must divide their attention (Haberstroh et al., 2011; Savundranayagam & Lee, 2017; Savundranayagam & Orange, 2014; Small et al., 2003; Small & Gutman, 2002; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Caregivers should *use specific concrete nouns* to help make verbal messages more direct rather than using pronouns which can be more difficult to comprehend (Dijkstra et al., 2002; Perry et al., 2005; Weitzel et al., 2011; Wilson, Rochon, Mihailidis, et al., 2012). For example, a caregiver may avoid indirect references by saying, “Let me help you sit in the chair” instead of “Let me help you sit over there” (Weitzel et al., 2011). Grammatically complex sentences can be simplified by minimizing the use of pronouns. Thereby, less inferences are needed, and cohesion can be maintained. Caregivers should also reduce grammatical complexity where possible by phrasing their message as a *right-branching sentence* and avoiding the use of left-branching sentences (Kemper & Harden, 1999; M. Y. Savundranayagam & Moore-Nielsen, 2015). The left-branching form includes sentences where the subject and verb do not appear until later in the utterance after several initial elements (Kemper & Harden, 1999). For example, “Before having breakfast, you need to get dressed” is a left-branching sentence (Savundranayagam & Moore-Nielson, 2015) On the contrary, the subject and the verb, the most important elements, appear at or near the beginning of the preferred right-branching form (Kemper & Harden, 1999). For example, “You need to get dressed before having breakfast” is a right-branching sentence (Savundranayagam & Moore-Nielson, 2015). Finally, *placing modifiers after verbs* (e.g.,walk slowly with me) and *placing modifiers after nouns* (e.g., do you want juice, apple or orange?) can facilitate comprehension (Savundranayagam & Moore-Nielson, 2015).

Persons living with dementia often experience challenges when trying to follow complex and multi-step requests and instructions (Wilson et al., 2013). Caregivers should provide clear instructions one at a time to lessen refusal of care and encourage collaboration (Belzil & Vézina,

2015; Bourgeois et al., 2003). Caregivers are also recommended to use *positive instructions* to guide the person living with dementia on what to do (e.g., have a seat here; turn around please), as opposed to instructing them on what not to do (Belzil & Vézina, 2015). Research by Belzil and Vézina (2015) show that when instructions phrased in the positive form are used, persons living with dementia exhibit collaborative behaviours when they were already being collaborative or at stages when they have minimal language impairments.

Persons living with dementia may exhibit slower responses and long pauses during conversational interactions while processing information (Ripich, 1994). *Allowing time to respond* is a recommended communication strategy that caregivers are advised to use, with caution, when appropriate (Acton et al., 2007; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Small et al., 2003; Weitzel et al., 2011). Some researchers suggest extensive pauses, such as in the case of Weitzel and colleagues (2011) whose training intervention recommends waiting 15 to 20 seconds after asking a question for a response from the person living with dementia, prior to offering any repetitions. However, it is also conveyed that the dynamic nature of conversing with each person living with dementia may be unique depending on the individual and their disease progression (Müller & Guendouzi, 2005; Savundranayagam & Moore-Nielsen, 2015; Sabat, 1991). Pauses must be employed tactfully to not impose threats to the continuity and flow of the conversation, potentially being counterproductive and hindering the success of the interaction (Müller N & Guendouzi, 2005).

1.9.2 Language-based strategies facilitating expression

Persons living with dementia often experience challenges related to expression during interactions (Acton et al., 2007; Dijkstra et al., 2002; O'Brien et al., 2020; Ramanathan, 1997; Ripich, 1994; Savundranayagam & Orange, 2011, 2014; Tappen et al., 1997). Some specific expressive challenges include: word finding problems (Acton et al., 2007; Dijkstra et al., 2002; O'Brien et al., 2020; Savundranayagam & Orange, 2011, 2014), reduction in communication output (Dijkstra et al., 2002; Savundranayagam & Orange, 2011, Savundranayagam & Orange, 2014), difficulty remembering and processing what has been communicated (Dijkstra et al., 2002; Ripich, 1994), topic maintenance and conversational continuity (Acton et al., 2007; Ramananthan, 1997; Tappen et al., 1997), and increased awareness of communication problems (Ripich, 1994).

Word finding problems are a common early symptom associated with dementia (Acton et al., 2007; Dijkstra et al., 2002; O'Brien et al., 2020; Savundranayagam & Orange, 2011, 2014). Prompting the person living with dementia using an *unfinished sentence prompt* they are invited to complete with one or two omitted words is recommended in the literature (Santo Pietro & Ostuni, 2003). For example, a caregiver may say "Let me see, your daughter's name is ___" to cue the person living with dementia to fill in the blank (Santo Pietro and Ostuni, 2003). These prompts allow the person living with dementia to come to a solution to their word finding challenges on their own or practice vocabulary while still receiving support from their caregiver. *Allowing enough time* for the person living with dementia to respond is also recommended to enable them to overcome potential word finding difficulties (Acton et al., 2007; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Sabat, 1991; Small et al., 2003; Weitzel et al., 2011). Caregivers who refrain from interrupting and instead thoughtfully modify their own turn taking behaviour to allow time for the person living with dementia to overcome potential word finding issues, amongst other expressive difficulties, can promote interactive and informative discourse opportunities (Sabat, 1991).

There is often a reduction in communication output by the person living with dementia (Dijkstra et al., 2002; Savundranayagam & Orange, 2011, Savundranayagam & Orange, 2014) which can be accommodated by the use of several language-based strategies. *Yes/no questions* are a question-type recommended in the literature where the caregiver outlines a complete proposition that the person living with dementia is invited to complete with a confirmation or denial response (Ripich et al., 1999; Savundranayagam & Lee, 2017; Savundranayagam & Moore-Nielsen, 2015; Small et al., 2003; Small & Perry, 2005; Tappen et al., 1997; Wilson, Rochon, Mihailidis, et al., 2012). Questions in this format already provide complete propositions and require a simple yes/no response (Ripich et al., 1999). This may be effective when trying to accommodate difficulties related to generating additional information or responses or during collaboration on tasks that are more demanding (Ripich et al., 1999; Small & Perry, 2005). Yes/no questions that rely on semantic memory (e.g., do you want rice for dinner?) rather than a recollection of past events (e.g., did we have rice for dinner last night) were recommended (Small & Perry, 2005). *Closed-ended questions* that require a one-word answer were also recommended for their specificity and focus which can helpful when assisting persons living with dementia with activities of daily living during care (Tappen et al., 1997). Caregivers may also use questions that

involve asking the persons living with dementia for their opinion, perspective, permission, preferences, or needs by presenting them with clear options (Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Small & Perry, 2005; Wilson et al., 2013; Wilson et al., 2012). Ripich and colleagues (1999) examined the use of various question types and success of their outcomes and responses. The use of *choice questions* resulted in more successful outcomes in comparison to posing open-ended questions to persons living with dementia (Ripich et al., 1999). Caregivers who provide persons living with dementia with cues in the form of choices embedded in their question (e.g., would you like tea or lemonade?) are more likely to receive successful responses from persons living with dementia who can access preserved knowledge rather than generating a novel answer (Ripich et al., 1999).

Open-ended questions are also recommended when caregivers want to ask the person living with dementia for a description, explanation, or opinion that requires more than a one-word answer (e.g., what do you want to do?) (Acton et al., 2007; Perry et al., 2005; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Small & Perry, 2005; Tappen et al., 1997; Wilson et al., 2013; Wilson et al., 2012). They can enable the development of a therapeutic relationship between the caregiver and person living with dementia by promoting the unrestrained expression of feelings, opinions, and concerns (Tappen et al., 1997). Although open-ended questions may place more demands on the lexical-semantic, syntactic, and discourse-pragmatic processes, responses to this question type from the person living with dementia are often longer and semantically rich (Small & Perry, 2005; Tappen et al., 1997). Open-ended questions that rely on semantic memory rather than a recollection of past events are recommended (Acton et al., 2007; Small & Perry, 2005). Open-ended questions that require the person living with dementia to provide information based on episodic memory may result in conversation breakdowns (Acton et al., 2007; Small & Perry, 2005). Finally, *open leads* and *focused leads* are recommended to promote contributions from the person living with dementia (Acton et al., 2007; Tappen et al., 1997). When caregivers employ open leads such as, “Tell me how you are feeling today” in conversation, they facilitate the expression of feelings and concerns by the person living with dementia which may otherwise go unsaid or unacknowledged (Tappen et al., 1997). This strategy encourages the person living with dementia to contribute to the conversation and guide it towards topics that are of special interest or importance. A pressure-free conversation is created where persons living with dementia are free

to respond to the extent of their ability. They are neither strained to provide a specific and correct response nor forced to provide information that may be beyond their present reach. When the person living with dementia encounters difficulties contributing to the continuity of a conversation, caregivers may also use focused leads to facilitate conversational flow (Acton et al., 2007; Mayhew et al., 2001). Focused leads, such as "We certainly have had interesting weather lately, haven't we?" open conversation and attempt to guide it to a specific subject or direction (Acton et al., 2007).

Persons living with dementia may experience challenges related to topic maintenance and conversational continuity (Acton et al., 2007; Ramanathan, 1997; Tappen et al., 1997). Strategies that were previously presented, including open leads and focused leads may promote conversational continuity by inviting the person living with dementia into conversation on a predefined topic or one of their interest (Acton et al., 2007; Tappen et al., 1997). Furthermore, caregivers can also use strategies such as repetition of key words/topics, newsmarks, minimal cues, affirmations, and matching comments or associations to facilitate continuity (Acton et al., 2007; Ramanathan, 1997; Santo Pietro & Ostuni, 2003; Savundranayagam and Moore-Nielson, 2015). Caregivers can support the conversation by providing a *repetition of the key topics* or *words* to orient the person living with dementia (Dijkstra et al., 2002). Persons living with dementia often have diminished working memory capacity and therefore may find it difficult to maintain coherence, cohesion, and conciseness in conversation (Dijkstra et al., 2002). Caregivers who provide repetitions of the topic and key words related to what was being discussed minimize the demands on working memory and facilitate topic maintenance (Dijkstra et al., 2002). *Newsmarks* are responses that caregivers can use to indicate noteworthiness of a prior conversational turn (Ramanathan, 1997; Savundranayagam & Moore-Nielsen, 2015). Newsmarks, such as "really?" or "oh ya?", usually promote continuity of the interaction by leading to further talk by the speaker or by the listener of the noteworthy conversational turn (Ramanathan, 1997). These continuity elements can help persons living with dementia keep their conversations on track and facilitate recall. *Minimal cues* can help maintain conversational flow when the person living with dementia exhibits difficulty keeping its continuity (Acton et al., 2007). These are minimal statements (e.g., yes, okay) that do not contribute to the conversational topic, yet show encouraging engagement and interest from the conversational partner (Acton et al., 2007; Mayhew et al., 2001). It is also recommended that caregivers use affirmations that

display agreements in conversation with persons living with dementia (Ramanathan, 1997; Santo Pietro & Ostuni, 2003). These may often appear in the form of *minimal turns* (e.g., mhm, yes) acting as continuity elements within conversation to help keep the interaction on track (Ramanathan, 1997). Affirmations in this form can help the caregiver show interest in what the person living with dementia is saying by offering agreement (Santo Pietro & Ostuni, 2003). Lastly, the literature recommends the use of *matching comments/associations* during interactions with persons living with dementia (Santo Pietro & Ostuni, 2003). Caregivers are encouraged to try offering personal opinions or experiences in response to a comment made by the person living with dementia (Santo Pietro & Ostuni, 2003). Matching comments and associations can promote continuity and conversational flow during interactions that can sometimes become one sided (Santo Pietro & Ostuni, 2003; Savundranayagam & Moore-Nielson, 2015). Rather than asking follow-up questions which may lead to conversational roadblocks, caregivers who provide matching comments/associations can enable further responses from the person living with dementia by adding new information that can be built upon (Santo Pietro & Ostuni, 2003).

Persons living with dementia may sometimes exhibit increased awareness of communication problems that may cause them to self-correct or apologize for communication difficulties (Ripich et al., 1994). Caregivers can use positive feedback and affirmations to acknowledge feelings and provide reassurance during care interactions (Acton et al., 2007; Bourgeois et al., 2003; Ramanathan, 1997; Santo Pietro & Ostuni, 2003; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). *Affirmations* may help the caregiver acknowledge the feelings of the person living with dementia and show interest in they are saying by offering agreement and encouragement (Santo Pietro & Ostuni, 2003). Providing *positive feedback* and encouraging comments is also recommended to show support for the person living with dementia and to facilitate engagement in tasks and conversation (Acton et al., 2007; Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Giving positive feedback is ranked as one of the communication strategies that are most frequently used by caregivers of persons living with dementia (Bourgeois et al., 2003; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Dijkstra and colleagues (2002) suggest that a caregiver can facilitate the acceptance or satisfaction of the person living

with dementia prior to or following a task or procedure by acknowledging the concerns and feelings of the person living with dementia through positive feedback.

1.9.3 Language-based strategies facilitating other elements of care

Certain interactional challenges may arise during care interactions with persons living with dementia such as refusal of care (Belzil & Vézina, 2015), conversation breakdowns and gaps in mutual understanding (Savundranayagam & Moore-Nielson, 2014).

To address refusal of care by promoting collaboration and participation, caregivers can use language-based strategies such as announcing activity/intent clearly, asking for permission, politeness, and affirmations (Bourgeois et al., 2003; Medvene & Lann-Wolcott, 2010; O'Brien et al., 2020; Ramanathan, 1997; Santo Pietro & Ostuni, 2003; Savundranayagam & Moore-Nielson, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Multiple studies recommend that caregivers helping persons living with dementia with their care tasks should *announce each activity and/or intent clearly* (Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). This also includes explaining each step of a multi-step task and introducing a task at the very beginning (Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012). When initiating caregiving tasks and procedures, caregivers should first *ask the person living with dementia for their permission* (O'Brien et al., 2020; Weitzel et al., 2011). A simple "may I?" or "is that alright?" can help prepare the person living with dementia for the steps that will follow (Weitzel et al., 2011). Caregivers should also use *politeness* to help support the person living with dementia when they refuse care (Medvene & Lann-Wolcott, 2010; Savundranayagam & Moore-Nielsen, 2015). Finally, affirmations, specifically displaying an *intention to fulfill* and *softening* requests and instructions, can be used by caregivers when trying to address refusal of care (Ramanathan, 1997; Santo Pietro and Ostuni, 2003; Savundranayagam & Moore-Nielsen, 2015). Caregivers may demonstrate an intention to fulfill by offering to complete a request or task for the person living with dementia. For example, a caregiver can say "I will do that for you" if the client with dementia exhibits difficulty completing a specific care activity (Savundranayagam & Moore-Nielsen, 2015). Specific language can also be used to soften the directness of the request and put the person living with dementia at ease (Savundranayagam & Moore-Nielsen, 2015). For

example, a caregiver says "I know, I know, you don't like to have your hair combed. I'm almost done" in response to a resident pulling away when the caregiver is trying to comb their hair (Savundranayagam & Moore-Nielsen, 2015).

A communication breakdown includes miscommunication and misunderstanding of information that may be due to problems in speech production, expressive language structure, language processing, cognitive processes, or hearing problems (Clark & Schaefer, 1987; Perkins et al., 1998). Communication breakdowns between persons living with dementia and their caregivers and/or conversational partners may be the result of specific dementia-related symptoms such as word finding, memory, or attention difficulties (Samuelsson & HydéN, 2017). Communication breakdowns may also result from the mismatch between the expectations and reality of the communication and cognitive abilities of the person living with dementia (Perkins et al., 1998). Certain language-based strategies, including verification questions and comments, informing what was misunderstood, asking for repetitions, giving more information, and filling in missing information may support the resolutions of communication breakdowns (Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Wilson et al., 2013; Wilson et al., 2012). A *verification question/comment* is a form of indirect repair that is recommended to seek clarification on a potential misunderstanding or to verify understanding (Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson, Rochon, Mihailidis, et al., 2012). For example, a caregiver may ask "Do you mean _____?" to seek clarification. Caregivers can also address gaps in mutual understanding that arise in conversation by *informing the person living with dementia of what was misunderstood* (e.g., I don't understand what _____ means) (Savundranayagam & Orange, 2014). When a conversational turn from the person living with dementia is unclear or misunderstood/misheard, a caregiver may *ask them to repeat* what they said (e.g., pardon me?) (Orange et al., 1996; Sabat, 1991; Sabat, 2001; Savundranayagam & Moore-Nielsen, 2015). This repair strategy allows the caregiver to signal that a misunderstanding is the result of inattention, poor hearing, or imprecise speech, and resolve the breakdown before proceeding (Savundranayagam & Orange, 2014). Caregivers may *give more information* as a repair strategy to add clarification or specification to an utterance that may have resulted in a communication breakdown (Savundranayagam & Orange, 2014). Finally, when persons living with dementia encounter a word finding problem or other challenges in conversation, caregivers may *fill in the missing information* (Savundranayagam & Orange, 2014). For example, a

caregiver may carry out a repair by filling in the missing word when observing that a person living with dementia is experiencing a word finding problem. Informing what was misunderstood, giving more information, and filling in missing information are effective language-based strategies that were also rated as moderately helpful by caregivers of persons living with early- and middle-stage Alzheimer's disease (Savundranayagam & Orange, 2014).

1.9.4 Other Language-based Strategies

Addressing by name and/or title is frequently recommended when greeting the person living with dementia and calling their attention during care (Acton et al., 2007; Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Wilson and colleagues (2012) cited that this was amongst the most frequently used verbal communication strategies by caregivers participating in study tasks that were completed successfully. In fact, in another study by Wilson and colleagues (2012), using the name of the person living with dementia was also ranked by caregivers as one of the most effective communication strategies for both moderate and severe Alzheimer's Disease. Most persons living with severe Alzheimer's disease are in fact able to recognize and respond appropriately to the spoken form of their name being used to greet or call their attention (Kim & Bayles, 2007). Formal caregivers are therefore urged to address the person living with dementia by their preferred name and title, and to avoid terms of endearment, such as "honey" or "sweetie", categorized as elderspeak (Weitzel et al., 2011). Thereby, persons living with dementia can be recognized as an individual first and foremost, rather than be infantilized by their illness (Savundranayagam & Moore-Nielsen, 2015). Finally, caregivers of persons living with dementia should greet persons living with dementia when entering and leaving the room (Kim & Bayles, 2007; Savundranayagam & Moore-Nielsen, 2015). Persons living with Alzheimer's disease whose communication skills were assessed using the Functional Assessment Staging scale responded appropriately to greetings and scored highest in this subsection (Kim & Bayles, 2007). Kim and Bayles concluded that this performance reflects an ability and desire to communicate even though other more complex linguistic tasks may pose challenges.

