

**EXPLORING RESIDENTIAL CARE AIDE EXPERIENCES
WITH ORAL MALODOUR IN LONG-TERM CARE.**

by

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Abstract

OBJECTIVE: Numerous studies to date have revealed that the oral health status of people living in long-term care (LTC) facilities is poor. As an elderly resident's ability to perform personal oral care tasks declines, so does their oral health mainly in the form of periodontal disease and caries. Poor oral health also contributes to oral malodour (foul odour emanating from an individual's breath), which negatively impacts an individual's verbal interactions and social acceptability. There is evidence suggesting that the geriatric population is more prone to oral malodour. Studies done on oral malodour have looked at aspects such as sources, measurement techniques, management strategies and how malodour impacts the individual suffering from it. However, a deeper understanding of the impact of oral malodour on care givers has yet to be investigated. The following study investigated using an interpretive qualitative approach and a social constructivism interpretive framework the question: what experiences do residential care aides (RCAs) have with individuals living with oral malodour in a LTC facility?

METHODS: The study was conducted through face-to-face interviews with RCAs, which were recorded and transcribed verbatim, observations of RCAs in their work environment, as well as RCA personal logs of their daily experiences with odour during caregiving. Thereafter, data was analyzed and coded for emerging themes.

RESULTS: Five main themes emerged that described the experiences of RCAs working with residents with odour; challenges of care giving, knowledge of oral malodour management, attitudes and behaviours, attitude and job satisfaction, culture and odour. Collectively these factors affected the quality of interactions the RCA had with the resident.

CONCLUSION: Oral malodour among residents was a difficult condition for most of the participants in this study to deal with, and appeared to impact both the quality and quantity of

care they provided. Knowledge and understanding of the sources of oral malodour and how to manage it were found to be one of the factors that influenced the provision of care among the participants. Participant attitude, cultural beliefs and organizational beliefs influenced both the importance of oral malodour and how it was managed.

Preface

This dissertation is the original, unpublished and independent work of Charanpreet Dhani.

Ethics approval for this study (H13-03529) was received from the University of British Columbia, Behavioural Research Ethics Board.

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List of Abbreviations

ADL-Activities of Daily Living

CIHI-Canadian Institute for Health Information

CH₃SH-Methyl Mercaptan

H₂S-Hydrogen Sulfide

IADL-Instrumental Activities of Daily Living

LTC-Long-term Care

RCA-Residential Care Aide

VSC-Volatile Sulfur Compound

IL1- Interleukin 1

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Thank you all.

Sincerely,

Charn

Dedication

To my wife,

Chharnjeet

My Son and Daughter,

Jahnav & Munsa

*I could not have accomplished this work without the love,
support, and patience you gave me.*

Chapter 1: Introduction

The oral health status of geriatric people living in LTC facilities is poor (Weening-Verbree, Huisman-de Waal, van Dusseldorp, van Achterberg, & Schoonhoven, 2013). This can be due to a decline in an elderly resident's ability to perform personal oral care tasks and the reliance on others for assistance. When not attended to properly, this lack of adequate daily oral care can contribute to poor oral health mainly in the form of periodontal disease and caries (Peltola, Vehkalahti, & Wuolijoki-Saaristo, 2004). Furthermore poor oral health also contributes to oral malodour (foul odour emanating from an individual's breath) which negatively impacts an individual's social communication and social acceptability (van den Broek, Feenstra, & de Baat, 2007). Sources of oral malodour can originate from tongue coating, periodontal pockets, deep carious lesions, exposed necrotic tooth pulps, pericoronitis, mucosal ulcerations, healing (mucosal) wounds, impacted food or debris, imperfect dental restorations and unclean dentures (van den Broek et al., 2007). There is evidence suggesting that the geriatric population is more prone to oral malodour (Awano et al., 2011). Much of what is known about oral malodour is related to sources, measurement techniques, management strategies and how malodour impacts the individual suffering from it (Hughes & McNab, 2008). However, we know little about how this condition impacts those around the sufferer and even less about how it impacts caregivers. Therefore, this study was undertaken to explore the experiences of front-line caregivers, residential care aides (RCA's) to gain a deeper understanding of the impact of oral malodour in their daily interactions with residents. Utilizing an interpretive

qualitative approach, this study aimed to explore and provide insight into the experiences of RCAs working with residents who have oral malodour.

1.1 Geriatric Population

According to the 2011 census report, the baby boomer generation (individuals born 1946-1965) consisted of 9.6 million people; approximately three out of every ten Canadians are baby boomers (Martle & Menard, 2013). In 2012 there were approximately 1.4 million people in Canada aged 80 and above and in the year 2036 this number is expected to be 3.3 million (Jones, 2007). As our population ages and the overall demographics change, it is vital to gain a better understanding of this particular group.