1.10 Statement of the Problem

PCC can improve interpersonal care relationships and contribute to positive outcomes for both formal caregivers and persons living with dementia (Harwood et al., 2012; O'Rourke et al., 2020; Savundranayagam et al., 2007; Savundranayagam & Moore-Nielsen, 2015; Viau-Guay et al., 2013; Young et al., 2011). Likewise, the use of language-based strategies can facilitate the coherence, clarity, reciprocity, and continuity of conversational interactions (Savundranayagam and Moore-Nielson, 2015) while improving formal caregivers' experiences providing care (Barbosa et al., 2016; Conway & Chenery, 2016; de Vries, 2013). Although PCC and language-based strategies are independently effective, there is little knowledge about which language-based strategies support PCC. PCC strategies, including using communication that recognizes and validates persons living with dementia, facilitates their participation in interactions, and negotiates with them on their needs and desires (Kitwood, 1997), may sometimes appear abstract and challenging to put into practice. In contrast, language-based strategies' specific selling points are that they are clear, teachable, practical, and easily applicable. However, this does not automatically mean they are person-centered. Knowing how language-based strategies may also accomplish the PCC goals of recognition, negotiation, validation, and facilitation would be beneficial. Further, only one study has explored the overlap between PCC indicators and language-based strategies employed by nursing assistants in long-term care (Savundranayagam & Moore-Nielsen, 2015). Presently, there is no research examining the connection between PCC and language-based strategies used by PSWs who provide home care for persons living with dementia. With the expected change in demographics and the desire for aging at home (National Institute of Ageing, 2020), there is a genuine need for the analysis of caregiver communication and the connection between the person-centered and language-based approaches to communication with persons living with dementia in the home care setting. Therefore, exploring the communication practices of PSWs caring for persons living with dementia in a home care setting, which will be the prominent care setting in future years (Home Care Ontario, 2020) is fruitful.

1.11 Aims and Research Questions

The present study aims to explore the link between a set of recommended language-based strategies and the principles of person-centered care. This study is a timely follow-up to the

research by Savundranayagam and Moore-Nielson (2015) who investigated language-based strategies used by nursing assistants in the United States of America during interactions with persons living with dementia in long-term care. In contrast, this study will build on the observed patterns between the two sets of strategies and provide further insights on the diversity of language-based strategies used specifically with persons living with dementia in a Canadian home care setting. To bridge the present gaps in the caregiving literature, the purpose of this study is to investigate the overlap between PCC strategies, missed opportunities for PCC, and effective language-based strategies used in the home care setting. Dementia care can be enriched with teachable and concrete strategies that also promote person-centered care if person-centered language-based strategies are identified. Also, it would be prudent to explore instances in which effective language-based strategies may inadvertently contribute to missed opportunities for PCC. Further, this research can minimize gaps in the literature concerning the connection between the language-based and person-centered approaches and home care for persons living with dementia.

Accordingly, the central research questions that frame the present study are as follows: Which effective language-based strategies also support PCC during home care interactions between PSWs and persons living with dementia? Which effective language-based strategies are implicated in missed opportunities for PCC during home care interactions between PSWs and persons living with dementia?

1.12 Theoretical Foundations

The Communication Predicament of Aging Model and the Communication Enhancement Model are frequently cited as influences in research related to communication with persons living with dementia. Similarly, they provide the theoretical basis necessary to ground the present study. These models in combination provide a theoretical foundation that affirms the importance of understanding the nuances involved in caring for a person living with dementia, assuring effective communication during interactions, the consequences of failing to communicate in an individualized and destigmatized manner, and finally why the research problem at hand should be explored.

The Communication Predicament of Aging Model frames the urgency of this research problem

and why insight into effective communication practices is necessary. It is therefore an integral component of this research's theoretical basis. Negative social stereotypes and age-associated misconceptions may falsely depict a need for communication adjustments that are often patronizing in nature (Ryan et al., 1986). This can disadvantage the person living with dementia by reinforcing stereotypes that negatively impact how others communicate with them and how they communicate with others. The present study is focused on exploring and presenting evidence-based communication strategies that will prevent caregivers from falling prey to communication adjustments that perpetuate stereotypes and harmful physical, social, and psychological outcomes implicated in this model.

The Communication Enhancement Model provides guidance on how to improve communication with persons living with dementia (Ryan et al., 1995). This research study focuses in large part on the person-centered approach (Kitwood, 1997). There is criticism that this approach often lacks specificity regarding what is needed to communicate with persons living with dementia in a person-centered manner and how persons living with dementia are involved in and contribute to interactions (Morris et al., 2020). The Communication Enhancement Model contributes a foundational basis to the person-centered approach. When caregivers use language-based strategies, PCC strategies, and the person-centered language-based strategies that will be identified, they can enhance communication interactions appropriately. Further, the Communication Enhancement Model outlines that interactions can be enhanced when caregivers use effective strategies that respond to the individualized needs and expectations of a person living with dementia (Ryan et al., 1995). This individualized focus can be tied to PCC which aims to empower persons living with dementia by recognizing them as a unique individual beyond their diagnosis (Kitwood, 1997; Savundranayagam and Moore-Nielson, 2015). Likewise, effective language-based strategies also enhance communication by guiding caregivers to respond to the individual needs and abilities of the person living with dementia (Savundranayagam & Moore-Nielsen, 2015). Both sets of communication strategies acknowledge that the person living with dementia is an active agent in conversation rather than a passive observer. Caregivers who develop this nuanced understanding of the older adult as exceedingly capable would tailor their communication to empower the person living with dementia (Ryan et al., 1995; Orange et al., 1995). The Communication Enhancement Model, therefore, provides a theoretical foundation underpinning the need for communication practices

and strategies to be tailored to individual needs, strengths, and weaknesses rather than the learned stereotypes implicated in the Communication Predicament of Aging Model (Ryan et al., 1995). This ultimately ensures that persons living with dementia are more likely to be empowered rather than stigmatized by their verbal communication experiences.

Chapter 2

2 Method

Analysis of conversation protocols were used to investigate whether language-based strategies and PCC indicators overlap during home care interactions between PSWs and persons living with dementia. This chapter will provide information related to data collection, preparation, and analysis methods used in the present study.

2.1 Analysis of Conversations

This study involved the analysis of conversations following a social psychological approach to the study of interpersonal communication. According to this approach, communicative events are assigned to specific predefined, independent categories (Roger & Bull, 1989). Effective classification systems should be comprehensive and account for the complexities of communicative behaviours during interactions (Roger & Bull, 1989). Research following this approach may be conducted in laboratory or naturalistic settings (Atkinson, 1985; Sidnell, 2016; Sidnell & Stivers, 2013). The classification systems used in the analysis of conversations may undergo revisions and refinement as the understanding of interpersonal communication evolves over the course of data analysis (Roger & Bull, 1989).The coding stage typically involves the simplification of conversational messages into categorical instances. To assure that coding is objective and to demonstrate construct validity, reliability procedures between coders are conducted (Hopper, 1989). The coding and analysis stages are independent and consecutive within analysis of conversation research following the social psychological approach. Generally, the analysis phase following the SP approach relies on examining the coding outcomes rather than continued analysis of the transcripts themselves (Hopper, 1989). In conclusion, social psychological research involving the analysis of conversations involves multiple simplification processes where recordings are transcribed into words, words are tabulated according to instances of predefined categories, and the occurrence of categories are analyzed to provide specifications and conclusions related to phenomena of interest (Hopper, 1989).

2.2 Data Collection

2.2.1 Be EPIC

The current study used audio-recorded home care interactions collected in 2018 *prior* to PSWs receiving the Be EPIC PCC training. Be EPIC is an evidence-informed communication intervention, developed by Dr. Marie Y. Savundranayagam and team, designed to educate and train formal caregivers on using PCC with their clients living with dementia. It focuses on enhancing routine care interactions for persons living with dementia and formal caregivers alike, through assessment of the **E**nvironment, using **P**CC, focusing on the PSW-client relationship (**I** matter too), and incorporating the **C**lient's abilities and preferences (Savundranayagam et al., 2020).

2.2.2 Participants and Procedures

Be EPIC was conducted with PSWs who provide home care for persons living with dementia. A subset of participants, forming the wait list control group, was selected to obtain audio-recordings of routine home care interactions with their clients living with dementia. Routine in-home care interactions between eleven PSWs and their clients living with dementia were audio-recorded during five occasions between January and September 2018. The present study used baseline data consisting of audio recordings of home care interactions collected at three time points, *prior to* the Be EPIC PCC training. All participants, including PSWs and clients living with dementia (or their legal substitute decision makers), provided written consent to participate in all aspects of the study, including audio-recording of home care interactions.

PSWs who met the following inclusion criteria were eligible to participate in Be EPIC and were thereby eligible for inclusion in the present study.

- Minimum 18 years of age
- Minimum 6 months experience working with persons living with dementia
- Completed PSW program at a school board, or private or public college
- Currently employed in home care
- Able to attend Be EPIC training sessions
- Possess sufficient English communication skills to participate in program

2.2.2.1 Demographic Data

Demographic data for the PSWs who formed the Be EPIC wait list control group are presented in Table 1. All eleven participants were female. The ages of the participants ranged from 21 to 62 years. The average age was 47.2 years. Ten participants self-identified as White (Non-Hispanic) and one participant self-identified as Black or African-Canadian. Six participants were college graduates (54.5%), four were high school graduates (36.4%) who also completed school board PSW program, and one received a graduate degree or above (9.1%). Two participants (18.2%) provided care for one to five clients/week, one participant (9.1%) cared for six to 10 clients/week, and eight participants (72.7%) provided care to more than 10 clients/week. The average amount of time spent working in home care was 4.5 years. The amount of home care experience ranged from approximately 5 months to 9 years. The average amount of time per week spent providing home care was 32.4 hours. Finally, the majority of participants (n=8, 72.7%) provided home care to more than 10 clients.

Table 1

Demographic Data for Be EPIC PSW participants in Wait List Control Group

Variable	N	%
Sex		
Female	11	100
Age		
Mean (Range)	47.2 (21-62)	-
Ethnicity		
White (Non-Hispanic)	10	90.9
Black/African-Canadian	1	9.1
Education		
High school	4	36.4
College	6	54.5
Graduate degree or above	1	9.1
Years in home care		
Mean (Range)	4.5 (0.42-9)	-
Hours/week working in home care		
Mean (Range)	32.4 (10-50)	-
Number of home care clients		
1-5	2	18.2
6-10	1	9.1
>10	8	72.7

Demographic data for the persons living with dementia included in this study are presented in Table 2. Seven participants were female (58.3%) and five participants were male (41.7%). The ages of the participants ranged from 77 to 97 years. The average age was 87.8 years. All twelve participants were White (Non-Hispanic). Four participants lived alone in their own homes (33.3%), four participants lived in a group environment (33.3%), three participants lived in a household with their family caregiver (25.05), and one participant lived with another relative (8.3%). Over two-thirds of participants were diagnosed with dementia and had probable Alzheimer's Disease (66.6%).

Table 2

Demographic data for Be EPIC participants living with dementia

Variable	N	%
Sex		
Female	7	58.3
Male	5	41.7
Age		
Mean (Range)	87.8 (77-97)	-
Ethnicity		
White (Non-Hispanic)	12	100
Living situation		
Lives alone in his/her home	4	33.3
Lives in group environment	4	33.3
Lives in household with family caregiver	3	25.0
Lives with another relative	1	8.3
Memory-related impairment		
Alzheimer's Disease probable, dementia diagnosed	8	66.6
Alzheimer's Disease suspected	2	18.2
Mild Cognitive Impairment	1	8.3
Other: Vascular dementia secondary to stroke	1	8.3

2.3 Data Preparation

2.3.1 Conversational Transcripts

Home care interactions between PSWs and their clients living with dementia were recorded at 3 time points – 11 dyads at timepoint 1, 10 dyads at timepoint 2, and 9 dyads at timepoint 3. Two PSWs withdrew from the study – one at timepoint 2 and one at timepoint 3. This study therefore

involved the analysis of 30 conversational transcripts of in-home interactions between eleven PSWs and their clients living with dementia.

The audio-recorded interactions were transcribed orthographically by trained transcribers, following the Systematic Analysis of Language Transcripts (SALT; Miller et al., 2012) conventions. A summary of the applicable transcription conventions can be found in Appendix B. Next, orthographically transcribed conversations were segmented into communication units, or c-units. A c-unit includes the main clause of a spoken utterance with all subordinate clauses attached and cannot be further broken down without losing its intended meaning (Sidnell & Stivers, 2013). Analysis of conversation is facilitated when spoken language is segmented into a base unit such as utterances or in the present study, c-units. C-unit segmentation methods followed standardized SALT c-unit segmentation rules (Miller et al., 2012). A review of all transcripts was conducted in September 2021 prior to data analysis to ensure accuracy and precision of orthographic transcription and c-unit segmentation.

Reflexive notes on the nature of each interaction allowed us to determine that half of the audio-recorded interactions (n=15) were routine care and the other half (n=15) were leisure-based. Care interactions that involved a major focus on the completion of routine care activities were classified as routine care interactions. Care interactions that were predominantly conversation-based and involved activities beyond routine care were classified as leisure-based. The duration of audio-recorded interactions ranged from approximately 5 minutes to 3 hours. The shortest interactions involved quick morning check-ins and routine care activities. The longest interactions involved activities such as playing games, taking a walk, or going on a drive, and were conversational in nature. The transcripts ranged from 41 to 1506 PSW c-units in length and 3 to 1230 person living with dementia c-units in length. The average number of PSW c-units across all 30 transcripts was 378.23. The average number of c-units by the person living with dementia across all 30 transcripts was 367.23. Transcripts were deidentified and maintained as such throughout the course of the present study. Transcripts from Be EPIC baseline data were used in this study; hence change in communication over time was not an area of interest. However, deidentification of transcripts ensured that subsequent data analysis would not be influenced by awareness of specific participant or client information.

2.3.2 Language-based Strategy Coding

A literature review was conducted to explore the dementia caregiving literature and identify language-based strategies effective for communication with persons living with dementia. The existing codebook for language-based strategies developed by Savundranayagam and Moore-Nielson (2015) was updated with the findings from the literature review presented in Chapter 1. Additional language-based strategies and new references for existing language-based strategies were integrated into the 2015 codebook. Ultimately, the updated codebook (Appendix C) consisted of 33 language-based strategies which were used to code conversational transcripts in the present study. The language-based strategies and shortened codes are presented in Table 3 below.

Table 3

Language-based Strategies and Abbreviated Codes

Language-based strategies	Abbreviated codes
1) One proposition at a time	OneProp
2) Positive instructions	PosIns
3) Nouns instead of pronouns	Noun
4) Right-branching sentences	RBSentence
5) Place modifiers after verbs	Verb-Mod
6) Place modfiers after nouns	Verb-Noun
7) Verbatim repetitions	VRep
8) Paraphrased repetitions	PRep
9) Repetition of key words/topics	KeyRep
10) Give positive feedback	PosFB

Language-based strategies	Abbreviated codes
11) Matching comments	MatchC
12) Matching association	MatchA
13) Politeness	Polite
14) Affirmations	Affirm
15) Greetings	Greet
16) Address by name and/or title	AddName
17) Allow time to respond	Time
18) Open-ended questions	OpenQ
19) Yes/no questions	YNQ
20) Closed-ended questions	ClosedQ
21) Choice questions	ChQ
22) Verification questions/comments	VerQ
23) Repetition-seeking questions	RepQ
24) Permission-seeking questions	PerQ
25) Open leads	OLead
26) Focused leads	FLead
27) Minimal cue	MinCue
28) Newsmarks	News
29) Announce activity/intent clearly	AnnounceAI
30) Unfinished sentence prompt	Prompt
31) Give more information	GiveInfo
32) Fill in missing information	FillInfo
33) Inform what was misunderstood	Inform

Language-based strategy coding of all 30 conversational transcripts took place in October and November 2021 and followed protocols established by Savundranayagam and Moore-Nielson (2015). Deidentified transcripts were copied into Excel to facilitate coding and subsequent overlap analysis. Only PSW utterances were coded for language-based strategies as this study focuses on effective communication practices that can be employed by those providing care to persons living with dementia. Each c-unit was assessed alongside the 33 language-based strategies identified from caregiving literature.

C-units that did not receive a language-based strategy code were marked as "Uncoded" on Excel. C-units could be coded for multiple language-based strategies, where applicable. For example, instances where a PSW asked a yes/no question while pausing to wait for a response from the person living with dementia would be coded as a yes/no question [YNQ] and allow time to respond [Time]. Similarly, a c-unit where a PSW rephrased an open-ended question that may have posed initial comprehension problems for the person living with dementia would receive the paraphrased repetition [PRep] and open-ended question [OEQ] code. Ultimately, all the codes that occurred alongside one another were consolidated into a list of possible combination codes for the dataset. This ensured that specific language-based strategies that recurred in combination with others would not be over-represented in the final overlap analysis and frequency of overlap depiction. Finally, language-based strategy coding was reviewed to ensure that all c-units were coded for their corresponding strategies as accurately as possible.

2.3.3 PCC Coding

Conversational transcripts were analyzed for PCC using a previously developed codebook (Savundranayagam et al., 2007; Savundranayagam, 2014). It guided the coding of PCC indicators (recognition, negotiation, validation, facilitation) as well as missed opportunities for PCC (missed-opportunity omission and missed opportunity alternative) observed during the home care interactions. Table 4 provides a brief description of the PCC indicators and missed opportunities for PCC.

Table 4

PCC Indicators and Missed opportunities for PCC

Indicator	Description	Examples
Recognition (REC) (Kitwood, 1997)	Recognition involves acknowledging the person living with dementia as a person, affirming them uniquely, calling them by name, and incorporating their life story in conversation. Humour with appropriate tone of voice may also be an example of recognition as it highlights the shared relationship between the PSW and person living with dementia.	PSW: Good morning Anita! [REC] PSW: Come along Mrs. Jones, your dinner is being served. [REC] PSW: How is your wife doing? [REC]
Negotiation (NEG) (Kitwood, 1997)	Negotiation involves consulting with the person living with dementia on their preferences, desires, and needs. Negotiation also includes confirming whether they correctly understood the client's needs.	PSW: Are you in pain? [NEG] PSW: Would you like to walk over together before the meals are served? [NEG] PSW: Do you want something nice and warm on? [NEG]
Validation (VAL) (Kitwood, 1997)	Validation involves acknowledging the feelings of the person living with dementia and providing a response on the feelings level. Using empathy and understanding, responding sensitively, anticipating a need, and complimenting the person living with dementia are instances of validation observed during interactions.	PSW: You have managed well this morning since you've been worried about Mary. [VAL] PSW: Oh I would never let you be lost. [VAL] PSW: Here are you glasses. You look sophisticated. [VAL]
Facilitation (FAC) (Kitwood, 1997)	Facilitation involves working together with the person living with dementia, involving their abilities in a shared task, and filling in the missing parts of a task/action. It also includes asking the person living with dementia about their life, their thoughts, and experiences to find out more about them.	PSW: Can I help you? [FAC] PSW: Tell me what it is and we can look for it together? [FAC] PSW: So what were your hobbies when you were young? [FAC]

Indicator	Description	Examples
Missed-Opportunity Alternative (MO:ALT) (Savundranayagam, 2007; Savundranayagam, 2014)	Missed-opportunity alternative involves instances where PCC could have been used, but instead a non-person-centered alternative was used. This also includes patronizing communication, directive statements, and failing to affirm the client's feelings. It may also involve instances where the tone or nonverbals present missed opportunities for PCC.	PSW: Comb your hair now. [MO:ALT] PSW: Are we ready for our bath? [MO:ALT] PSW: Take this medicine for me. [MO:ALT]
Missed-Opportunity Omission (MO:OM) (Savundranayagam, 2007; Savundranayagam, 2014)	Missed-opportunity omission involves instances where a person-centered utterance could have been used, but instead there was a nonresponse or minimal response. It may also include ignoring what the person living with dementia said, failing to greet the person living with dementia by name, and not allowing enough time to respond.	Client: Ouch that hurt. PSW: Okay. [MO:OM] PSW: How are you today? [MO:OM] PSW: My name is Lynn.

PCC coding of all 30 conversational transcripts took place in November and December 2021 and followed protocols established by Savundranayagam and Moore-Nielson (2015). Deidentified transcripts were copied into Excel to facilitate coding and subsequent overlap analysis. All columns with language-based strategy codes were hidden so that it would not influence the second round of coding following the PCC framework. Only PSW utterances were coded for PCC indicators and missed opportunities for PCC since this study focused on effective communication practices by those providing care to persons living with dementia. Each c-unit was assessed alongside the four PCC indicators (recognition, negotiation, validation, facilitation) and missed opportunities for PCC (missed-opportunity alternative, missed-opportunity omission) (Savundranayagam et al., 2007; Savundranayagam, 2014). C-units that did not receive a code for

either a PCC indicator or a missed opportunity were marked as “Uncoded” on Excel. This enabled the representation of PSW c-units that were either uncoded under both frameworks or coded under one framework but not the other. The latter represents all PSW c-units that did not exhibit overlap, although they may have been coded as person-centered/missed-opportunity or an effective language-based strategy alone. Unlike language-based strategy coding, the PCC coding framework does not allow for c-units to be coded for multiple indicators. Coders had to decide which PCC indicator or missed-opportunity for PCC code best captured the essence of the PSW’s c-unit. Once this second round of coding was complete, overlap analysis of PCC and missed opportunities for PCC alongside language-based strategies commenced.

2.4 Reliability

2.4.1 Inter-rater reliability

Reliability of both coding frameworks was established through independent coding of a subset of conversational data by two trained coders, comparison of agreement and disagreement at the c-unit level, and calculation of the Scott’s pi measure of inter-rater reliability. Scott’s pi, developed by William A. Scott in 1955, is an inter-rater reliability measure that is most suitable for nominal data with two coders (“Intercoder Reliability Techniques,” 2017). It allows for the comparison of the amount of agreement observed between two coders with the amount of agreement that would be expected as a result of chance. If the coding framework at hand is reliable, the amount of agreement that is observed would exceed the amount of agreement expected due to chance alone. Scott’s pi was specifically chosen above percent agreement for its consideration of agreement due to chance and the fact that it is a conservative measure of inter-rater reliability.

Two independent researchers coded 20% of all transcripts to assess the reliability of the language-based strategy and PCC coding frameworks. Therefore, 2,269 c-units out of 11,347 total c-units were targeted to be coded twice to assess inter-rater reliability. Transcripts were chosen one-by-one at random using a computer randomizer application until the total number of c-units in the subset was as close as possible to 2,269 c-units. Eight conversational transcripts with 2,312 cumulative c-units (20.38%) were coded. The average number of PSW c-units of the subset of files (n=8) included in the inter-rater reliability assessment was 289 c-units, which is

similar to the average number of PSW c-units (n=378) for all 30 transcripts included in this study.

Coding was compared c-unit by c-unit to determine observed agreement once independent coding of language-based strategies for the eight reliability transcripts was complete. Discussions on initial disagreements were held to see if consensus could be reached. If not, they were considered disagreements and were indicated on a matrix of results for the corresponding transcript. Once agreement counts across all transcripts were finalized, Scott's pi calculations were conducted to determine the extent of agreement observed, the extent of agreement that could be expected due to chance, and finally the Scott's pi reliability measure which represents the strength of agreement. A set of benchmarks for Scott's pi ranges (Table 5) were used to assess whether acceptable levels of inter-rater reliability were achieved ("Intercoder Reliability Techniques," 2017). The Scott's Pi reliability measure for the language-based strategy coding framework was 0.97, which constituted "almost perfect" agreement between coders. The Scott's Pi reliability measure for the PCC coding framework was 0.99, which also constituted "almost perfect" agreement between coders.

Table 5

Scott's Pi Ranges for Inter-rater Reliability

Scott's Pi	Strength of Agreement
<0.00	Poor
0.0 - 0.20	Slight
0.21-0.40	Fair
0.41-0.60	Moderate
0.61-0.80	Substantial
0.81-1.00	Almost Perfect

2.5 Overlap Analysis

Once coding according to both coding frameworks was completed and reviewed, the language-based strategies that corresponded with one of the four PCC indicators (recognition, negotiation, validation, facilitation) were analyzed. This allowed for the determination of whether an overlap between both sets of communication strategies exists and the specific nature of the overlap. The

nature of the overlap with PCC indicators was investigated by assessing the language-based strategies that overlapped most frequently with each of the PCC strategies using the protocol established by Savundranayagam & Moore-Nielsen (2015). In addition, the second research question was addressed by analyzing the overlap between language-based strategies and missed opportunities for PCC (missed-opportunity alternative, missed-opportunity omission). The nature of the overlap with missed opportunities for PCC was investigated by assessing the language-based strategies that overlap most frequently with each of the missed-opportunity codes. A subanalysis was also conducted within interactional contexts to allow us to investigate the use of PCC strategies, language-based strategies, and whether there were any variations in language-based strategies that support PCC during routine care and leisure-based interactions.

Chapter 3

3 Results

The present study aimed to investigate how language-based strategies support PCC during home care interactions between PSWs and persons living with dementia. This chapter presents major findings, including frequency of overlap between PCC indicators and language-based strategies and frequency of overlap between missed opportunities for PCC and language-based strategies.

3.1 Summary of Results

The overlap between language-based strategies and PCC indicators and the overlap between language-based strategies and missed opportunities for PCC were analyzed. Figure 1 shows that of 11,347 PSW c-units analyzed, 2,578 c-units overlapped with PCC indicators and 433 c-units overlapped with missed opportunities for PCC. Language-based strategies overlapped with 39% of all c-units coded as recognition, 95% of all c-units coded as negotiation, 64% of all c-units coded as validation, and 49% of all c-units coded as facilitation. For missed opportunities for PCC, 55% of all c-units coded as missed-opportunity alternative overlapped with language-based strategies and 81% of all c-units coded as missed-opportunity omission overlapped with language-based strategies.

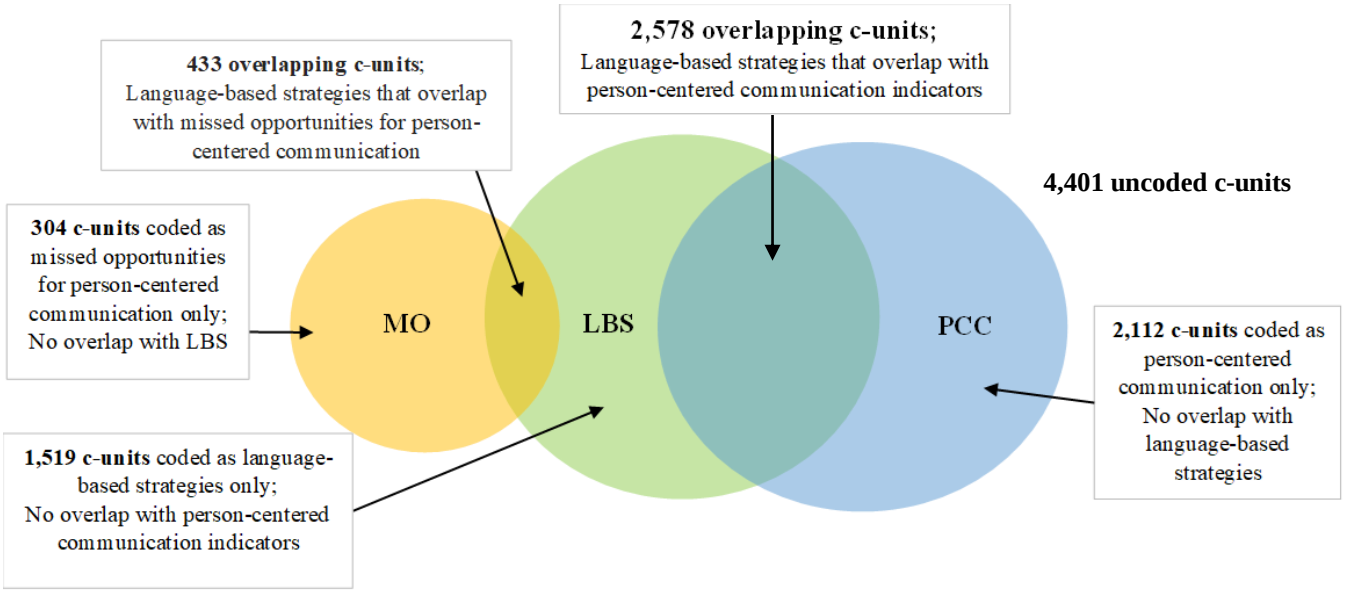

Figure 1. Summary of results for overlap analysis.

3.2 Overlap between Language-based Strategies & PCC

3.2.1 Recognition

Recognition involves acknowledging the person living with dementia as a person, affirming them uniquely, calling them by name, and incorporating their life story in conversation (Kitwood, 1997). Of 402 PSW c-units coded as recognition, 160 c-units exhibited overlap with language-based strategies. Language-based strategies that overlapped with recognition at a frequency greater than or equal to 1% are displayed in Figure 2.

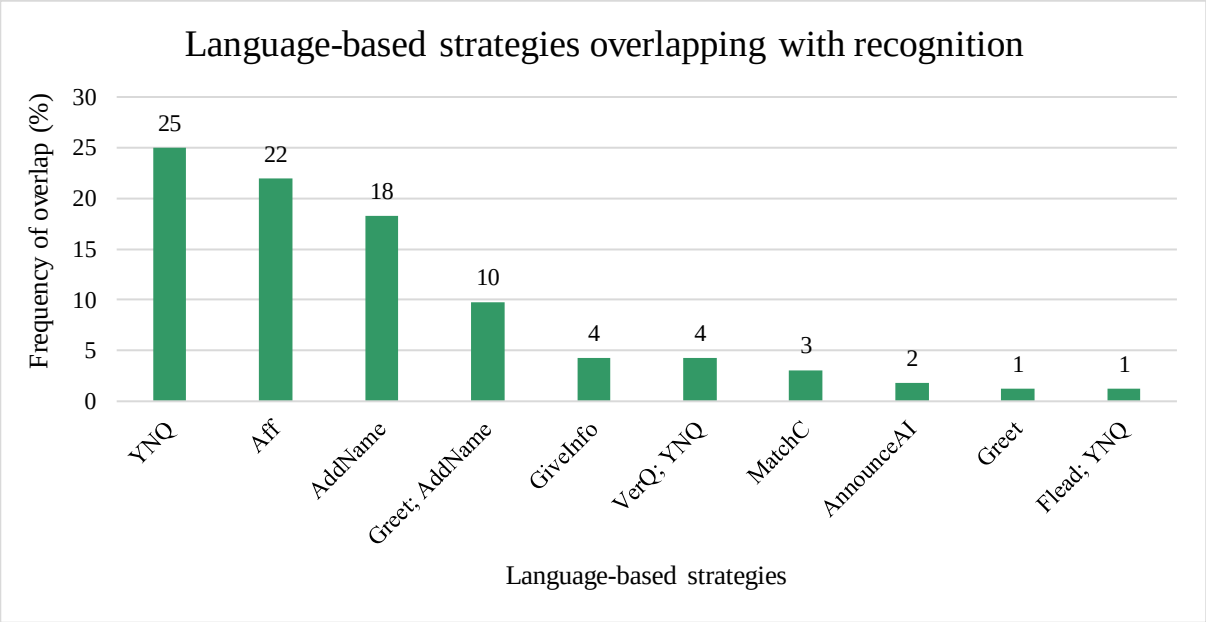

Figure 2. Frequency of language-based strategies coded as recognition.

Note. **YNQ** = Yes/no questions; **Aff** = Affirmations; **AddName** = Address by name and/or title; **Greet; AddName** = Greetings and address by name and/or title combination; **VerQ; YNQ** = Verification questions and yes/no questions combination; **MatchC** = Matching comments; **AnnounceAI** = Announcement of action/intent; **Greet** = Greetings; **FLead; YNQ** = Focused leads and yes/no questions combination

Examples of language-based strategies overlapping most frequently with recognition (yes/no questions, affirmations, addressing the person living with dementia by name/title, greetings combined with addressing the person living with dementia by name/title) are listed below.

Example 1: Yes/No Question & Recognition

In the excerpt below, the PSW asks a yes/no question about the client's family member in a manner that indicates awareness of their life history and personal relationships. This yes/no question also highlights the PSW-client relationship and enables the client's life story to be integrated into the conversation, thereby demonstrating recognition.

Client with dementia: But my daughter and her husband likes the way>
Client with dementia: She likes camping.
Personal Support Worker: Mhhm. [Minimal Cue]
Client with dementia: Even when they were young.
Client with dementia: They had fun.
Personal Support Worker: Mhhm. [Minimal Cue]
Client with dementia: But not her husband.
; :02 second pause
Client with dementia: Everyday *SUBJ wanted to come home to sleep. {EN: Laughs}
Personal Support Worker: Is that Lucy's husband? [Recognition] [Yes/No Question]
Client with dementia: Huh?
Personal Support Worker: Lucy's husband? [Recognition] [Paraphrased Repetition; Yes/No Question]
Client with dementia: Yah.

Example 2: Affirmation & Recognition, Address by Name/Title & Recognition

In the excerpt below, the PSW uses an affirmation to acknowledge the feelings of the client with dementia and demonstrates awareness of their personal relationships and life story (see first bolded c-unit). By commenting on the client's family member, Kelly, and her supportive actions, the PSW weaves biographical information into conversation using an affirmation. After the PSW uses an affirmation, the client living with dementia shares even more information regarding her family. The overlap between recognition and the language-based strategy, address by name/title, is also evident, as indicated in bold toward the end of the excerpt. The PSW shows recognition

by employing humour with an appropriate tone of voice, thus highlighting their shared relationship, and also uses the client's name to acknowledge them as a person.

Client with dementia: Well you knew my husband>
Personal Support Worker: No, I never met Walter. [Recognition]
Client with dementia: You never did eh?
Personal Support Worker: No.
Client with dementia: Well he came and talked to them.
Client with dementia: And he said I know my time is up.
Personal Support Worker: Okay. [MinCue]
Client with dementia: Yah You know but I would like a really nice place for Edith to live in.
Personal Support Worker: And he found a place for you. [Recognition]
Client with dementia: Uh-huh.
Client with dementia: He looked out for me.
Personal Support Worker: Yes. [Validation] [Affirmation: Minimal turn]
Personal Support Worker: And your kids are so good for you. [Validation] [Affirmation]
Client with dementia: Yes.
Personal Support Worker: Kelly has just done a remarkable job. [Recognition] [Affirmation]
Client with dementia: Yes.
[…]
Client with dementia: And we have a good time.
Personal Support Worker: And you've got two other kids.
Client with dementia: Oh god.
Personal Support Worker: Jeff and Lisa.
Client with dementia: Yah.
Client with dementia: That's right.
Client with dementia: I had lot of kids.
Personal Support Worker: Yes, you had 5.
Personal Support Worker: One passed away.
Client with dementia: Yah.
Client with dementia: Michael.
Personal Support Worker: A long long time ago.
Client with dementia: I couldn't stop.
{both laugh}!
Personal Support Worker: Wam Bam Thank you Ma'am.
Personal Support Worker: Next!

Personal Support Worker: I know your type, Edith. [Recognition] [Address by Name/Title]
Personal Support Worker: Oh boy!
Personal Support Worker: We should talk more often.

Example 3: Greeting; Address by Name/Title & Recognition

The excerpt below demonstrates how language-based strategies can be used in combination to support certain PCC indicators. In this example, the PSW enters their client's room and initiates the interaction by simultaneously affirming them uniquely using a greeting and addressing them by name within the same c-unit.

Personal Support Worker: %Knock knock.
Personal Support Worker: Hi Anne! [Recognition] [Greeting; Address by Name/Title]
Client with dementia: Hi!

3.2.2 Negotiation

Negotiation involves consulting with the person living with dementia on their preferences, desires, and needs (Kitwood, 1997). Of 328 PSW c-units coded as negotiation, 312 c-units exhibited overlap with language-based strategies. Language-based strategies overlapping with negotiation at a frequency greater than or equal to 1% are displayed in Figure 3.