Aging has been typically associated with a gradual health decline due to increasing risk of disability or disease (Ramage-Morin, 2005) and a greater need for assistance to live a healthy life. Assistance is needed with instrumental activities of daily living (IADLs) such as cooking, shopping and managing medications, and as the need for assistance increases, older adults may need help with activities of daily living (ADLs) such as walking, bathing, eating, dressing and toileting. With the rapid growth of our older adult population the stereotype of increased need for assistance has been challenged with the concept of “successful aging”. “Successful aging is a multidimensional concept that includes physical, psychosocial and spiritual components” (Ramage-Morin, 2005). The level of “success” is measured by the senior’s self-perception of his or her health and wellbeing.

Older adults value their autonomy and many prefer to stay in their homes for as long as they can with or without assistance. For those who do require assistance, options such as home care which consists of a team of professional health care workers that attend an individual’s own

home to provide care, aid in keeping older adults “aging in place”(Rowe & Kahn, 1987). Informal caregivers, such as spouses or children also provide care and assistance, which further aids an older adult in remaining in their own home. When formal care is more readily available, as it is in Canada, usually a combination of formal and informal care is utilized (Suanet, Van Groenou, & Van Tilburg, 2012). Approximately, one million Canadians receive home care and the majority (82%) are seniors (Canadian Home Care Association (CHCA)2008, Canadian Institute for Health Information (CIHI) 2011). Due to the home care options available to them, fewer seniors are choosing to go to residential or long-term care facilities, and an increasing number are managing to stay in their homes longer. In 2006, only 1.4% of those between age 65 and 74 and 12% of those 75 and older lived in a care facility, whereas in 1981, rates were 3% and 17% respectively (CIHI, 2003;Statistics Canada, 2011).

1.1.1 Geriatric Population and Long-Term Care

Although older adults prefer to stay in their homes, some must for health, safety and social reasons move into a LTC facility. The five main criteria found to influence institutionalization among older adults are advancing age, living alone, using ambulation aids, mental disorientation, and needing assistance with ADLs and IADLs (Branch & Jette, 1982). Seniors living in LTC facilities compared to those living at home are more likely to require extensive assistance with ADLs, such as bathing and toileting (74% versus 18%), and also more likely to have moderate to severe cognitive impairment (60% versus 14%) (CIHI, 2011). However, among the almost one million seniors receiving formal home care more than a third (34%) reported daily pain and 14% reported signs or symptoms of depression. In contrast, in long term care almost a third (31%) of seniors showed signs of depression, almost one in six

(16%) reported daily pain, and five percent had an advanced pressure ulcer, which usually is an indicator of quality of care as pressure ulcers result from a resident being left in one position for too long (CIHI, 2011).

The mere thought of moving into a LTC facility can evoke strong feelings and indeed one study found that 29% of older adults would rather die than move into such a setting (Mattimore et al., 1997). Albeit, there is also evidence to support that seniors can find satisfaction living in a LTC facility when they are able to come to terms with their new living arrangement (Zinn, Lavizzo-Mourey, & Taylor, 1993). New residents to LTC will attempt to adapt to community life in the facility which provides them with a sense of continuity from their home life. However, if this is not achieved it can weaken their sense of personal identity (Robichaud, Durand, Bédard, & Ouellet, 2006). Meaningful interactions and daily social involvement are critical for the overall wellbeing of the residents and relations with their caregivers plays a major role in how well residents adapt to their new environment (Hebert, 2010).

1.2 Philosophies of Care in LTC

The type of care that residents in LTC receive and the way in which it is delivered is crucial to their well-being. There has been an increased emphasis for culture-change in LTC facilities over the years, as many older adults have generally wanted to avoid living at these facilities due to their rigid routines for daily life (Kane, 2001). Residents want to maintain their autonomy and can be quite discouraged when they are told what time they can get up, when they can eat, what time they have to go to bed, and how and when they will receive care (Donnelly, Clarke, Phinney, & MacEntee, 2015) . Due to the emphasis on culture change, LTC facilities have adopted many different types of care philosophies such as the Eden Alternative, Wellspring

Innovative Solutions, Greenhouse Project, and the Holistic Approach to Transformational Change (Hatch) model (White-Chu, Graves, Godfrey, Bonner, & Sloane, 2009). The process of culture-change in LTC involves a shift in philosophy and practice away from the typical medical model of care towards a more person-centered model of care in which the needs and preferences of the resident and their families are first and foremost, and that care is delivered based on shared decision-making between the resident and their caregivers to support a positive relationship between the two (White-Chu et al., 2009). Practicing person-centered care in LTC facilities has been found to have psychological benefits to both residents and staff through the increased autonomy that both experience (Brownie & Nancarrow, 2013). Furthermore, person-centered care has been found to help reduce staff stress, strain, and improve both personal and professional satisfaction (Jeon et al., 2012). However, when staff are not able to provide this form of care due to a lack of resources, support and appreciation from administrators, then employee turn-over in LTC facilities is high (Edvardsson, Fetherstonhaugh, McAuliffe, Nay, & Chenco, 2011).

The implementation of a person-centered model of care is often a challenging process, as it requires dedicated leadership over a period of years, a stable workforce, buy-in from nursing staff, and funds available for environmental improvements at the facility (Koren, 2010). As an example, the Eden Alternative philosophy utilizes environmental and social enrichment to overcome boredom, feelings of helplessness and loneliness among residents (Thomas, 1996). This is achieved by transforming LTC facilities to “lush, lively habitats” with a focus on ecology of the home with gardens, animals and children (White-Chu et al., 2009). Additionally, there is a strong emphasis on increasing autonomy of the residents and giving them the ability to reciprocate their care through helping staff with daily duties such as laundry (White-Chu et al.,

2009). Efforts to implement the Eden Alternative philosophy in LTC facilities showed that it was only effective in facilities that had buy-in from administration who provided leadership to the staff through modeling and constantly reminding them to keep residents at the center of their decision-making (Ransom, 2000).

The effectiveness of culture-change in LTC facilities can and should also be evaluated by considering the resident's perspective. However, even with a strong emphasis placed on this type of care, some residents still report a lack of a caring environment, human indignities, and a loss of autonomy (Donnelly & MacEntee, 2015). These findings challenge the concept of person-centered care and suggest as do others (Lopez, 2013; Lopez, 2006) that more focus is placed on the type of care visible to the public, such as recreational activities, and ignored in the more private direct care of the residents provided in bedrooms and bathrooms (Donnelly & MacEntee, 2015).

Implementation of person-centered care within a facility is usually well received by the nursing staff because the message of putting the resident's needs first and being an equal partner in decision-making resonates well with them. The challenge arises though when staff believe they are providing person-centred care, but in fact they are not (Ekman et al., 2011). Staff often when pressed for time will abandon person-centered care and do the necessary work like changing a continent pad, while paying no attention to the residents' feelings and emotions at the time and essentially putting the task before the person (Ekman et al., 2011). This basic need of being treated as a person is evidenced by research that included the opinions of residents and their families, identifying reliable quality of life indicators for individuals in LTC. Of the eleven quality of life indicators tested, the four most important were: being treated with respect,

sympathetic involvement in relationships and perceived competency when providing care, and attitudes (Robichaud et al., 2006).

1.3 Residential Care Aide Profile

Residential care aides are an important component of the care facility team. They are the frontline staff involved in the direct care of residents by assisting them with getting up, bathing, oral care, toileting, eating and helping residents move around (McGilton, Sidani, Boscart, Guruge, & Brown, 2012). They also provide a valuable role in the social and emotional support for residents. Residents with a close relationship to at least one staff member and at least one close friend in the facility, are far more likely to report self-perceived positive health (Hebert, 2010). This becomes ever more important when residents have little interaction with family and friends, because they are particularly vulnerable emotionally and rely on their relationship with nursing staff to have a sense of self-worth (Haugan, 2013).

Long-term care in Canada has been described as a highly stressful environment, where the care provided by RCAs and other LTC workers is often task-oriented with time constraints (Daly & Szebehely, 2012). This model of care resembles an “assembly line”, where residents are put through their daily activities with little to no interaction with their caregivers (Daly & Szebehely, 2012). When RCAs work under time constraints care can be completed to substandard levels resulting in a lack of satisfaction in performance and ultimately psychosocial stress amongst these caregivers (Testad, Mikkelsen, Ballard, & Aarmland, 2010). This effect is compounded when RCAs also deal with challenges relating to the uncooperative nature of certain residents who can at times become violent (de Mello, Ana Lucia, Schaefer Ferreira & Padilha, 2009). How well RCAs relate to residents during caregiving situations affects a

resident's mood; a positive resident leads to the RCA reciprocating positively back to the resident which helps to improve the overall relationship between the two parties (McGilton et al., 2012). However, when interactions and relationships are poor, depression and anxiety in residents increase (Haugan, 2013).

1.4 Daily Mouth Care in LTC Facilities

One of the many types of care that RCAs provide on a daily basis is mouth care which includes brushing the resident's teeth, tongue and oral tissues, and cleaning dentures. However, several studies have shown that daily mouth care is not carried out consistently or effectively in LTC facilities (Bowers, Esmond, & Jacobson, 2000; Dharamsi, Jivani, Dean, & Wyatt, 2009).

Although 70 percent of RCAs believed it is important to check the resident's mouth on a daily basis, and over 90 percent believed that daily oral hygiene improves quality of life, only 29 percent agreed that residents should receive mouth care on a daily basis (Dharamsi et al., 2009). This study also found that 25 percent of residents did not have a toothbrush or toothpaste in their room, and 40 percent of mouth care products were found in unhygienic locations in common drawers with other personal belongings like wash basins, suppositories and rash ointments (Dharamsi et al., 2009).