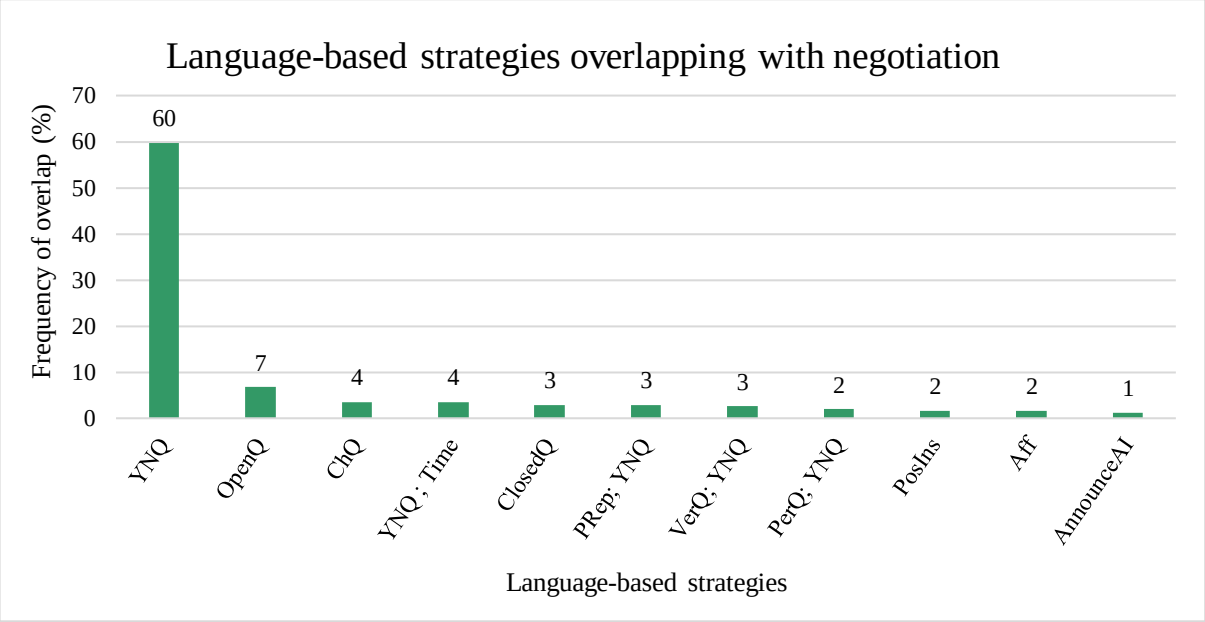

Figure 3. Frequency of language-based strategies coded as negotiation

Note. **YNQ** = Yes/no questions; **OpenQ** = Open-ended questions; **ChQ** = Choice questions; **YNQ; Time** = Yes/no questions and allow time to respond combination; **ClosedQ** = Closed-ended questions; **PRep; YNQ** = Paraphrased repetition of yes/no questions; **VerQ; YNQ** = Verification question and yes/no question combination; **PerQ; YNQ** = Permission question and yes/no question combination; **PosIns** = Positive instructions; **Aff** = Affirmations; **AnnounceAI** = Announcements of action/intent

Examples of language-based strategies overlapping most frequently with negotiation (yes/no questions, open-ended questions, yes/no questions combined with allowing time to respond) are listed below.

Example 4: Yes/No Question & Negotiation

In the excerpt below, the PSW demonstrates negotiation by consulting with the client with dementia using a yes/no question to determine whether they would like to go outdoors for a walk. This is a simple everyday scenario, yet the PSW gives the client with dementia a sense of control by enquiring about their desires.

Client with dementia: Is it nice outside?
Personal Support Worker: It's hot. [Facilitation]
Personal Support Worker: Do you want to walk? [Negotiation] [Yes/No Question]
Client with dementia: I want to walk yah.

Example 5: Open-ended Question & Negotiation

In this excerpt, the PSW negotiates by consulting with the client with dementia on meal preferences and mealtimes. This is another everyday scenario where the PSW allows the client with dementia to make their own decisions. The PSW first poses an open-ended question to ask the client with dementia about their meal preferences for breakfast. Further in the interaction, yes/no questions are also posed by the PSW to ensure that the client understood the mealtime preferences correctly.

Personal Support Worker: What would you like for breakfast? [Negotiation] [Open-ended Question]

Client with dementia: Nothing right now.

Personal Support Worker: Nothing right now? [Negotiation] [Yes/No Question]

Client with dementia: No.

Personal Support Worker: Okay.

Personal Support Worker: Well, I'm back for lunch today.

Client with dementia: Okay.

Personal Support Worker: So, you don't want a coffee or anything? [Negotiation] [Yes/No Question]

Client with dementia: No, I'll try to be up.

Personal Support Worker: Okay.

Example 6: Choice Question & Negotiation, Yes/No Question; Time & Negotiation

The excerpt below provides an example of how certain language-based strategies can be combined to show negotiation. At the beginning of this interaction, the PSW asks the client with dementia a yes/no question to determine if they are ready to get up and prepare for the day. The PSW then modifies their own turn-taking behaviour and pauses for two seconds to allow time for the person living with dementia to respond. Further on, the PSW consults on preferences again by posing a choice question to allow the person with dementia to choose when they would like to get ready.

Personal Support Worker: You gonna get up and get changed today? [Negotiation] [Yes/No Question; Time]

; :02 second pause

Client with dementia: Changed?

Personal Support Worker: Into new clothes. [Facilitation] [Give More Information]

Client with dementia: Yah Likely.

Personal Support Worker: Okay, you wanna do that later or wanna do that now? [Negotiation] [Choice Question]

Client with dementia: Later.

3.2.3 Validation

Validation involves acknowledging the feelings of the person living with dementia, providing a response on the feelings level, anticipating a need, and using empathy and understanding (Kitwood, 1997). Of 1060 PSW c-units coded as validation, 676 c-units exhibited overlap with language-based strategies. Language-based strategies overlapping with validation at a frequency greater than or equal to 1% are displayed in Figure 4.

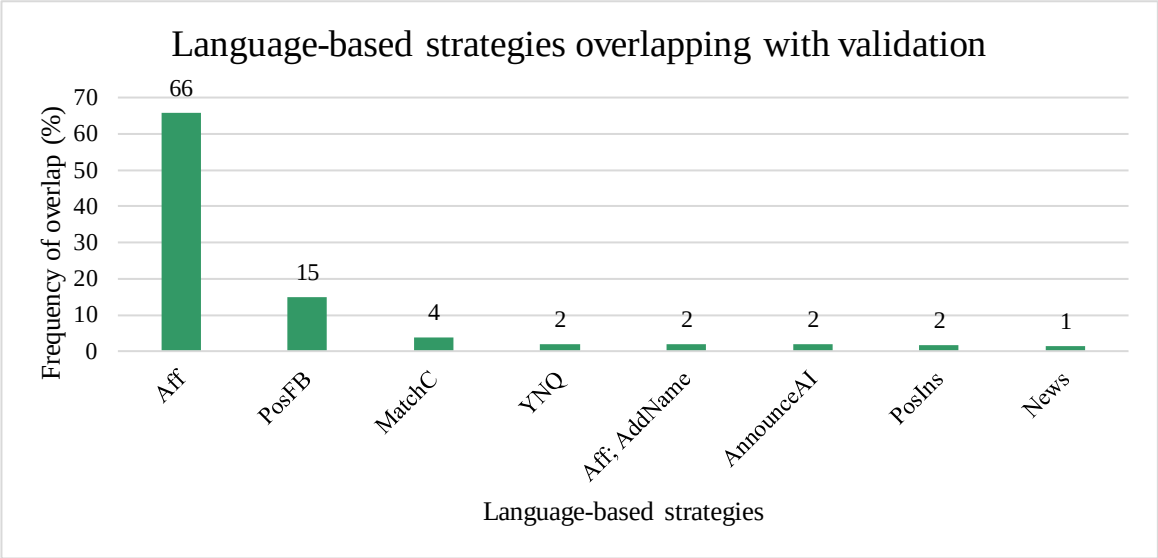

Figure 4 Frequency of language-based strategies coded as validation

Note. **Aff** = Affirmations; **PosFB** = Positive feedback; **MatchC** = Matching comments; **YNQ** = Yes/no questions; **Aff; AddName** = Affirmations and address by name and/or title combination; **AnnounceAI** = Announcements of action/intent; **PosIns** = Positive instructions; **News** = Newsmarks

Examples of language-based strategies overlapping most frequently with validation (affirmations, positive feedback, matching comments) are presented below:

Example 7: Affirmation & Validation

The client with dementia in this excerpt experiences confusion related to store hours which the PSW aids to resolve. After the client with dementia acknowledges the PSW's assistance and

their initial confusion, the PSW uses an affirmation to acknowledge their feelings and demonstrate agreement. The PSW in this example validates the client with dementia by being empathetic and providing a response on the feeling level with an affirmation.

Client with dementia: I got to go to the Dutch store.
Personal Support Worker: Oh today? [Negotiation] [Verification Question; Yes/No Question]
Client with dementia: I need cookies.
; :02 second pause
Personal Support Worker: Oh but today is Tuesday. [Facilitation]
Client with dementia: Yah I know.
Client with dementia: It's not open today?
Personal Support Worker: No.
[…]
Client with dementia : Good thing you came in here <because> I was sure that it was today.
Personal Support Worker : <Yah!> [Affirmation – Minimal Turn]
Personal Support Worker : Yup! [Affirmation – Minimal Turn]
Personal Support Worker : Well that's why we <help> each other. [Validation] [Affirmation]
Client with dementia : <Okay.>
Client with dementia : Yah.

Example 8: Matching Comment/Association & Validation

In the excerpt below, the PSW provides their own perspective on what the client with dementia has said in the form of a matching comment. The PSW effectively validates the comment by the client with dementia and adds additional information to promote continuity of the conversation.

Client with dementia : I can sit in the sun a little bit.
Personal Support Worker : Oh yeah, of course.
Client with dementia : I like the sun.
Personal Support Worker : Yeah, it's important to take sun. [Validation] [Matching Comment]

Example 9: Positive Feedback & Validation

The PSW in this example provides feedback and encouraging comments to the client with dementia regarding their performance on an activity collaborated upon during the interaction.

The positive feedback is framed to acknowledge the difficulty of the task and to compliment the client with dementia, helping them feel in control.

Client with dementia: Bingo, here?
Personal Support Worker: Yes, circle it. [Facilitation] [Positive Instruction]
Personal Support Worker: A_<R>_D_S.
Client with dementia: <R>_S XX.
Personal Support Worker: Perfect. [Positive Feedback]
Personal Support Worker: Good job, that was a hard one. [Validation] [Positive Feedback]

3.2.4 Facilitation

Facilitation involves collaborating with the person living with dementia, filling in missing pieces, and enquiring about the person living with dementia and their life (Kitwood, 1997). Of 2900 PSW c-units coded as facilitation, 1430 c-units exhibited overlap with language-based strategies. Language-based strategies overlapping with facilitation at a frequency greater than or equal to 1% are displayed in Figure 5.

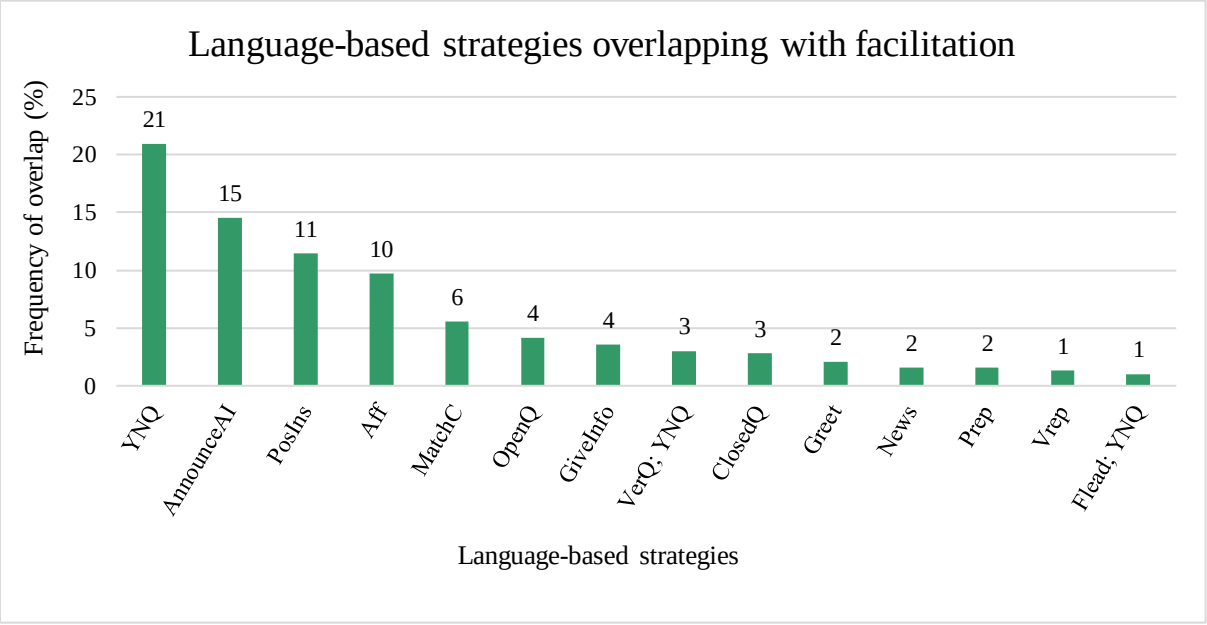

Figure 5 Frequency of language-based strategies coded as facilitation

Note. **YNQ** = Yes/no questions; **AnnounceAI** = Announcements of action/intent**; PosIns** = Positive instructions; **Aff** = Affirmations; **MatchC** = Matching comments**; OpenQ =** Open-ended questions; **GiveInfo** = Give more information; **VerQ; YNQ** = Verification questions and yes/no questions combination; **ClosedQ** = Closed-ended questions; **Greet** = Greetings; **News** = Newsmarks; **PRep** = Paraphrased repetitions; **VRep** = Verbatim repetitions; **FLead; YNQ** = Focused leads and yes/no questions combination

Examples of language-based strategies overlapping most frequently with facilitation (yes/no questions, announcements of action/intent, positive instructions, affirmations) are listed below:

Example 10: Yes/No Question & Facilitation

In the excerpt below, the PSW is eager to learn more about the client's interests. By posing a yes/no question with this intent, the PSW demonstrates facilitation and invites the client to share more about themselves, their thoughts, and their experiences. Later, the PSW also paraphrases the question to improve comprehension once a request for repetition was signaled by the person living with dementia. This exhibited the combined strategy of a paraphrased repetition of a yes/no question, which also overlapped with facilitation.

Client with dementia: My sister Mildred, she looks after all the vegetables.
Personal Support Worker: Mhhm. [Minimal Cue]
Personal Support Worker: Oh nice! [Facilitation] [Newsmark]
Client with dementia: Very nice.
; :02
Personal Support Worker: You like the garden? [Facilitation] [Yes/No Question]
Client with dementia: Hmm?
Personal Support Worker: You like gardening? [Facilitation] [Paraphrased Repetition; Yes/No Question]
Client with dementia: Mhhm.
Personal Support Worker: Nice.

Example 11: Announce Activity/Intent & Facilitation

The client with dementia in this example initially enquires about going into another room. The PSW exhibits facilitation by showing readiness to respond to the client with dementia. The PSW clearly announces the subsequent activity in accordance with what the client expressed they want to do.

Client with dementia: Now we go?
Personal Support Worker: Yup. [Facilitation]
; :04
Client with dementia: Should be her.
Personal Support Worker: Yup. [Missed-Opportunity Omission]
Personal Support Worker: We can go in here for a little while. [Facilitation] [Announce Activity/Intent]
Client with dementia: Yeah.

Example 12: Positive Instruction & Facilitation

In the below excerpt, the PSW provides support to the client with dementia while helping with bathing. The PSW supports the client with dementia to go at their own pace and helps complete the task by providing information on next steps when asked. Here, a positive instruction is used to facilitate the client's completion of the task and to enable the client with dementia to sustain their action.

Client with dementia: And what do I do next?
Personal Support Worker: You run some water. [Facilitation] [Positive Instruction]
; :03
Client with dementia: Run some water.
Personal Support Worker: To wash your upper body. [Facilitation] [Give More Information]

3.3 Overlap between Language-based Strategies & Missed Opportunities for PCC

3.3.1 Missed-opportunity Alternative

Missed-opportunity alternative involves situations where PCC could have been used in conversation with a person-living with dementia, but instead a non-person-centered alternative was employed. This may include patronizing communication, collective pronouns, and directive statements. Of 606 PSW c-units coded as missed-opportunity alternative, 327 c-units exhibited

overlap with language-based strategies. Language-based strategies overlapping with missed-opportunity alternative at a frequency greater than or equal to 1% are displayed in Figure 6.

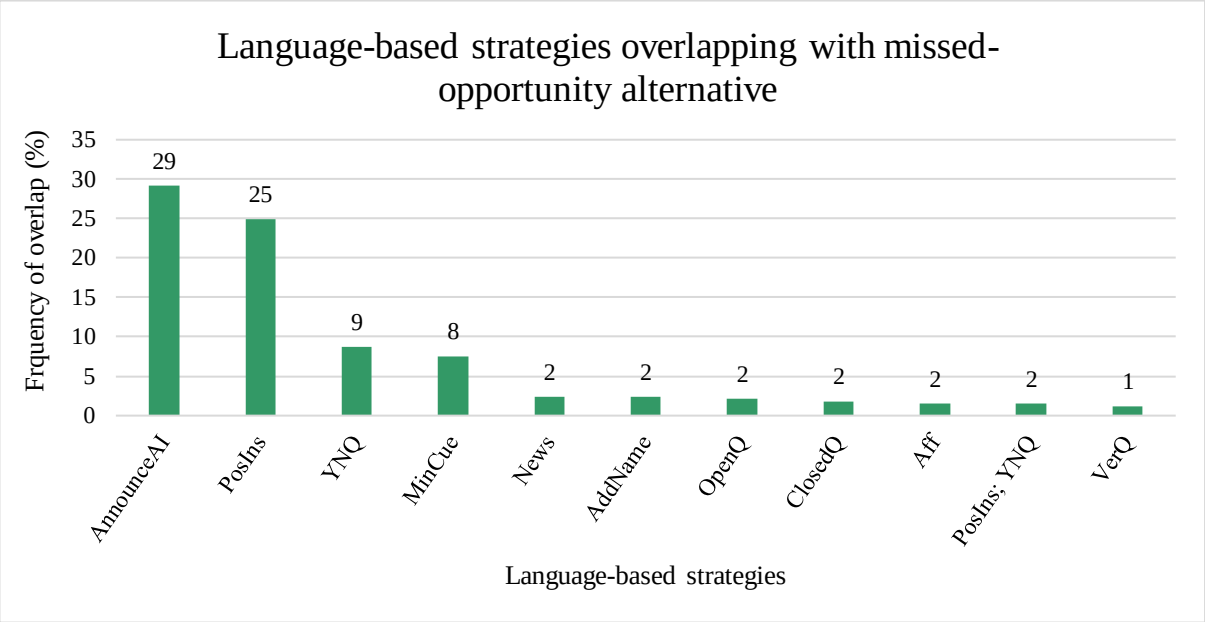

Figure 6 Frequency of language-based strategies coded as missed-opportunity alternative

Note. **AnnounceAI** = Announcements of action/intent**; PosIns** = Positive instructions; **YNQ** = Yes/no questions; **MinCue** = Minimal cue; **News** = Newsmarks**; AddName =** Address by name and/or title; **OpenQ =** Open-ended questions; **ClosedQ** = Closed-ended questions; **Aff** = Affirmations; **PosIns; YNQ =** Positive instructions and yes/no questions combination; **VerQ** = Verification questions

Examples of language-based strategies (announcements of action/intent, positive instructions) overlapping most frequently with missed-opportunity alternative are detailed below:

Example 13: Announcement of Action/Intent & Missed-opportunity Alternative, Positive Instruction & Missed-opportunity Alternative

Examples of the frequent overlap between positive instructions and announcement of action/intent with missed-opportunity alternative are shown in this excerpt. The PSW uses a positive instruction that is overly directive by saying, “Have a drink”, rather than first enquiring

about the desires of the client with dementia or using less directive language. Another missed-opportunity alternative is exhibited when the PSW uses the collective pronoun "we" while announcing their action/intent regarding getting the client's medication. This becomes patronizing since the task being presented was not collaborative.