The provision of daily mouth care can be challenging. Care staff will often state is that it is easy for them to notice if a resident has not had their hair combed that day, or who have clothing out of place. Therefore, they assist that resident with those needs, but it is difficult to tell which resident has not had mouth care until obvious signs such as bad breath or signs of oral infection are present (Yoon & Steele, 2012). Therefore, oral care becomes more of a reactionary procedure to existing oral disease versus a preventative procedure (Yoon & Steele, 2012).

Furthermore, RCAs will often cite other issues such as being understaffed, pressed for time, or combative residents living with dementia who are uncooperative in receiving mouth care, for not providing regular mouth care to residents (Bowers et al., 2000; Dharamsi et al., 2009). A negative attitude towards providing oral care is also a determining factor in whether care staff provides adequate oral care or not (Chalmers, Levy, Buckwalter, Ettinger, & Kambhu, 1996).

There have been many attempts at providing in-service education to RCAs to help improve oral care in LTC facilities, but such attempts have fallen short of the intended goal (Dharamsi et al., 2009; MacEntee et al., 2007). Some educational strategies have shown a positive effect on the outcome of knowledge and health beliefs among care staff, however this effect has not been consistent in relation to the oral health of residents (Weening-Verbree et al., 2013), which even today remains less than adequate.

1.5 Halitosis/Oral Malodour

One of the unfortunate consequences of lack of daily mouth care can be the development of halitosis, which is a broad term used to describe foul odour emanating from an individual's breath (van den Broek et al., 2007). In simple terms it is often referred to as bad breath, and can negatively impact social relations (van den Broek et al., 2007). Halitosis is a troubling condition for all those who experience it, and aside from caries and periodontal disease, is the most common reason that patients seek treatment at a dental clinic (Loesche & Kazor, 2002).

Halitosis can be classified as genuine halitosis, pseudo-halitosis or halitophobia (van den Broek et al., 2007). Genuine halitosis is indicated when a person has foul breath odour beyond the socially acceptable range. If a person complains of having foul breath odour and evidence of such odour is unsubstantiated, then the person is classified as having pseudo-halitosis. If a person

receives treatment for halitosis or confirmation of pseudo-halitosis, but still believes that he or she has genuine halitosis then the diagnosis is that of halitophobia (van den Broek et al., 2007; Yaegaki & Coil, 2000). Genuine halitosis is further classified as relating to regular body function (physiological), or relating to disease (pathological) and can originate from inside (intra-oral) or outside the mouth (extra-oral)(Yaegaki & Sanada, 1992). Halitosis is largely due to physiological and intra-oral causes, which make up 90 percent of cases with the remaining 10 percent of cases being due to extra-oral causes (Hughes & McNab, 2008; van den Broek et al., 2007).

Intra-oral halitosis is most commonly referred to as oral malodour and can originate from tongue coating, periodontal pockets, deep carious lesions, exposed necrotic tooth pulps, pericoronitis, mucosal ulcerations, healing(mucosal) wounds, impacted food or debris, imperfect dental restorations, unclean dentures, and/or factors causing decreased salivary flow rate (van den Broek et al., 2007). Oral malodour from intra-oral sources results from a microbial degradation of organic substrates found in saliva, crevicular fluid, desquamated cells and retained food debris, resulting in the production of volatile sulfur compounds (VSCs)(Tonzetich, 1977). There are many different VSCs, but concentrations of hydrogen sulfide (H_2S) and methyl mercaptan (CH_3SH) are the major contributors to oral malodour (Persson, Edlund, Claesson, & Carlsson, 1990). A small percentage of oral malodour can be linked to extra-oral sources such as, disturbances of the upper and lower respiratory tract, disorders of the gastrointestinal tract, some systemic diseases, metabolic disorders, medications, and carcinomas (van den Broek et al., 2007). Thus, oral malodour that does not resolve with mouth care and tongue brushing should be investigated further for such extra-oral sources.

1.5.1 Oral Malodour and Health Effects

Oral malodour within western society has obvious social implications for individuals who suffer from the condition (Howson, 2013). Furthermore malodour left untreated may lead to health challenges. The concentration of H₂S has been the primary focus with studies on toxic effects of VSCs (Yaegaki & Sanada, 1992). Hydrogen sulfide has been shown to induce apoptosis (programmed cell death) in human gingival fibroblast cells and cause DNA fragmentation (Yaegaki et al., 2008). Further research done by Calenic et al.,(2010) showed that H₂S increases levels of reactive oxygen species in mitochondria and collapses mitochondrial membrane potential, causing a chain reaction of intermediates leading to the activation of caspase-3, which leads to DNA damage and apoptosis (Calenic et al., 2010). A subsequent study found that H₂S at lower than what has been considered to be pathological levels, induced apoptosis in osteoblasts, the primary cells involved in bone formation (Aoyama, Calenic, Imai, Ii, & Yaegaki, 2012). High VSC concentration has been found to alter the permeability of gingival tissues, therefore facilitating the penetration of lipopolysaccharide into gingival epithelium and causing inflammatory responses (Calenic et al., 2010). The VSCs can also cause tissue damage by increasing the production of collagenase and prostaglandin E₂, which are major agents in the process of tissue destruction and inflammation (Calenic et al., 2010). Research done on CH₃SH showed that it contributes to periodontal disease, as well by causing collagen destruction through activating mononuclear cells to produce interleukin 1 (IL1), which acts on T-lymphocytes to start hypersensitivity reactions leading to tissue destruction (Ratkay, Waterfield, & Tonzetich, 1995). The sum of the above mentioned characteristics suggests that VSCs are harmful not only to social well-being, but also to the periodontium and oral health.

Oral malodour may also impact systemic health as studies have shown a link between periodontal disease, CH₃SH and aspiration pneumonia, which is also linked to poor oral hygiene and dysphagia (Awano et al., 2008; Marik & Kaplan, 2003; Pace & McCullough, 2010; Terpenning, 2005). Aspiration pneumonia occurs when regurgitated gastric contents or oropharyngeal secretions unintentionally end up in the trachea and make their way to the lungs. Aspiration pneumonia risk increases with colonization of gram-negative bacteria in the oropharynx, and periodontal pockets are a common source of anaerobic gram-negative bacteria that produce high levels of CH₃SH (Pace & McCullough, 2010; Persson et al., 1990). The result of these bacteria and microorganisms in the lungs is an often difficult to treat infection, especially among the elderly (Marik & Kaplan, 2003; Pace & McCullough, 2010). A study of 697 elderly participants evaluating the number of pneumonia-related deaths associated with periodontal disease showed that individuals with at least 10 periodontal pockets had an increased mortality rate that was 3.9 times higher, as compared to the other participants in the study (Awano et al., 2008).

1.6 Geriatric population and Malodour

It is apparent that western society places high importance on personal hygiene and grooming (Howson, 2013). Foul odour emanating from the body of an individual in old age is seen as a person in health decline and can limit meaningful interactions between patient and caregivers (Twigg, 2004). In LTC facilities social relations for residents are reported to be limited with few opportunities for meaningful interaction (Daly & Szebehely, 2012). Yet, daily social interaction is critical to the wellbeing of residents (Hebert, 2010). Exploring the impact of oral health and disease on body image and social interactions of institutionalized elders, reveals

that residents can be very concerned about noticeable body related issues, such as malodour, because of the risk of being avoided by other residents and staff (Donnelly et al., 2015).

Chronic oral malodour can affect approximately 20-50 percent of the population (Nalini, 2011). Awano et al., 2011 discovered that among 393 elderly residents between the ages of 60 to 65, a large percentage (66%) had some form of halitosis, suggesting that elders may be more prone to oral malodour. Oral malodour in the geriatric population has been primarily associated with tongue coating, periodontal pocket depths, gingival bleeding, systemic diseases and intake of medications (Samnieng, Ueno, Shinada, Zaitso, & Kawaguchi, 2012). Elders are also more prone to having lower salivary flow and as a result more viscous saliva, which can also contribute to oral malodour (Ueno, Takeuchi, Takehara, & Kawaguchi, 2014; Zussman, Yarin, & Nagler, 2007).

More elderly individuals are retaining their teeth into old age due to advances in oral health care, evidence supports that the number of remaining teeth and periodontal status in elders is related to VSC levels and periodontal disease progression (Makino, Yamaga, Yoshihara, Nohno, & Miyazaki, 2012; van der Putten, De Visschere, van der Maarel-Wierink, Vanobbergen, & Schols, 2013). Residents can suffer from malodour whether they have teeth or not, and it can be even exacerbated among denture wearers due to reduced salivary flow beneath the denture (Koshimune et al., 2003). Helping the edentate residents with tongue care and overnight removal of dentures, helps reduce oral malodour levels (Nalcaci & Baran, 2008).

1.6.1 Caregivers and Malodour

Generally western society views an aging body as declining and decaying reinforcing a negative picture of aging (Twigg, 2004). This is particularly true for caregivers when they

experience foul odours such as those experienced through incontinence (Twigg, 2004). Nurses working with elders in care facilities will do what they call “bed and body work” often requiring cleaning faeces, and out of obligation to their profession, they work fast and hold their breath while providing their care (Dongen, 2001). Sometimes however, what is found to be disgusting can also bring empathy due to its relation to vulnerability of the patient or resident (Dongen, 2001).

In addition to incontinence, some treatments also produce unpleasant odours from residents or patients. For example, dimethyl sulfoxide which is used in cancer treatment as a means of preserving and delivering stem cells effectively into the patient’s bone marrow, has the unfortunate side effect of producing a strong garlic- like odour from the patient’s mouth (Walker, Roethke, & Martin, 1994). Nurses caring for these patients have been found to use various avoidance techniques such as keeping their distance from the patient’s mouth and breath, spending as little time as possible in the patient’s room and sometimes avoiding the patients’ room altogether (Prior, Mitchell, Nebauer, & Smith, 2000).