Personal Support Worker: Did you sleep okay? [Facilitation] [Yes/No Question]
Client with dementia: Yup.
Personal Support Worker: Good.
Client with dementia: (I) I>
Personal Support Worker: Have a drink. [Positive Instruction] [Missed-Opportunity Alternative]
Personal Support Worker: We'll get you your meds. [Announcement of Action/Intent] [Missed-Opportunity Alternative]

3.3.2 Missed-opportunity Omission

Of 131 PSW c-units coded as missed-opportunity omission, 106 c-units exhibited overlap with language-based strategies. Language-based strategies overlapping with facilitation at a frequency greater than or equal to 1% are displayed in Figure 7.

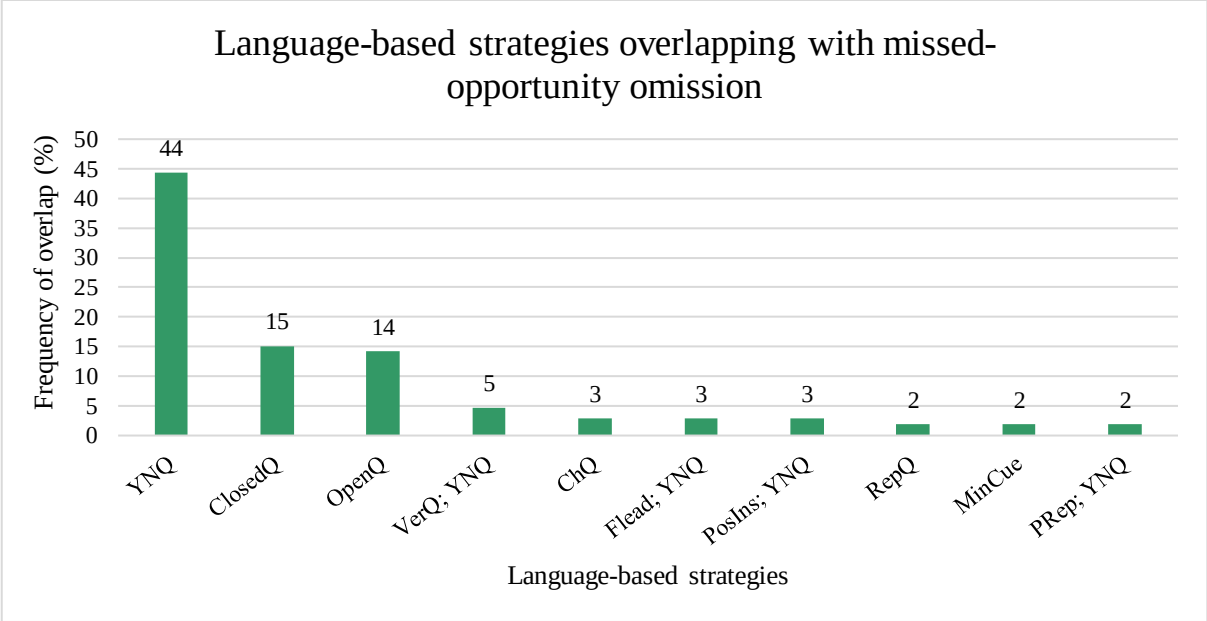

Figure 7 Frequency of language-based strategies coded as missed-opportunity omission

Note. **YNQ** = Yes/no questions**; ClosedQ** = Closed-ended questions; **OpenQ =** Open-ended questions; **VerQ** = Verification questions and yes/no questions combination; **ChQ** = Choice questions; **Flead; YNQ** = Focused leads and yes/no questions combination; **PosIns; YNQ** = Positive instructions and yes/no questions combination; **RepQ** = Repetition-seeking question; **MinCue** = Minimal cues; **PRep; YNQ** = Paraphrased repetitions of yes/no questions

Examples of some of the language-based strategies overlapping most frequently with missed-opportunity omission (yes/no questions, open-ended questions) are listed below. Examples 14 and 15 show instances of the PSW asking questions in various forms (yes/no question, closed-ended question,) without giving enough time for the client with dementia to respond.

Example 14: Yes/No Question & Missed-opportunity Omission

Personal Support Worker: Need your walker? [Missed-opportunity Omission] [Yes/No Question]
Personal Support Worker: Try sit here a little bit? [Validation] [Positive Instruction; Yes/No Question]
; :05
Personal Support Worker: You can sit here. [Validation] [Positive Instruction]

Example 15: Closed-ended Question & Missed-opportunity Omission

Personal Support Worker: You finish your tea.
Client with dementia: Yah.
Personal Support Worker: And then (we can) you can go relax for a few minutes. [Negotiation]
Personal Support Worker: Or we could go into the bathroom and get your face shaved up. [Negotiation]
Personal Support Worker: It's up to you. [Facilitation]
Personal Support Worker: Which would you prefer to do? [Missed-opportunity Omission] [Closed-ended Question]
Personal Support Worker: Do you want to relax for a little bit? [Negotiation] [Yes/No Question]
Client with dementia: No.

Chapter 4

4 Discussion

This is the first study examining audio-recorded naturalistic interactions between home care PSWs and persons living with dementia. The findings highlight the person-centeredness of several language-based strategies. This chapter describes and discusses the overlap of language-based strategies with PCC indicators and missed opportunities for PCC, respectively. The implications of the study findings are presented with respect to communication with persons living with dementia, PSW education/training, and home care. Finally, limitations, strengths, and directions for future research are outlined.

4.1 Key Findings

We investigated the language-based strategies that overlapped with PCC indicators to identify concrete ways by which home care PSWs incorporate the person-centered approach into care interactions with persons living with dementia. We also aimed to assess whether overlap exists between language-based strategies and missed opportunities for PCC. Research into communication with persons living with dementia has not explored whether the PCC and language-based communication lenses can complement each other effectively during interactions, with the exception of a study by Savundranayagam and Moore-Nielson (2015). They studied naturalistic interactions between persons living with dementia and formal caregivers in a long-term care setting to investigate means by which language-based strategies support PCC indicators. Their findings revealed that the language-based and person-centered approaches indeed aligned and identified several language-based strategies that supported the goals of PCC. The present study was a follow-up to determine the overlap between the language-based and person-centered approach by home care PSWs. We focused on the analysis of naturalistic care interactions between persons living with dementia and PSWs in a home care setting. This study also extended to assessing the overlap with missed opportunities to identify language-based strategies that may inadvertently contribute to missed opportunities for PCC.

Our findings highlight the person-centeredness of language-based strategies. More c-units were coded as a language-based strategy that overlapped with a PCC indicator than a PCC indicator alone or a language-based strategy alone. In other words, we identified several language-based strategies that support the PCC goals. Yes/no questions, affirmations, and addressing the person by their name and/or title are language-based strategies that can be used by caregivers to show recognition of the person living with dementia and their individual life story. Yes/no questions frequently allow caregivers to exhibit negotiation by consulting with the person living with dementia on their needs, desires, and preferences. Affirmations and positive feedback can be used to demonstrate validation when caring for persons living with dementia. Finally, yes/no questions and announcements of action/intent were the most frequently used language-based strategies that, when used appropriately by caregivers, supported the PCC goal of facilitation. We also identified language-based strategies that, although do support PCC goals, were used less frequently compared with the strategies listed above. For example, open-ended questions and choice questions can be effective tools to negotiate with persons living with dementia during care, however they were not posed frequently relative to yes/no questions observed in the present study.

The majority of PSW c-units were either coded as a PCC indicator alone, language-based strategy alone, or an overlap between the two (see Figure 1). A minority, only 743 of 11, 347 c-units across all 30 conversational transcripts, were instances of missed opportunities for PCC. Although the total number of c-units coded as missed opportunities was relatively low, it was important to investigate whether any language-based strategies were contributing to or implicated in how they present as missed opportunities for PCC. A majority of missed opportunities exhibited overlap with language-based strategies. This indicates that although language-based strategies can be effective, they are not always person-centered and may even pose or be involved in missed opportunities for PCC. Language-based strategies that frequently contributed to missed opportunities for PCC included announcements of action/intent, positive instructions, and various question types, including yes/no, open-ended, and closed-ended questions. These language-based strategies should be used with caution to facilitate PCC and to avoid causing missed opportunities for PCC.

We also found that home care PSWs in this study use a uniform set of person-centered language-based strategies. Although many language-based strategies mapped onto PCC indicators, only five of 33 language-based strategies occurred in the top 50% of overlapping c-units. These strategies included yes/no questions, affirmations, addressing the person living with dementia by name and/or title, announcements of action or intent, and positive instructions. Savundranayagam and Moore-Nieslon (2015) also concluded that there was minimal diversity in the language-based strategies supporting PCC employed by PSWs during long-term care interactions. They found between one and four of the 21 language-based strategies in the 2015 codebook overlapped with at least 10% of utterances coded as each indicator of PCC (Savundranayagam & Moore-Nielson, 2015). Similarly, the present study uncovered that only between one and four of the 33 language-based strategies overlapped with at least 10% of utterances coded as each indicator of PCC. There was minimal diversity in the language-based strategies used to support PCC, despite more effective language-based strategies having been identified from the literature. Thus, home care PSWs used a uniform set of effective language-based strategies.

It was noteworthy that yes/no questions and affirmations overlapped with most PCC indicators. Savundranayagam and Moore-Nielson (2015) also found that yes/no questions and affirmations presented frequent overlap across PCC indicators in long-term care interactions. These language-based strategies seem to have the distinct capability of accomplishing several functions that support PCC with persons living with dementia across care settings. However, yes/no questions also presented overlap with missed opportunities for PCC in the present study, specifically missed-opportunity omission. This highlighted the importance of another language-based strategy, allowing time to respond. The nature of yes/no questions and its ability to support several PCC indicators, while also frequently being implicated in missed opportunities for PCC indicates that they should be used with caution to evoke positive communication outcomes.

4.2 Language-based Strategies that Overlap with PCC

Language-based strategies that presented frequent overlap with each of the four indicators of PCC across all home care interactions analyzed in the present study are discussed below.

4.2.1 Recognition

Recognition involves acknowledging the person living with dementia as a distinctive individual and integrating or showing awareness of this distinctiveness during care (Kitwood, 1997). Yes/no questions, affirmations, addressing the person living with dementia by their name and/or title, and greeting the person living with dementia using their name and/or title overlapped most frequently with recognition.

The home care PSWs in this study frequently used yes/no questions that showed awareness of the client's preferences, interests, family, and past milestones or life events, which can lead to further talk on the topic of significance. Yes/no questions were used in the present study to show PSWs' awareness of the life story and/or social history of their clients with dementia. In contrast, Savundranayagam and Moore Nielson (2015) found that greetings overlapped most frequently with recognition. Many of the home care interactions in this dataset did not seem to be pressed for time. In comparison to long-term care where staffing issues and other constraints may limit the amount of one-on-one time between PSW-client dyads (McGilton & Boscart, 2007), many home care interactions in this dataset were enriched with opportunities for conversation. As previously mentioned, exactly half (n=15) of the audio-recorded interactions in the present dataset were leisure-based interactions. This may have enabled the use of questions demonstrating recognition as PSWs were involved in active conversation where they asked about known information related to the client, such as their family, interests, and life events.

Yes/no questions typically yield positive communication outcomes, facilitating the comprehension and expression of persons living with dementia (Ripich et al., 1999; Savundranayagam & Lee, 2017; Savundranayagam & Moore-Nielsen, 2015; Small et al., 2003; Small & Perry, 2005; Tappen et al., 1997; Wilson et al., 2012). Yet, the literature also recommends them for specific purposes, namely, to accommodate communication difficulties, generate necessary additional information or responses, or during collaboration on tasks that are more demanding (Ripich et al., 1999; Small & Perry, 2005). It is notable that these functions tend to be more task-focused than related to understanding or connecting with the other individual. Caregivers could also be encouraged to use other question types, such as open-ended questions, if yes/no questions do not in fact yield further contributions from the person living with dementia. Open-ended questions could be used similarly to highlight the caregiver's

relationship with their client while inviting the client with dementia into conversation in a more meaningful manner than prompting a short confirmation/denial response (Tappen et al., 1997).

Kitwood (1997) also described recognition as affirming the person living with dementia in his/her own uniqueness. Affirmations supported recognition at a similarly high frequency as yes/no questions. They involve acknowledging the feelings of the person living with dementia, often by displaying agreements (Ramanathan, 1997; Santo Pietro & Ostuni, 2003). They can enable the caregiver to show interest in what the person living with dementia is saying by offering agreement and encouragement (Santo Pietro & Ostuni, 2003). The affirmations that overlapped with recognition in the present study were often those that acknowledged the feelings of the person living with dementia while incorporating some knowledge of their preferences, social history, or life story.

Savundranayagam and Moore-Nielson (2015) found that greetings, where persons living with dementia are often addressed by name/title, overlapped most frequently with recognition during long-term care interactions. In the present study, addressing the person living with dementia by name/title was the third most frequent language-based strategy overlapping with recognition. It was also the fourth most frequent overlapping strategy when combined with greetings. Referring to the person living with dementia by name was recommended in the literature with general consensus that it is an effective strategy across stages of dementia (Acton et al., 2007; Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Using the name of the person living with dementia overlapped with recognition when PSWs greeted them at the beginning or end of an interaction, called their attention, or addressed them in conversation or during care tasks. Other studies have shown that this strategy facilitates successful communication and care with persons living with dementia (Kim and Bayles, 2007; Wilson et al., 2012). Wilson and colleagues (2012) concluded that using the name of the person living with dementia was the most frequently used verbal communication strategy during tasks that were successfully completed; this strategy was also perceived to be successful by caregivers for persons living with moderate and severe Alzheimer's disease. Referring to the person living with dementia by their preferred name/title enables formal caregivers to recognize them as a distinct individual, rather than contributing to patronizing language and behaviour that can be

commonplace in interactions with persons living with dementia and older adults in general (Weitzel et al., 2011). Moreover, persons living with severe Alzheimer's disease can also comprehend and respond when hearing their name in a greeting or call to attention (Kim and Bayles, 2007). Hence, this strategy benefits individuals across stages of the disease. Greetings that include addressing the person by their name/title can promote appropriate responses by persons living with dementia (Kim & Bayles, 2007). Caregivers can recognize their clients by using greetings with their names when they enter or exit rooms of their clients (Kim & Bayles, 2007; Savundranayagam & Moore-Nielsen, 2015).

Of 402 PSW c-units coded as recognition, 164 c-units exhibited overlap with language-based strategies. In comparison to other indicators of PCC, many c-units coded as recognition did not exhibit overlap with any language-based strategies. Some identifiable instances that did not exhibit overlap given the present coding system and breadth of research related to language-based strategies included when the PSW used humour, signifying their shared relationship, or when the PSW conveyed knowledge about the person living with dementia. Although these are PCC strategies that reinforce recognition of the person living with dementia, they are not associated with any specific language-based strategies that have been assessed for effectiveness by research in the field. This could be related to the abstract nature of using humour and showing awareness of another in conversation which makes it less likely to conform to a specific language-based strategy.

4.2.2 Negotiation

Yes/no questions and open-ended questions most frequently overlapped with negotiation. Persons living with dementia can contribute to their own care when PSWs encourage them to be active decision makers rather than passive observers (Savundranayagam, 2014). Asking questions to give clients with dementia autonomy during care seems to be how home care PSWs in this study exhibit negotiation during care interactions.

Home care PSWs exhibited the PCC indicator of negotiation most frequently by using yes/no questions to enquire about their client's needs, preferences, and desires during care. Yes/no questions allowed the PSW to give the person living with dementia a sense of control and created flexibility during care interactions. Yes/no questions are effective for communicating with

persons living with dementia and are frequently recommended in dementia caregiving literature because they often produce successful communication outcomes, especially during task completion where attention may be divided (Small et al., 2003). Yes/no questions that overlap with negotiation are posed with the purpose of consulting with the person living dementia, rather than assuming their decisions (Kitwood, 1997). There is discussion, however, that the use of yes/no questions should be limited or carried out with caution to avoid solely presenting persons living with dementia with a predefined option, which may inhibit their free expression (Small et al., 2003). The present study displayed a similar pattern of frequent overlap between yes/no questions and negotiation as was observed in a long-term care setting (~60%) (Savundranayagam & Moore-Nielson, 2015). The long-term care and home care PSWs seem to consult with persons living with dementia in a similar manner, perhaps indicating the task-focused nature of care across settings or the effectiveness of yes/no questions in prompting successful responses from persons living with dementia during care which prompts continued use.

Open-ended questions overlapped with negotiation at intermediate frequency (7%) relative to other question structures and language-based strategies. PSWs who demonstrate negotiation with open-ended questions ask persons living with dementia to comment on their needs, desires, and preferences with more than a one-word answer. Open-ended questions allow for the open expressions of thoughts, opinions, and feelings by the person living with dementia, thereby facilitating meaningful caregiver-client relationships (Acton et al., 2007; Perry et al., 2005; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Small & Perry, 2005; Tappen et al., 1997; Wilson et al., 2013; Wilson et al., 2012). Open-ended questions do not restrict the respondent's answers to one or two options as in closed-ended questions and choice questions. Contrarily, they may preserve the individual's autonomy during care interactions most notably because the person living with dementia is free to answer as they please (Tappen et al., 1997). Studies on the effectiveness of posing various question types to persons living with dementia have shown that open-ended questions can lead to unfavourable communication outcomes and/or conversation breakdowns (Ripich, 1999; Small et al., 2003). However, they encourage extended, semantically rich responses from persons living with dementia, although they may place more cognitive demands concerning lexical-semantic, syntactic, and discourse-pragmatic processes (Small & Perry, 2005; Tappen et al., 1997). Open-ended questions presented overlap with negotiation more frequently relative to the question types

that will be subsequently mentioned. However, PSWs could use them more often to exhibit negotiation. Relying heavily on yes/no questions could be perceived as controlling because they limit the potential response options from the person living with dementia and may instead actively encourage passive responses (Small and Perry, 2005). Instead, open-ended questions that refer to semantic information could be used to make greater effort to respect the autonomy and personhood of the client living with dementia (Small and Perry, 2005). Still, home care PSWs in the present study use open-ended questions to consult with persons living with dementia on their needs, desires, and preferences at a frequency more than double that displayed by long-term care PSWs (Savundranayagam & Moore-Nielson, 2015).