Odours from the mouth are particularly troublesome for caregivers. Mouth care is also often associated with odour and nursing staff in palliative care units have described this aspect of their care as disgusting, and performed care out of obligation not due to a caring attitude (Croyere, Belloir, Chantier., & McEvan, 2012). Similarly, RCAs have revealed that providing mouth care is a particularly repulsive task to perform and would rather clean up after bowel movements or attend to urinary incontinence accidents than brush a resident’s teeth (Dharamsi et al., 2009). However, in contrast, one study has found that the most common indicator and greatest motivation for providing oral care was resident oral malodour because nursing staff felt it affected the resident’s social acceptability and self-esteem (Yoon & Steele, 2012). The nursing

staff in this particular study felt that providing oral care was an important aspect of their daily duties (Yoon & Steele, 2012).

Residents in LTC who are dependent on their caregivers for daily mouth care often experience poor oral hygiene and poor oral health, both of which can contribute to the development of oral malodour. Although, residents have expressed concern over how they might be perceived and treated due to oral malodour (Donnelly et al., 2015), it is unclear at this time if such concerns are valid, suggesting a need to better understand how residential care aides in LTC facilities are impacted from resident oral malodours. Studies done on oral malodour have looked at aspects such as sources, measurement techniques, management strategies and how malodour impacts the individual suffering from it (Hughes & McNab, 2008; Yaegaki et al., 2012). However, little is known about how oral malodour may impact caregivers, and how this influences their interactions with individuals they care for.

1.7 Research Objective

Extant research surrounding perceptions of oral malodour have mostly involved surveys, which provide a shallow account of the impact (Locker & Allen, 2007; Maida, Marcus, Spolsky, Wang, & Liu, 2013). Research involving surveys has provided valuable knowledge in terms of frequencies of oral problems and related psychosocial issues but failed to provide the broader meaning and significance behind these frequencies (Locker & Allen, 2007). Thus, a deeper understanding of the phenomenon of oral malodour is needed to further our knowledge in this area of research to provide insight for possible future approaches to improving caregiver intervention. This issue can be investigated by identifying RCAs that have experienced oral malodour from residents, and evaluating their common shared experiences with working with

such residents. Furthermore, a theory or a framework is required to conduct the investigation, one that will allow me to bring my own views and experiences, and combine them with the views of the study participants to construct meaning, and reality of the investigation. Thus, an interpretive framework of social constructivism is utilized, as it relies on the participants views, but the meaning of the views are negotiated socially and historically (Creswell, 2013). Social constructivism recognizes that the researcher's interpretation of what he finds, is shaped by his own experiences and background (Creswell, 2013). Therefore, this study will investigate using a qualitative approach and a social constructivism interpretive framework the question: *What experiences do residential care aides (RCAs) have with individuals living with oral malodour in a LTC facility?*

Chapter 2: Methods

2.1 Research Approach

I used an interpretive qualitative research approach to investigating RCA experiences with resident oral malodour. This research approach was the most appropriate for this study as a deeper understanding of the interaction of RCAs with the residents who had oral malodour was required. Therefore, this study attempted to capture and describe the experiences that RCAs had when interacting with residents having oral malodour issues, what contributed to these experiences, and how it affected the RCAs interaction with the residents.

This study was conducted utilizing a social constructivist worldview, in which multiple realities are constructed looking at the lived experiences of others (Creswell, 2013). The goal of this research was to rely as much as possible on the views of RCAs when dealing with residents who have oral malodour. Yet, my own experiences are also used to analyze and interpret the information provided by the RCAs. The framework of social constructivism allows reality to be co-constructed between the researcher and the participant and shaped by their individual experiences (Creswell, 2013). This was accomplished by sharing my own experiences during the interview process with participants, as well as analysing the data using my own personal background and experiences.

2.2 Facility Recruitment

I recruited participants from one LTC facility located in Vancouver, British Columbia. The facility was chosen because it supported and participated actively in research done by the Faculty of Dentistry. This aided in recruitment of participants due to the strong relationships that

had already been forged with administration and staff. This facility was also selected for the study as oral malodour prevalence data was available from a concurrent study.

2.2.1 Participant Recruitment

Purposeful sampling, the process where the researcher selects individuals for a study because they can provide specific information about the central phenomenon being investigated was utilized in this study (Creswell, 2013). I sought out RCAs who were currently responsible for providing care to residents at a LTC facility who have oral malodour. I also recruited RCAs that provided care to residents who had been identified as having measurable oral malodour from a concurrent study. The residents were identified from collected data on H₂S and CH₃SH measurements done assessing oral malodour prevalence in the LTC facility. The participants recruited had a minimum of one year of work experience to ensure that they had sufficient time to experience the central phenomenon, and were able to provide valuable insight. Upon receiving ethics approval from the Behavioural Research Ethics Board (BREB) at the University of British Columbia as well as permission from the Director of Care at the LTC facility, a recruitment session was arranged. The recruitment session was scheduled at the shift-change time for facility staff. Flyers indicating date, time and location of session were posted a week prior on the door of the main floor where RCAs usually visit first when entering the facility to check in for their shift. Also, notices were posted on each floor so that RCAs could be aware of the upcoming session. Refreshments and snacks were provided at the meeting for all RCAs attending. In total 10 RCAs attended the session, they were informed of the study, and each given a consent form (Appendix A) and a sample of the personal logs (Appendix B), which they would be required to complete as a participant in the study. Confidentiality was assured to the potential participants