Choice questions, verification questions, and permission questions are also recommended in the literature, but did not overlap very frequently with PCC indicators. Choice questions are recommended to ask a person living with dementia about their needs, preferences, permission, or opinions by presenting clear options (Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Small & Perry, 2005; Wilson et al., 2013; Wilson et al., 2012). The structure of choice questions provides cues that enable persons living with dementia to access preserved knowledge to respond accurately while participating in decision-making processes (Ripich et al., 1999). However, choice questions only overlapped with negotiation at a low frequency. Long-term care PSWs also used choice questions at a similar frequency (~5%) to support negotiation during care (Savundranayagam & Moore-Nielson, 2015). The minimal use of choice questions across care settings relative to their reported effectiveness lends to the need for training PSWs on offering options to persons living with dementia during care so that they can contribute meaningfully to decision-making processes. Verification questions can serve as an effective repair strategy to clarify a potential misunderstanding or can be used to double check whether preferences are understood correctly (Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson, Rochon, Mihailidis, et al., 2012). However, verification questions, in the form of yes/no questions, only overlapped with negotiation at a frequency of 3%. Finally, permission seeking questions, in the form of yes/no questions, are recommended to help the person living with dementia prepare for the care activity to follow and should be used by caregivers when initiating such activities and procedures (O'Brien et al., 2020; Weitzel et al., 2011). However, permission-seeking questions, in the form of a yes/no question, only overlapped with negotiation at a frequency of 3%. These strategies do

support PCC, yet their frequency of use during interactions is relatively low. Verification questions and permission questions are specific in function. They may ensure that preferences are understood correctly or that persons living with dementia consent to activities during care. Consequently, it is logical that they were not used as often during care interactions relative to other question types. However, questions structures such as open-ended questions and choice questions, which can serve numerous functions, should be used regularly by PSWs to draw on their communicative benefits.

It is noteworthy that 311 of 328 (95%) c-units coded as negotiation overlapped with language-based strategies. Teaching PSWs the language-based strategies that overlapped frequently with negotiation will help them use PCC when consulting with persons living with dementia. The high frequency of overlap also highlights that language structures are key to the act of negotiating with persons living with dementia. PSWs should be encouraged to use a range of question structures beyond yes/no questions. Other question types, such as open-ended questions and choice questions were also found to be effective (Ripich et al., 1999). Rather than limiting options, PSWs can frame their questions appropriately to facilitate the communication abilities while accommodating the communication challenges that persons living with dementia may face. Even open-ended questions, which overlapped with negotiation at an intermediate frequency (7%) can be used to assess the unfiltered needs, desires, and preferences of the client with dementia. Although open-ended questions were sometimes linked with unsuccessful communication outcomes, repeating or rephrasing them in the event of a communication breakdown could be an effective way to mediate their drawbacks while taking advantage of the rich information they can uncover about the person living with dementia (Ripich et al., 1999; Small et al., 2003).

4.2.3 Validation

Validation involves acknowledging the feelings and emotions of the person living with dementia through their subjective frame of reference (Kitwood, 1997). Caregivers who validate a person living with dementia understand, accept, and respond to the reality of their emotions and experiences (Kitwood, 1997). The home care PSWs in this study predominantly demonstrated validation through affirmations and positive feedback. Affirmations serve several functions including displaying agreement, softening the directness of instructions or requests, and

demonstrating an intention to fulfill specific instructions or requests to put the client at ease (Ramanathan, 1997; Savundranayagam & Moore-Nielsen, 2015). Several PSW in the study also used the home care environment to acknowledge the feelings of their clients by commenting on personal features of the home and memorabilia of known import. For example, a PSW frequently used affirmations by commenting on features of a new home environment after a client's recent relocation.

In the present study, there was more diversity in how PSWs validated their clients with dementia. For example, PSWs also used positive feedback frequently to validate their clients, whereas all other strategies beyond affirmations overlapped at minimal frequency in the long-term care context (Savundranayagam & Moore-Nielson, 2015). PSWs often made encouraging comments to persons living with dementia to provide them with positive feedback prior to, during, or after a task that may have been demanding or exhibited effective collaboration by the client. This strategy was recommended in caregiving literature to show support for the person living with dementia, thereby enabling engagement in tasks and conversation (Acton et al., 2007; Bourgeois et al., 2003; Dijkstra et al., 2002; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). Dijkstra and colleagues (2002) suggested that providing positive feedback to the person living with dementia at any stage of a task acknowledges their concerns and feelings which can then facilitate overall satisfaction and acceptance. Again, an overlap between the definitions and goals of validation and the language-based strategy of positive feedback is evident. Therefore, the overlap exhibited in the present study reaffirms the intuitive relationship between validation and providing positive feedback to the person living with dementia during care.

A majority of PSW c-units coded as validation overlapped with language-based strategies. However, 379 c-units that demonstrated validation did not present overlap with any language-based strategies. Validation does not have a logical prescribed structure as exhibited with negotiation. Hence, there were many ways that caregivers could validate persons living with dementia and connect with them on a personal and emotional level that did not reflect a specific language-based strategy. Some specific recurring instances that did not exhibit overlap were thanking and apologizing to the person living with dementia. These were examples of c-units

coded as validation that were not consistent with any of the effective language-based strategies recommended for communication with persons living with dementia.

4.2.4 Facilitation

Yes/no questions, announcements of action/intent, positive instructions, affirmations, and matching comments/associations overlapped most frequently with facilitation. Facilitation may involve initiating an interaction or conversation and filling in missing pieces, as required, to sustain it (Kitwood, 1997). It also includes communication used to enquire about, collaborate with, and respond to a person living with dementia. As is apparent, facilitation, relative to other PCC indicators such as negotiation, has a focused definition but encompasses a diverse array of specific functions. Likewise, the language-based strategies that frequently supported facilitation in this study were diverse. Both home care PSWs in the present study and long-term care PSWs demonstrated the greatest diversity in language-based strategies overlapping with facilitation relative to other PCC indicators (Savundranayagam & Moore-Nielson, 2015).

Yes/no questions overlapped most frequently with facilitation. PSWs used yes/no questions involving semantic memory. Also, they used yes/no questions to show interest in getting to know clients as an individual and to ask clients whether they could help or fill in a missing piece of the action taking place. Yes/no questions that overlapped with facilitation often demonstrated a balance between ensuring successful communication outcomes and encouraging persons living with dementia to contribute to the conversation, especially when caregivers asked yes/no questions aimed at finding out more about them. Persons living with dementia often responded with a confirmation/denial response initially, but then proceeded to add more information to elaborate on their response.

Announcements of action/intent and positive instructions were also used frequently by PSWs to support facilitation (15%; 11%). These language-based strategies were observed when PSWs initiated an action or helped to sustain the action through collaboration during a specific task or procedure. Clear instructions phrased to guide the person living with dementia on what to do rather than what not to do, without being overly directive, were recommended and were found to encourage collaborative behaviours from persons living with dementia (Belzil & Vézina, 2015; Bourgeois et al., 2003). Clear announcements of action/intent were recommended prior to and

during care tasks to help introduce and explain steps as they occurred (Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012). PSWs in this study announced their action/intent clearly during care activities that were collaborated upon or fulfilled by the PSW. Announcements of action/intent overlapped with PCC more frequently in the home context compared to long-term care (Savundranayagam & Moore-Nielson, 2015). This indicates that home care PSWs in the present study more consistently detailed their actions/intents in a manner that demonstrated facilitation.

Finally, affirmations and matching comments/associations presented overlap with c-units also coded as facilitation (10%; 6%). Affirmations have been recommended in the caregiving literature to show agreement with the person living with dementia and act as conversational continuity elements (Ramanathan, 1997; Santo Pietro & Ostuni, 2003). Affirmations that generally acknowledge feelings and minimal turns that expressed agreement overlapped most frequently with facilitation. They often helped PSWs communicate in a manner that sustained the interaction, thereby demonstrating facilitation. Similarly, matching comments/associations are recommended as they maintain continuity by contributing personal opinions and experiences while responding to persons living with dementia (Santo Pietro & Ostuni, 2003). These prevent interactions from becoming one-sided by potentially leading to further talk related to the added information offered by the caregiver. Matching comments/associations enable the continuation of the conversation between the person living with dementia and PSW; thus, the observed relationship between this language-based strategy and facilitation is expected.

There were several other language-based strategies that overlapped with facilitation including open-ended questions, giving the person living with dementia more information, verification questions in the form of yes/no questions, closed-ended questions, greetings, newsmarks, paraphrased repetitions, and verbatim repetitions. The wide variety of language-based strategies that overlapped with facilitation indicated that language-based strategies can be instrumental in teaching PSWs concrete pathways to demonstrate this PCC indicator. However, many of these language-based strategies were not used frequently during care interactions. This highlights that PSWs in this study did not use a consistently diverse set of language-based strategies across all care contexts of the observations included in this dataset.

Most instances of overlap with PCC indicators in this study were exhibited with facilitation. Of all c-units coded as facilitation, 49% overlapped with language-based strategies. About half of the c-units that demonstrated facilitation did not conform to any of the language-based strategies identified as effective within dementia caregiving literature. Certain responses to questions posed by the person living with dementia, for example, which are instances of facilitation due to the role they have in continuing the conversation did not fit any one language-based strategy. Also, providing background information related to care tasks, specific items in the home environment, or items necessary to complete an activity were often coded as facilitation, but did not fit the definition of any specific language-based strategy.

4.2.5 Yes/No Exhibit Overlap across Several PCC Indicators

Home care PSWs in this study used yes/no questions frequently to support PCC with their clients living with dementia. Yes/no questions overlapped at a frequency greater than 10% with three of the four PCC indicators: recognition, negotiation, and facilitation. The functions of yes/no questions across conversational contexts call for further investigation. All yes/no questions coded were those that probed semantic memory or enquired about the person living with dementia, rather than asking them to recount specific events from the past. However, their semantic content varied across conversational and care contexts of the interactions included in this dataset. Some yes/no questions were posed to ask a person living with dementia for permission or to enquire about preferences, whereas others were used to invite the person living with dementia into conversation on a topic of emotional significance or connection to their life/social history. The PSW c-units from Examples 1, 4, and 10 in Chapter 3 reflect the variation in function of yes/no questions. These examples also indicate why yes/no questions can be effective in promoting continuity, coherence, cohesion, and clarity while promoting PCC with persons living with dementia.

Yes/no questions were often effective in enabling responses when clients with dementia were given an appropriate amount of time to respond or in some cases when they were rephrased or repeated if misheard or misunderstood at the initial presentation. This is consistent with previous research assessing the effectiveness of yes/no questions (Ripich et al., 1999; Small et al., 2003). Small and colleagues (2003), however, acknowledged that yes/no questions should be used cautiously to ensure that the person's autonomy is still respected in regard to their ability to make

decisions without restricted offers. Caregivers should attempt to find a balance between simplifying messages with the intention of improving comprehension and expression of the person living with dementia and providing opportunities to promote their meaningful participation in conversation. Yes/no questions that are posed to learn more about the person living with dementia, as frequently observed in this dataset, are an example of caregivers striking this balance. They first allowed the person living with dementia to respond with a confirmation/denial response to an information probing question, which then often led to further talk from the person living with dementia on their own terms.

Yes/no questions were frequently used to consult with persons living with dementia or to ask for their permission during the care interactions analyzed. However, Ripich and colleagues (1999) also provided evidence that the structured form of choice questions still promoted successful communication outcomes, albeit with less frequency than yes/no questions. Therefore, choice questions could be posed as an alternative to provide the person living with dementia with a greater decision-making role in the interaction.

Questions with a yes/no structure posed by the home care PSWs who participated in this study exhibited various functions, communication outcomes, and potential for person-centeredness. Given the frequent overlap between yes/no questions and multiple PCC indicators, further investigation is warranted to visualize a hierarchy for yes/no question types most effective for specific communication contexts and purposes when caring for persons living with dementia. The communication profile of the person living with dementia, varying with dementia severity and stage, should also be taken into consideration. The communication abilities and challenges faced by persons living with dementia at various timepoints following diagnosis may impact the types of language-based strategies that are effective, especially ones presenting differing communication outcomes in the literature such as yes/no questions, choice questions, and open-ended questions.

4.3 Language-based Strategies that Overlap with Missed Opportunities for PCC

Language-based strategies that presented frequent overlap with missed opportunities for PCC across all home care interactions analyzed in the present study are discussed below.

4.3.1 Missed-opportunity Alternative & Missed-opportunity Omission

Caregivers may sometimes miss opportunities to be person-centered while caring for persons living with dementia, instead using overly directive, patronizing, or task-oriented language and sometimes failing to respond at all (Savundranayagam et al., 2007; Savundranayagam, 2014). C-units where the PSW had the opportunity to be person-centered but used non-person-centered language that may fall into one of the above categories were coded as a missed-opportunity alternative. Language-based strategies overlapping frequently with missed-opportunity alternative include announcements of action/intent and positive instructions. Other instances where the PSW had the opportunity to be person-centered, but instead did not respond to the client with dementia or did not give them enough time to respond were coded as a missed-opportunity omission (Savundranayagam et al., 2007; Savundranayagam, 2014). Language-based strategies that overlapped frequently with missed-opportunity omission include yes/no questions, closed-ended questions, and open-ended questions.

C-units containing announcements of action/intent were frequently coded as missed-opportunity alternative according to the PCC coding framework. These were situations where the PSW could have consulted with the person living with dementia prior to announcing a new care activity or next steps. Instead, they prescribed what was going to happen next and failed to take consideration of the preferences or desires of the client living with dementia. Although announcements of action/intent help prepare the person living with dementia for the activity/task at hand, they should be used with caution to avoid hindering the individual's autonomy and free expression during care. Announcements of action/intent seem to be useful and productive when describing next steps within an activity/task. However, caregivers can be more person-centered while initiating a care activity by taking time to first consult with the individual and understand their desires.

PSWs often missed opportunities to be person-centered when providing positive instructions that instruct the person living with dementia on what to do during care interactions. Positive instructions are recommended in the caregiving literature to encourage collaborative behaviours from persons living with dementia (Belzil & Vézina, 2015; Bourgeois et al., 2003). However, instructions, even those phrased in the positive form, can sometimes become overly directive and patronizing when not used appropriately to promote collaboration. Also, the presence of collective pronouns in positive instructions feed into the perception that older adults cannot be independent and may contribute to refusal of care (Williams et al., 2017). Visualizing how certain language-based strategies, although effective and well-intended, may contribute to non-person-centered interactions can help caregivers become more sensitive to how they are used.

Language-based strategies that overlapped frequently with missed-opportunity omission were mostly question structures, including yes/no questions, closed-ended questions, and open-ended questions. Some missed-opportunity omissions did not exhibit overlap as they often referred to the absence of PCC during care, for example when a caregiver failed to validate the client with dementia when they expressed a concern or shared something of emotional significance. Questions posed by the PSW where the person living with dementia was not given enough time to respond overlapped most frequently with missed-opportunity omission. The PSWs in these scenarios either asked a follow up question, asked two questions at once, or moved on with the conversation or task at hand without allowing the client with dementia enough time to process and respond. Allowing time to respond is an important language-based strategy recommended in the dementia caregiving literature (Acton et al., 2007; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Sabat, 1991; Small et al., 2003; Weitzel et al., 2011). PSWs should attempt to modify their turn-taking behaviour to pause and allow time for persons living with dementia to overcome comprehension and expressive difficulties that they may encounter when trying to formulate a response (Sabat, 1991). Pausing for an appropriate amount of time following a question is important to maintain the continuity of conversation and promote interactive discourse opportunities (Mueller & Guendouzi, 2005; Sabat, 1991).

4.4 Implications

Our findings offer implications for the co-occurrence of language-based and person-centered approaches during care, the communication training and education of PSWs, and the state of research on communication with persons living with dementia in the home care setting.

This study aimed to determine whether an overlap between the language-based approach and PCC approach exists. We have indeed demonstrated that language-based strategies do support PCC in home care interactions between PSWs and persons living with dementia. The knowledge that concrete and teachable language-based strategies can be used to preserve the personhood of persons living with dementia during care will strengthen care interactions in an informed and systematic manner. When PCC strategies are at the foundation of care, there are more positive reactions and contributions by persons living with dementia (Harwood et al., 2012; O'Rourke et al., 2020; Savundranayagam et al., 2016). The person-centered care approach has also been linked with increased job satisfaction and morale among formal caregivers (Harwood et al., 2012; O'Rourke et al., 2020; Viau-Guay et al., 2020; Young et al., 2011). The lived experiences of home care PSWs regarding their communication with persons living with dementia reveal a lack of confidence in their communication skills and their ability to facilitate successful communication interactions (Kamalraj et al., 2021). PSWs who receive training with a language-based component experience improved dementia-specific communication knowledge and increased preparedness to provide care to persons living with dementia (Barbosa et al., 2016; Conway & Chenery, 2016; de Vries, 2013; Savundranayagam et al., 2020). PSW education and training can be enhanced through insight into specific language-based strategies that overlap with PCC. The following language-based strategies are key: yes/no questions, affirmations, addressing the person living with dementia by name and/or title, announcements of action/intent, and positive instructions. These language-based strategies exhibited frequent support of several PCC indicators in the home care interactions between PSWs and persons living with dementia. In addition, the overlap analysis demonstrated that other effective language-based strategies have the potential to be person-centered during home care interactions. However, in practice, home care PSWs used a uniform set of language-based strategies during interactions with persons living with dementia. Caregiver communication training interventions can be enhanced with this knowledge of key language-based strategies that support multiple communicative functions, such

as maintaining coherence, clarity, reciprocity, and continuity, while supporting recognition, negotiation, validation, and facilitation PCC indicators. Several language-based strategies that exhibited overlap with PCC indicators are integrated into the Be EPIC person-centered communication training (Savundranayagam et al., 2020) and would be a useful addition to the currently limited focus on dementia-specific care and communication training in the current formal PSW curriculum. Training PSWs on the use of language-based strategies that support PCC must also address employer- and government-level structural barriers identified by Savundranayagam and colleagues (2020) related to the lack of support for and focus on person-centered care relative to task-focused care.

We also aimed to investigate whether certain language-based strategies may contribute to missed opportunities for person-centered communication. We found that several of the key language-based strategies supporting PCC are implicated in missed opportunities – specifically positive instructions, announcements of action/intent, and yes/no questions. The analysis of language-based strategies exhibiting overlap with missed opportunities for PCC highlighted the importance of using language-based strategies carefully and with intention. By providing insight on how the inappropriate use of certain language-based strategies may lead to missed opportunities for PCC, caregivers can be trained to be more attentive and sensitive to their communication during care. Communication training interventions must share the nuances in the communication skills they teach by including a consideration of common pitfalls inadvertently tied to certain language-based strategies. This analysis ultimately revealed another key language-based strategy – allowing the person living with dementia enough time to respond. A major finding was that the absence of this strategy was implicated in the overlap of several question types with missed opportunities for PCC.

As the proportion of persons living with dementia receiving care at home increases, attention to home care practices should be intensified accordingly. Home care PSWs who shared their communication experiences with persons living with dementia emphasized that time constraints and heavy workloads in long-term care hindered meaningful communicative interactions with their clients with dementia; they preferred home care because of one-on-one interactions and more time allotted for care provision which enabled meaningful social communication with persons living with dementia (Kamalraj et al., 2021). Consistent with this finding, home care

PSWs in the present study used far more person-centered language than PSWs in long-term care settings (Savundranayagam & Moore-Nielson, 2015). This illustrates that the nature of the home environment allows for talk that is more likely used to enhance the personhood of the client with dementia during care. Also, half of the home care interactions analyzed in this dataset were leisure-based and involved a great deal of conversation that was personal in nature. A subanalysis that looked at communication patterns within the routine care and leisure-based interactions in this dataset demonstrated that PSWs used more c-units coded as PCC during leisure-based interactions. These interactions were longer in duration, had more contributions from the client living with dementia, and involved more conversation between the dyad. This allowed the PSWs to engage in meaningful interactions where they could convey their knowledge about their client with dementia, validate the client's emotions and feelings during conversation, consult with them on their needs and preferences, and facilitate the initiation and continued sharing during conversation. Regarding the overlap between language-based strategies and PCC within routine care and leisure-based interactions in home care, this subanalysis revealed that, overall, there was little variation in the language-based strategies that support PCC. It appears that language-based strategies supporting PCC are consistent across in-home care contexts.

Many of the differences between language-based strategies supporting PCC indicators in home care versus long-term care show that home care PSWs in the present study used language that allowed them to take time to interact meaningfully with persons living with dementia. For example, some home care PSWs used the home environment to acknowledge the feelings of the person living with dementia and demonstrate validation. Further, home care PSWs more frequently announced their action/intent clearly to facilitate care activities than long-term care PSWs. This may indicate a greater effort to involve the person living with dementia during care. Lastly, open-ended questions were used by home care PSWs more often than long-term care PSWs to negotiate with clients with dementia on their needs and preferences.

Finally, language-based strategies that support PCC can potentially produce a range of outcomes concerning communicative success and level of participation and contribution from the person living with dementia. By using effective strategies proven to support the personhood of the person living with dementia, caregivers can be nuanced in the way they interact with their

individual client and avoid using communication that feeds into misconceptions about their needs and abilities. Instead, as demonstrated by the Communication Enhancement Model, these positive communication modifications may enrich the resulting interaction due to the improved confidence and expectations of the older adult to meaningfully contribute to conversation (Orange et al., 1995). For example, PSWs who use diverse language-based strategies that support the PCC indicator of negotiation can invite persons living with dementia into important decision-making situations of everyday care. Certain repair strategies can be used in combination with more complex question structures to facilitate the comprehension of the client with dementia while ensuring that oversimplification does not hinder communication opportunities. This can help caregivers avoid perpetuating the negative feedback cycle implicated in the Communication Predicament of Aging model (Ryan et al., 1986). Rather than continuously modifying communication behaviour based on certain perceptions related to the inabilities of the older adult and/or person living with dementia, such as the need for simplification, the outcomes of this study can provide caregivers with effective language-based strategies that support the personhood of their client.

4.5 Limitations & Strengths

4.5.1 Limitations

Limitations include the potentially incomprehensive list of language-based strategies, inability to analyze nonverbals, and small sample size. The list of 33 language-based strategies that guided coding of conversational transcripts could have been incomprehensive, although best efforts were made to ensure that it was representative of the present research in this field. The language-based strategy coding framework may be missing those that are recommended and perceived to be effective in practice but were not yet proven to be effective from evidence-based findings. Also, the list of language-based strategies is a reflection of present research to date rather than all language-based strategies used that may be effective with persons living with dementia in various care contexts and settings. The list could be further updated with new references and language-based strategies as research in this field evolves and new findings emerge. In terms of language-based strategy coding in practice, the considerable number of strategies made it difficult to code comprehensively at times. However, a review of coding was conducted prior to

analysis to ensure that coding accurately reflected the language-strategies put into practice by the PSW participants during care interactions.

The inability to analyze nonverbal communication due to audio-recorded data may have affected coding of language-based strategies and PCC as coders did not have the full picture of what was taking place beyond what was verbalized by the participants. This also made it challenging to determine whether a response was missing or inaudible due to gestures or facial expressions being used instead. The analysis of audio-recorded data alone could have limited the examination of interactional behaviours between PSWs and persons living with dementia. This may have affected PCC coding since much of being person-centered has to do with non-verbal communication (Kitwood, 1997). As an example, Kitwood (1997) specified that recognition "is never purely verbal, and it need not involve words at all" (p. 90), demonstrating that nonverbals, including direct eye contact, are as profound. Analysis of video-recorded data would permit a more thorough interpretation of nonverbal cues, responses, and behaviours. This may have altered some of the PCC coding since nonverbals are just as important as, if not more important than, verbal expressions of person-centeredness. In turn, patterns relating to frequency of overlap exhibited by language-based strategies, both with PCC indicators and missed opportunities for PCC, could have been affected. Mapping language-based strategies onto PCC indicators and missed opportunities for PCC while having the awareness of nonverbal communication strategies present in the interaction could enable a more thorough overlap analysis. Further, knowing how nonverbal responses may support PCC during care of persons living with dementia is a fruitful area of research.

Finally, the small number of dyads whose interactions were being analyzed could have impacted the findings of this study. Analyzing interactions between numerous dyads of diverse backgrounds would allow for the further understanding of the variations in how different PSWs use language to support PCC with their clients during care. However, recording interactions over multiple time points during an eight-month period did allow for some variation. Insight into different interactions that PSWs may possibly have with their clients, including routine care and leisure-based activities, such as playing a game, going on a walk, preparing breakfast, and tidying the house also enabled variation in the dataset. This allowed for us to analyze and identify language-based strategies that may be more evident in one care context over the other,

thereby allowing for a more realistic understanding of how language may support PCC during care. Most PSWs who participated in this study self-identified as White (Non-Hispanic). Only one self-identified as Black/African Canadian. In addition, all persons living with dementia who participated in this study were White (Non-Hispanic). Perspectives of racially and ethnically diverse communities in regard to dementia and communication with persons living with dementia could have better contextualized communication patterns within the current PSW workforce.

4.5.2 Strengths

Strengths include an expanded language-based strategy coding framework, consideration of missed opportunities for PCC, and the study of naturalistic interactions in the home environment. An expanded language-based strategy coding framework makes the present study more comprehensive and consistent with the current state of research in the field of communication with persons living with dementia. A literature review was conducted to update the language-based strategy codebook developed by Savundranayagam and Moore-Nielson (2015) with new strategies along with new references for previously included strategies. This literature review identified several language-based strategies that were not previously included in the language-based strategy codebook, including ask for permission, fill in missing information, focused leads, give more information, give positive feedback, minimal cues, positive instructions, repetition of key words/topics, address by name/title, nouns instead of pronouns, and one proposition at a time. This permitted a thorough analysis of the language-based strategies known to be effective for communication with persons living with dementia, to date, and the person-centered approach to communication.

The present study emphasized that PCC goes beyond using effective language while communicating with persons living with dementia by extending the research objectives to consider the potential overlap between missed opportunities for PCC and language-based strategies. This unveiled several strategies, such as positive instructions and announcements of action/intent, that are effective in terms of their language-based functions and outcomes but may be susceptible to missed opportunities for PCC. The overlap also provided further support for the effectiveness of other language-based strategies in supporting PCC. For example, knowing the importance of giving the person living with dementia enough time to respond is underscored by

the frequent overlap exhibited between various question types and missed-opportunity omission when this language-based strategy was not used. Although the language-based strategy, allow time to respond, did not present frequent overlap with any of the four PCC indicators, its absence resulted in the association of almost all question structures with missed opportunities for PCC.

Finally, a major strength is that this study contributes important findings to research related to the home care setting where there is currently a significant lack of focus. This study is the first to examine naturalistic interactions with PSWs and persons living with dementia in a home care setting. The high prevalence of conversational interactions taking place when providing home care for persons living with dementia emphasizes the value of communication research in this setting. Also, communication on topics that are more personal seem to be more likely in the home care setting given the personal nature of the home environment and the time PSWs are able to spend with their clients with dementia. This facilitated the analysis of language-based strategies supporting PCC in interactions beyond routine care. Through this study, a realistic view of communication interactions between PSWs and persons living with dementia in the home care setting and how the goals of person-centered care can be achieved through effective language-based strategies was conveyed. This study was able to offer a unique perspective on the day-to-day interactions between PSWs and persons living with dementia during various care contexts in the home care setting, including routine care and leisure activities.

4.6 Future Directions

The present study uncovered language-based strategies, such as yes/no questions and affirmations that can support multiple facets of PCC. It would be valuable to perform a deeper analysis into the types, functions, and purposes of specific yes/no questions and affirmations that overlap with PCC indicators. Especially for yes/no questions, with which there is some contention regarding their effectiveness, future research could examine how certain types of yes/no questions may be more effective for communicating with persons living with dementia and supporting their personhood across care contexts (Ripich et al., 1999; Small et al., 2003).

Another direction for future research would be to analyze the responses from clients living with dementia to explore the effectiveness of language-based strategies that support PCC. In the

present study, only PSW c-units were coded for language-based strategies and PCC. However, the responses from the clients with dementia to these strategies were neither recorded nor interpreted using a formal coding system. Analyzing the communication of the person living with dementia would be beneficial to uncover how effective language-strategies that support personhood can impact care experiences from multiple perspectives and to assess whether a c-unit really was person-centered. Previous research has analyzed the verbal responses by persons living with dementia to PCC used by long-term care PSWs by identifying positive and negative reactions (Savundranayagam et al., 2016). Considering how persons living with dementia in a home care environment respond to specific language-based strategies used to facilitate PCC during care could provide evidence-based findings on the effectiveness of overlapping strategies. For example, the analysis of communication outcomes following various question types that support PCC could be conducted to examine whether clients living with dementia respond successfully (Ripich et al., 1999). The presence or absence of collaborative behaviours following the use of language-based strategies that support PCC could also be conducted to analyze responses of clients with dementia (Belzil & Vézina, 2015; Savundranayagam et al., 2016).

Further, a limitation of the present study that could be addressed in future research is the consideration of nonverbals when coding for PCC indicators and missed opportunities for PCC. Being person-centered extends beyond only using verbal communication strategies. In fact, nonverbal signals may often have a greater communicative role than the verbal message and therefore should be taken into consideration when coding for PCC (Kitwood, 1997). Future research could analyze video-recorded data and take nonverbals into consideration to investigate the overlap between language-based strategies and PCC or missed opportunities for PCC.

The present study analyzed where language-based strategies may be implicated in missed opportunities for PCC. Future research could go beyond an examination of the c-unit where the missed-opportunity took place by analyzing the entire communication sequence where the missed opportunity is located. Scrutinizing the c-unit(s) before and after could unveil factors contributing to the overlapping missed-opportunity and other features of the communication sequence. This would build on previous research in this area where missed opportunities were found to frequently follow person-centered utterances (Savundranayagam, 2014).

Finally, it would be beneficial to conduct an in-depth topic analysis to identify language-based strategies that frequently support PCC during conversational interactions between home care PSWs and persons living with dementia. We found that half of the interactions analyzed in this dataset were leisure-based and therefore consisted of numerous opportunities for conversation. Conducting an overlap analysis within this context alongside a topic analysis would also allow for the analysis of how specific topics present alongside the occurrence of PCC, language-based strategies, and overlapping strategies.

4.7 Conclusion

Persons living with dementia often experience communication challenges related to comprehension, expression, and other interactional elements. Language-based strategies are recommended in caregiving literature to accommodate and resolve some of these communication challenges. The person-centered care approach is the gold standard for providing quality care for persons living with dementia. Specifically, PCC strategies, including facilitation, recognition, validation, and negotiation, can help enrich care interactions with the goals of person-centered care. However, it was unknown whether these two approaches to communication would exhibit any overlap during home care interactions between PSWs and persons living with dementia.

To address this gap in the literature, the analysis of conversation was conducted to examine naturalistic interactions between PSWs and persons living with dementia in the home care setting. We aimed to identify language-based strategies that support PCC and language-based strategies potentially implicated in missed opportunities for PCC during home care interactions. Our findings demonstrated an overlap between the language-based and person-centered approaches since language-based strategies frequently supported PCC indicators. The findings also identified certain language-based strategies that can cause missed opportunities for PCC if used inappropriately when communicating with persons living with dementia. The home care setting is unique as it provides more opportunities for meaningful communication between PSWs and persons living with dementia due to the personal home environment, one-on-one interactions, and time allotted for care (Kamalraj et al., 2021). This was reflected in the language-based strategies overlapping more frequently with PCC indicators in the present study compared to previous work by Savundranayagam and Moore-Nielson (2015) in long-term care.

Ultimately, equipping PSWs with language-based strategies that support PCC will safeguard the integrity, respect, and recognition of persons living with dementia and enhance the relationship between PSWs and their home care clients with dementia. Caregivers can create opportunities that align with the abilities and expectations of persons living with dementia, as recommended in the Communication Enhancement Model, by using language-based strategies that support PCC. These opportunities, which may involve positive modifications of the environment and a conveyed understanding of individual needs and cues, can help caregivers facilitate communication with their clients (Ryan et al., 1995). Thereby, language-based strategies that support person-centered communication can contribute to the positive feedback loop that will empower persons living with dementia to interact with greater confidence and expectations of their role as an active participant in the interaction.

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Appendices

Appendix A: Research Ethics Board Approval Form

Western Research

Date: 18 March 2022

To: [redacted]

Project ID: 107789

Study Title: Enhancing person-centered communication among home care staff

Application Type: Continuing Ethics Review (CER) Form

Review Type: Delegated

Date Approval Issued: 18/Mar/2022

REB Approval Expiry Date: 23/Mar/2023

Dear [redacted]

The Western University Research Ethics Board has reviewed the application. This study, including all currently approved documents, has been re-approved until the expiry date noted above.

REB members involved in the research project do not participate in the review, discussion or decision.

Western University REB operates in compliance with, and is constituted in accordance with, the requirements of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2); the International Conference on Harmonisation Good Clinical Practice Consolidated Guideline (ICH GCP); Part C, Division 5 of the Food and Drug Regulations; Part 4 of the Natural Health Products Regulations; Part 3 of the Medical Devices Regulations and the provisions of the Ontario Personal Health Information Protection Act (PHIPA 2004) and its applicable regulations. The REB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.

Please do not hesitate to contact us if you have any questions.

Sincerely,

[redacted]

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix B: Summary of Applicable SALT Transcription and Segmentation Conventions

1. Transcript Format.

: Pause between utterances of different speakers. Example of five-second pause: : :05 or :05

; Pause between utterances of same speaker. Example of three-second pause: ; :03 or ;03

= Comment line. This information is used for transcriber comments and is not analyzed in any way.

{} Comments within c-units. This information is used for transcriber comments.

2. End of Utterance Punctuation. Every c-unit ends with one of these six punctuation symbols.

. Statement, comment.

! Surprise, exclamation.

? Question.

~ Intonation prompt.

^ Interrupted utterance.

> Abandoned utterance.

4. Unintelligible Segments. X is used to mark unintelligible sections of an utterance.

5. Mazes. Filled pauses, false starts, repetitions, and reformulations are marked using parentheses that surround the words and part words falling into these categories.

6. Omissions. Partial words and omitted words are marked using an asterisk (*).

7. Overlapping Speech. C-units that are spoken at the same time are marked using angle brackets that surround the words (< >).