along with the option to withdraw from the study at their discretion. Six of the RCAs offered to participate at the meeting and four requested additional time to look through the consent form and decide if they would like to commit to the study. Using malodour data gathered on residents, a reverse selection was done as well; RCAs' who were assigned to care for specific residents with measurable oral malodour were approached to participate in the study. Upon follow-up, one of the RCAs that had originally signed the consent form did not return any calls and was dismissed from the study; however, an additional two joined the study. In total seven RCAs participated in the study, six females and one male; this ratio is indicative of the gender distribution of RCAs at the LTC facility.

Table 1: Participant Profile

Nationality of Birth	Age Range	Years Worked
Chinese	40-50	8
Chinese	30-40	3
European	60-70	25
Fijian	40-50	20
Filipino	40-50	10
Filipino	50-60	25
Fijian	30-40	5

2.3 Observations

One week after the recruitment session, each participant was contacted and briefed on the study again, and arrangements were made to attend the facility to observe them in their daily activities and interactions with the residents. Observations were completed at various times during the day when care was being provided to residents. I scheduled observations in this manner due to changes in workload for participants and changes in types of care provided to residents. Morning care is usually very busy for the participants, but also a time when odour is the strongest from residents as they are waking up due to overnight incontinence pads needing to be changed, and oral malodour experienced with morning breath. Morning breath refers to malodorous breath experienced upon awakening from individuals, due to proliferation of bacteria releasing excessive amounts of VSCs and a reduced saliva flow overnight (Suarez, Furne, Springfield, & Levitt, 2000; Tonzetich & Ng, 1976). Approximately 15 hours were spent observing the seven participants. Prior to the observations I informed all of the participants that I was simply present to observe and learn of their daily activities and to carry on with their duties as they usually would on any regular day. When a participant was being observed providing care to a resident I introduced myself, or was introduced by the participant to the resident, and asked for permission to observe. I always left the room if the resident had to be undressed to maintain dignity and respect for the resident. Each observation sessions lasted two to three hours, where one or two of the participants were shadowed providing care to various residents. I noticed and made field notes of particular odours that were coming from the rooms of residents, and how the participants dealt with these odours. Furthermore, I documented body language and behaviours of participants during their care with a particular focus on the provision of mouth care.

2.4 Personal Logs

Personal logs (Appendix B) were provided to each participant on the day of their observation. Each participant was asked to complete 10 personal logs over two work weeks. The purpose of the personal logs was to give participants the ability to document their thoughts and feelings regarding odour at the end of their shifts. This was important because it allowed them to reflect upon their day and recall events from their shift while they were still fresh in their mind. The participants were also able to complete these logs without myself being present to influence their responses. Upon completion of their 10 logs, I returned to the facility to collect them, so that information contained in the logs could aid in the development of additional questions for the interview guide (Appendix C). This allowed me to ask specific questions that could provide further clarification on individual and group comments contained in the logs. These questions allowed me to gain a deeper understanding and meaning of their log statements.

2.5 Interviews

Interviews were conducted at the participant's convenience, six participants chose their dinner or lunch break to meet with me and one participant chose to meet at her home on her day off from work. Prior to the start of each interview, I encouraged each participant to focus on sharing their experiences, and I assured them of complete confidentiality with their responses. I utilized an interview guide (Appendix C) that was developed from existing literature, the participant's personal logs and my own observations. I began each interview with general questions about their work life and proceeded onto questions about oral malodour. Interviews lasted generally between 30 to 45 minutes. Five of the seven participants had English as their second language, so as they spoke they tended to use several hand gestures to convey their

message. I documented these gestures in my field notes during and following each interview so they could be included in the narrative transcript in order to capture the meaning of participant statements in their entirety. Following the interview process each participant was given an honorarium for their participation in the study. I informed the participants that I would review my findings and analysis with them at a later date and may need further clarification on statements they had made. I contacted all of the participants and reviewed my analysis with them as well as read each quote used from their transcript back to them. Three of the participants were asked for further clarification on statements they had made in their interview.

2.6 Analysis

Each recording was transcribed verbatim following the interview process. Listening to the recordings over and over helped me become very familiar with the data, to start the coding process, and identify emerging themes. I transcribed four interviews myself and had three transcribed professionally. I reviewed the transcripts that were professionally completed, with the audio recording to confirm the accuracy of the professional transcription.