Appendix C: Language-based Strategy Codebook

Language-based strategy	Description	Notes on Effectiveness	References
Comprehension – Strategies that address challenges with…			
Understanding complex sentences at initial presentation (Small et al., 1997; Wilson et al., 2012)			
Verbatim repetition	The caregiver repeats the previous utterance in its entirety or with all content words carried over.	Caregivers can use verbatim repetitions to facilitate understanding of complex sentences instead of limiting communicative opportunities by communicating with persons living with dementia using only simple sentences. Persons living with dementia show improved comprehension after hearing complex sentences a second time (Small et al., 1997).	(Haberstroh et al., 2011; Savundranayagam & Lee, 2017; Savundranayagam & Moore-Nielsen, 2015; Small et al., 2003; Small et al., 1997; Weitzel et al., 2011; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012; Wilson et al., 2013)
Paraphrased repetition	The caregiver repeats the initial message, while changing some of the content or structure of the utterance to aid comprehension.	If the initial form of an utterance posed comprehension difficulties for the person living with dementia, paraphrasing is recommended as a strategy to provide clarification and facilitate understanding (Small et al., 2003; Small & Gutman, 2002; Small JA et al., 1997; Wilson, Rochon, Leonard, et al., 2012). The simplification	(Dijkstra et al., 2002; Savundranayagam & Lee, 2017; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2011, 2014; Small et al., 2003; Small & Gutman, 2002; Small et al., 1997; Tappen et al.,

Language-based strategy	Description	Notes on Effectiveness	References
		strategies that follow can be used when paraphrasing.	1997; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012)
Nouns instead of pronouns	The caregiver uses specific concrete nouns to help make verbal messages more direct rather than using pronouns which can be more difficult to comprehend.	Grammatically complex sentences can be simplified by minimizing the use of pronouns. Thereby, less inferences are needed and cohesion can be maintained.	(Dijkstra et al., 2002; Perry et al., 2005; Ripich, 1994; Weitzel et al., 2011; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012)
One proposition at a time	The caregiver presents utterances containing one proposition at a time in conversation. This entails including a single idea, instruction, or question in an utterance when conversing or assisting the person living with dementia in a task.	One proposition per utterance minimizes the demands placed on the person living with dementia by avoiding instances in which they must divide their attention (Haberstroh et al., 2011). Reducing the number of propositions improves comprehension (Haberstroh et al., 2011; Wilson, Rochon, Leonard, et al., 2012). The number of propositions per utterance is thought to be a more significant barrier than grammatical	(Haberstroh et al., 2011; Savundranayagam & Lee, 2017; Savundranayagam & Orange, 2014; Small et al., 2003; Small & Gutman, 2002; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012)

Language-based strategy	Description	Notes on Effectiveness	References
		complexity (Rochon et al., 1994; Wilson et al., 2013).	
Use right-branching sentences	The caregiver phrases their message as a right-branching sentence and avoids the use of left-branching sentences. The left-branching form includes sentences where the subject and verb do not appear until later on in the utterance after several initial elements. On the contrary, subject and the verb, the most important elements, appear at or near the beginning of the preferred right-branching form. Right-branching sentence: "You need to get dressed before having breakfast."	Left-branching sentences are more syntactically complex and often contain more clauses than right branching sentences. They place significant demands on the working memory of persons living with dementia which may affect cohesion and comprehension during conversational interactions.	(Kemper and Harden, 1999; Savundranayagam and Moore-Nielson, 2015)

Language-based strategy	Description	Notes on Effectiveness	References
	Left-branching sentences: "Before having breakfast, you need to get dressed."		
Place modifiers after verbs	Ex., Do you want juice, apple or orange?		(Savundranayagam and Moore-Nielson, 2015)
Place modifiers after nouns	Ex., Walk slowly with me.		(Savundranayagam and Moore-Nielson, 2015)
Following complex and multi-step requests and instructions (Wilson et al., 2013)			
One proposition at a time (Question/Instruction)	The caregiver presents utterances containing one proposition at a time in conversation.	One proposition per utterance minimizes the demands placed on the person living with dementia by avoiding instances in which they must divide their attention (Haberstroh et al., 2011). Reducing the number of propositions improves comprehension	(Haberstroh et al., 2011; Savundranayagam & Lee, 2017; Savundranayagam & Orange, 2014; Small et al., 2003; Small & Gutman, 2002; Wilson et al., 2013; Wilson,

Language-based strategy	Description	Notes on Effectiveness	References
	They ask one question at a time while giving the person living with dementia time to process and respond appropriately. They provide single step instructions while giving time for the person living with dementia to respond appropriately.	(Haberstroh et al., 2011; Wilson, Rochon, Leonard, et al., 2012). The number of propositions per utterance is thought to be a more significant barrier than grammatical complexity (Rochon et al., 1994; Wilson et al., 2013).	Rochon, Leonard, et al., 2012, 2012; Wilson, Rochon, Mihailidis, et al., 2012)
Positive instructions	The caregiver uses instructions phrased to guide the resident on what to do rather than telling them what not to do. Positive instruction: Have a seat here.	Instructions phrased in the positive form result in persons living with dementia exhibiting collaborative behaviours (Belzil G & Vézina, 2015).	(Belzil & Vézina, 2015; Bourgeois et al., 2003)

Language-based strategy	Description	Notes on Effectiveness	References
	Negative instruction: Don't sit down there.		
Long pauses and slower responses (Ripich et al., 1994)			
Allow time to respond	The caregiver allows an appropriate amount of time for the person living with dementia to process, comprehend, and respond to a statement, request, or instruction without interrupting or prompting.	When caregivers modify their turn taking behaviour by allowing pauses, the person living with dementia is given the opportunity to overcome expressive difficulties, such as word finding issues. It is important to pause for an appropriate amount of time to avoid threating the continuity of conversation (Mueller & Guendouzi, 2005).	(Acton et al., 2007; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Sabat, 1991; Small et al., 2003; Weitzel et al., 2011)
<u>Expression - Strategies that address challenges with…</u>			
Word finding problems (Acton et al., 2007; Dijkstra et al., 2002; O'Brien et al., 2020; Savundranayagam & Orange, 2011, Savundranayagam & Orange, 2014)			

Language-based strategy	Description	Notes on Effectiveness	References
Unfinished sentence prompts	The caregiver poses an unfinished sentence that person living with dementia is invited to complete.	Prompts allow the person living with dementia to come to a solution to their word finding challenges on their own while still receiving support from their caregiver. Filling in the word for the person living with dementia may limit expressive opportunities.	(Savundranayagam and Moore-Nielson, 2015; Santo Pietro and Ostuni, 2003)
Allow time to respond	The caregiver allows an appropriate amount of time for the person living with dementia to respond to a statement, request, or instruction without interrupting or prompting.	When caregivers modify their turn taking behaviour by allowing pauses, the person living with dementia is given the opportunity to overcome expressive difficulties, such as word finding issues. It is important to pause for an appropriate amount of time to avoid threating the continuity of conversation (Mueller & Guendouzi, 2005).	(Acton et al., 2007; Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Sabat, 1991; Small et al., 2003; Weitzel et al., 2011)
Reduction in communication output (Dijkstra et al., 2002; Savundranayagam & Orange, 2011, Savundranayagam & Orange, 2014)			
Yes/no questions	Questions in which the speaker outlines a complete proposition therefore the		(Ripich et al., 1999; Savundranayagam & Lee, 2017; Savundranayagam &

Language-based strategy	Description	Notes on Effectiveness	References
Closed-ended questions	listener only needs to provide a confirmation or denial response or a one-word response. Yes or no and closed-ended questions that rely on semantic memory rather than a recollection of past events are recommended.	Questions in this format already provide complete propositions and require a simple yes/no response or a one-word response (Small & Perry, 2005). This may be effective when trying to accommodate difficulties generating additional information or responses or during collaboration on tasks that are more demanding (Ripich et al., 1999; Small & Perry, 2005). Closed-ended questions are also helpful during care because they are focused and specific (Tappen et al., 1997).	Moore-Nielsen, 2015; Small et al., 2003; Small & Perry, 2005; Tappen et al., 1997; Wilson, Rochon, Mihailidis, et al., 2012)
Choice questions	Questions to ask for a person's opinion, point of view, permission, or perspective by providing clear choices. Choice questions that rely on semantic memory rather than a recollection of past events are recommended.	When a caregiver cues the person living with dementia by providing choices embedded in their question, they are more likely to respond successfully and access preserved knowledge rather than generating a new answer (Ripich et al., 1999).	(Ripich et al., 1999; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Small & Perry, 2005; Wilson et al., 2013; Wilson, Rochon, Mihailidis, et al., 2012)

Language-based strategy	Description	Notes on Effectiveness	References
Limited contribution and opportunities for contribution			
Open-ended questions	Open-ended questions are questions that asked for description, explanation, or opinion and required an answer of more than one word. Open ended questions that rely on semantic memory rather than a recollection of past events are recommended.	Enables the development of a relationship between caregiver and person living with dementia by promoting the unrestrained expression of feelings, opinions, and concerns (Tappen et al., 1997). Persons living with dementia are able to respond to open-ended questions and closed-ended questions with equal ability . Responses to the former were longer and semantically rich in comparison (Tappen et al., 1997).	(Acton et al., 2007; Perry et al., 2005; Ripich et al., 1999; Sangrar et al., 2018; Savundranayagam & Moore-Nielsen, 2015; Savundranayagam & Orange, 2014; Tappen et al., 1997; Wilson et al., 2013; Wilson, Rochon, Mihailidis, et al., 2012)
Open leads	The caregiver uses broad openings that initiate conversation but do not guide it towards a specific topic or correct response.	The person living with dementia is given the opportunity to make meaningful contributions to the conversation by sharing their feelings and concerns. They are given the space to guide the conversation to topics	(Tappen et al., 1997)

Language-based strategy	Description	Notes on Effectiveness	References
	"Tell me how you are feeling today"	of interest or importance (Tappen et al., 1997).	
Focused leads	The caregiver uses focused leads to open conversation and attempts to guide the conversation to a specific subject or direction. "It looks like it's getting chilly out, isn't it?"	When the person living with dementia encounters difficulties contributing to the continuity of a conversation, caregivers may use focused leads to facilitate conversational flow and allow for enhanced contributions from the conversational partner (Tappen et al., 1997).	(Acton et al., 2007; Tappen et al., 1997)
Remembering and processing what has been communicated (Dijkstra et al., 2002; Ripich, 1994)			
Repetition of key words and topics	Support the conversation by providing reminders of the	Persons living with dementia often have diminished working memory capacity and	(Dijkstra et al., 2002; Ripich, 1994)

Language-based strategy	Description	Notes on Effectiveness	References
	key topics or words to orient the person living with dementia.	therefore may find it difficult to maintain coherence, cohesion, and conciseness in conversation (Dijkstra et al., 2002). Caregivers who provide reminders of the topic and key words minimize the demands on working memory and facilitate topic maintenance.	
Topic maintenance and conversational continuity (Acton et al., 2007; Ramananthan, 1997; Tappen et al., 1997)			
Open leads	The caregiver uses broad openings that initiate conversation but do not guide it towards a specific topic or correct response. Tell me how you are feeling today”	The person living with dementia is given the opportunity to make meaningful contributions to the conversation by sharing their feelings and concerns. They are given the space to guide the conversation to topics of interest and facilitate continuity of conversation (Tappen et al., 1997).	(Tappen et al., 1997)

Language-based strategy	Description	Notes on Effectiveness	References
Focused leads	The caregiver uses focused leads to open conversation and attempts to guide the conversation to a specific subject or direction. "It looks like it's getting chilly out, isn't it?"	When the person living with dementia encounters difficulties contributing to the continuity of a conversation, caregivers may use focused leads to facilitate conversational flow and allow for enhanced contributions from the conversational partner (Tappen et al., 1997).	(Acton et al., 2007; Tappen et al., 1997)
Newsmarks	Newsmarks are short statements or questions such as "my goodness", "wow", "oh really?" that can show enagement and interest during conversation.	Newsmarks indicate the noteworthiness of the prior turn of the person with dementia and can promote further conversation (e.g., my goodness, wow, oh really?).	(Savundranayagam and Moore-Nielson, 2015; Ramananthan, 1997)
Minimal cues	Conversational cue that is minimal in nature and that is used to show that the listener is engaged in conversation. The minimal cue does not contribute information to the conversation	Minimal conversational cues can help maintain conversational flow when the person living with dementia exhibits difficulty keeping its continuity (Acton et al., 2007).	(Acton et al., 2007)

Language-based strategy	Description	Notes on Effectiveness	References
	Minimal cues: Yes, Okay, Mhm		
Affirmations	Utterances that display agreements or acknowledgement of the feelings of the person living with dementia. Minimal turns – Similar to minimal cues, however they are used to show agreement instead of engagement	Affirmations in the form of minimal turns act as continuity elements within conversation to help keep the interaction on track (Ramanathan, 1997). Affirmations may help the caregiver show interest in what the person living with dementia is saying by offering agreement and encouragement (Santo Pietro and Ostuni, 2003).	(Ramanathan, 1997; Santo Pietro and Ostuni, 2003)
Matching Comments/Matching Associations	Caregivers offering personal opinions or experiences in response to the interactant's previous utterance.	Matching comments and associations promote the continuity and conversational flow during interactions that can sometimes become one sided (Santo Pietro & Ostuni, 2003; Savundranayagam and Moore-Nielson, 2015).	(Santo Pietro & Ostuni, 2003; Savundranayagam and Moore-Nielson, 2015

Language-based strategy	Description	Notes on Effectiveness	References
Increased awareness of communication problems; Self-correcting or apologizing for communication difficulties (Ripich et al., 1994)			
Give positive feedback	The caregiver provides the person living with dementia with positive feedback, praise, and encouraging comments during the conversation and/or task.	Positive feedback facilitates the acceptance or satisfaction of the person living with dementia prior to or following a task or procedure by acknowledging the concerns and feelings of the person living with dementia by providing positive feedback (Dijkstra et al., 2002).	(Acton et al., 2007; Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012)
Affirmations	Utterances that display agreements or acknowledgement of the feelings of the person living with dementia. Intention to fulfill – often accompanies requests or instructions where the caregiver offers to or says that they will fulfill a request or task for the other person	Affirmations can be used to acknowledge the feelings of the person living with dementia . They help caregivers show interest in what the person living with dementia is saying by offering agreement and encouragement (Santo Pietro & Ostuni, 2003).	(Ramanathan, 1997; Santo Pietro & Ostuni, 2003)

Language-based strategy	Description	Notes on Effectiveness	References
	Softening – often accompanies a request or instruction and are used to soften the directness of the request Minimal turns – Similar to minimal cues, however they are used to show agreement instead of engagement		
Interactions: Strategies that address challenges with…			
Refusal of care (Belzil G & Vézina J, 2015)			
Announce activity or intent clearly	The caregiver announces their intent prior to beginning a care task and explains each step of the task that will be carried out.	It is recommended that caregivers helping persons living with dementia with their care tasks should announce each activity and/or intent clearly to promote collaboration and cooperation.	(Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012; Wilson, Rochon, Mihailidis, et al., 2012)

Language-based strategy	Description	Notes on Effectiveness	References
Permission-seeking question	The caregiver should ask for permission from the person living with dementia prior to initiating a task as well as along the appropriate steps of a task or procedure. "Mrs Jones, may I please take your blood pressure? "I need to help you move to the other chair. Is that alright?"	When initiating caregiving tasks and procedures, caregivers who first ask the person living with dementia for their permission can help prepare them for the steps that will follow (Weitzel et al., 2011).	(O'Brien et al., 2020; Weitzel et al., 2011)
Politeness	The caregiver uses polite language to help support the person living with dementia.	Using politeness can help create a safe environment during care interactions and can promote collaboration by the person living with dementia (Medvene and Lann-Wolcott, 2010)	(Medvene and Lann-Wolcott, 2010; Savundranayagam & Moore-Nielson, 2015)

Language-based strategy	Description	Notes on Effectiveness	References
Affirmations	Utterances that display agreements or acknowledgement of the feelings of the person living with dementia. Intention to fulfill – often accompanies requests or instructions where the caregiver offers to or says that they will fulfill a request or task for the other person Softening – often accompanies a request or instruction and are used to soften the directness of the request	Using affirmations to accompany requests and instructions can help soften their directness and put the person living with dementia at ease (M. Y. Savundranayagam & Moore-Nielsen, 2015).	(Ramanathan, 1997; Santo Pietro & Ostuni, 2003)
Conversation breakdowns; Gaps in mutual understanding (Savundranayagam & Moore-Nielson, 2014)			
Verification questions/comments	The caregiver may confirm understanding by restating what was understood or asking for clarification on a	The use of a verification question/comment cans serve as an of indirect repair that is recommended to seek clarification on a potential misunderstanding or to verify	(Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson et al., 2012)

Language-based strategy	Description	Notes on Effectiveness	References
	misheard/misunderstood utterance.	understanding (Savundranayagam & Moore-Nielsen, 2015; Wilson et al., 2013; Wilson et al., 2012).	
Inform what was misunderstood	Caregivers may inform the person living with dementia of gaps in understanding by saying “I don’t understand…”.	Caregivers may use this strategy to address gaps in mutual understanding that arise in conversation (Savundranayagam & Orange, 2014).	(Savundranayagam & Orange, 2014).
Ask for repetitions	When a conversational turn from the person living with dementia is unclear or misunderstood/misheard, a caregiver may ask them to repeat what they said.	This repair strategy allows the caregiver to signal that a misunderstanding is the result of inattention, poor hearing, or imprecise speech, and resolve the breakdown before proceeding (Savundranayagam & Orange, 2014).	(Savundranayagam & Orange, 2014).
Give more information	Caregivers may give more information as a repair strategy to add clarification or specification to an utterance that may have resulted in a misunderstanding or communication breakdown.	Elaborating on concepts in the original utterance is an effective repair strategy that is also perceived as moderately helpful by caregivers.	(Savundranayagam & Orange, 2014)

Language-based strategy	Description	Notes on Effectiveness	References
Fill in missing information	Caregivers may fill in missing information when persons living with dementia encounter a word finding problem or other challenges in conversation.	Filling in missing information is an effective repair strategy that is also perceived as moderately helpful by caregivers.	(Savundranayagam & Orange, 2014)
Other			
Address by name and/or title	The caregiver greets the person living with dementia or calls their attention by using their name and/or title of preference.	Most persons living with severe Alzheimer's disease are able to recognize and respond appropriately to the spoken form of their name being used to greet or call their attention (Kim & Bayles, 2007). Formal caregivers are therefore urged to address the person living with dementia by their preferred name and title, and to avoid terms of endearment, such as honey or sweetie, categorized as elderspeak (Weitzel et al., 2011).	(Bourgeois et al., 2003; Savundranayagam & Moore-Nielsen, 2015; Weitzel et al., 2011; Wilson et al., 2013; Wilson, Rochon, Leonard, et al., 2012)

Language-based strategy	Description	Notes on Effectiveness	References
Greeting	Greet the person living with dementia when entering or leaving the room. "Good morning Mrs. Richardson"	Persons living with Alzheimer's disease whose communication skills were assessed using the Functional Assessment Staging scale responded appropriately to greetings and scored highest in this subsection (Kim & Bayles, 2007).	(Bourgeois et al., 2004; Kim and Bayles, 2007)

Curriculum Vitae

Name: Reanne Mundadan

Post-secondary Degrees:

The University of Western Ontario
London, Ontario, Canada
2020-present M.Sc.

The University of Western Ontario
London, Ontario, Canada
2016-2020 B.Sc. (Hons)

Honours and Awards:

Ontario Graduate Scholarship, 2021

University of Western Ontario Gold Medal, 2020

Western Scholarship of Excellence, 2016

Related Work Experience:

- Research Assistant, Sam Katz Community Health and Aging Research Unit, 2019-present
- Trainee, Canadian Consortium on Neurodegeneration in Aging, 2020-present
- Graduate Teaching Assistant, The University of Western Ontario, 2020-2022
    - Health Sciences 3071: Determinants of Health and Disease (Winter 2020; Fall 2022)

Publications:

Iroanyah, N., Savundranayagam, M.Y., Mundadan, R.G., Sivananthan, S. Equity, diversity, and inclusion in dementia diagnosis: A Canadian perspective. World Alzheimer Report 2021: Journey through the diagnosis of dementia. London, England: Alzheimer's Disease International.

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Neurodegeneration Prevention **Th**erapy Study **U**sing **M**ultidimensional Interventions for **B**rain **S**upport - **U**nified **P**latform, or CAN-THUMBS UP.

Conference Presentations:

Mundadan, R.G., Savundranayagam, M.Y., Orange, J.B., Murray, L. Language-based strategies that support PCC with persons living with dementia in home care. Presented at Annual Health and Rehabilitations Sciences Conference, Western University, February 3, 2021.

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