N-Vivo® software was utilized for data management, and to aid in the analysis. Participant personal logs were reviewed and analysed for significant statements relating to odour that was put into a chart format (Appendix D) along with the average number of residents seen and presence of odour. All observations, personal log chart and interview transcripts were imported into N-Vivo® and utilized in the analysis.

I began the analysis by transcribing verbatim each interview then reading and re-reading each transcript to become familiar with the content, while staying aware of recurring statements made by the participants as well as relevant statements to my topic of study. Thereafter, I assigned codes to excerpts of the narratives, my observations, and the comments made by

participants in their personal logs. Coding is the process of aggregating text data into small categories of information, seeking evidence for the code from different data sources used in the study, and then assigning a label to the code (Creswell, 2013). Upon completion of this phase of the analysis I had 54 codes that I then started to group together to form emerging themes. I did this through visually mapping the codes and looking at inter-relationships.

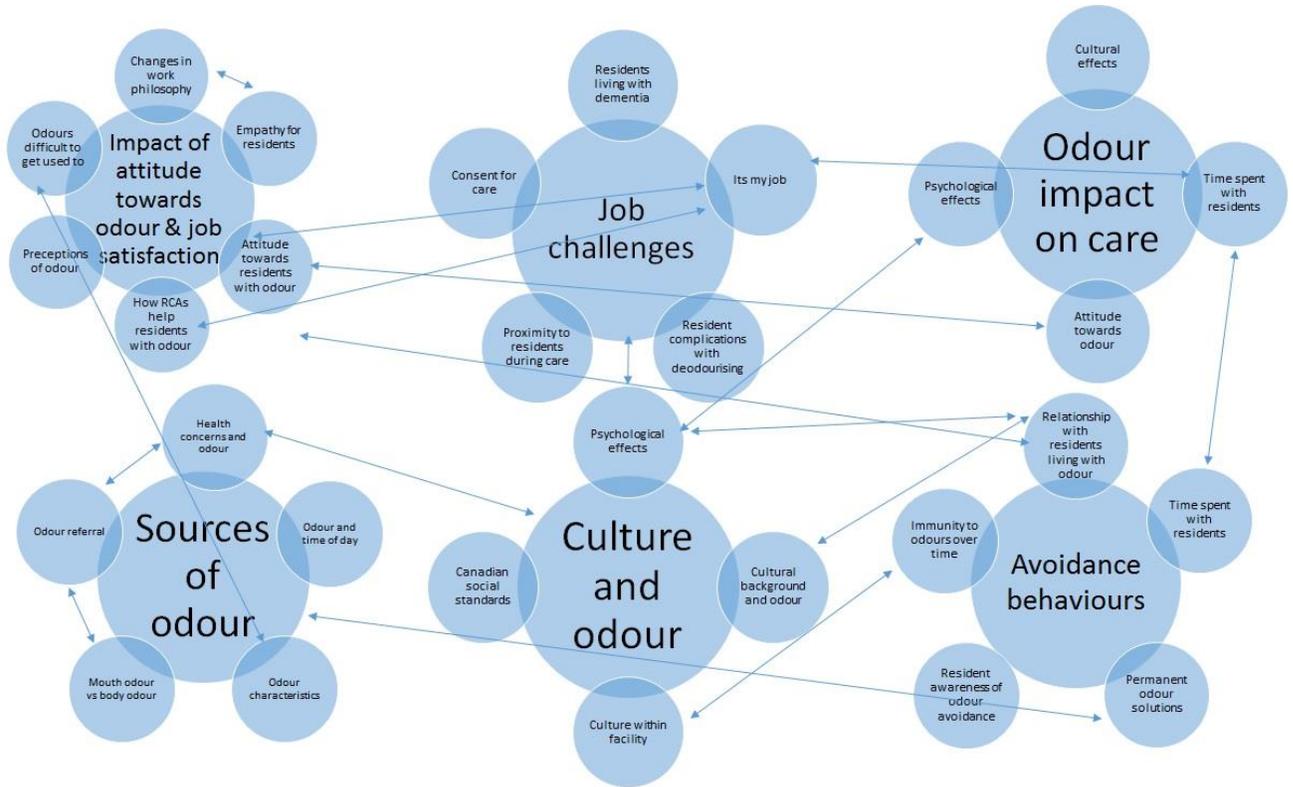


Figure 1 .Thematic Map: Visual map of grouping codes to form larger overarching themes.

The codes and themes tend to mirror my interview guide to some extent due to the background literature that I used to develop pertinent questions. I added to my interview guide as information was revealed in participants’ personal logs that required further clarification or when a participant mentioned new information during the interview process that required further investigation to delve deeper into the topic. Some of the questions that were added to the guide were: What does odour from a resident smell like to you? This question helped determine how

the participant perceived mouth odour. Analogies such as “sour curdled milk”, and the “smell of garbage” were used, which gave me a sense of how offensive they found the odour to be. The other question that I incorporated was; “Did you do anything different, from what you normally do, when I was observing you working?” This question was to insure that I was not observing a Hawthorne effect with the participants, especially during mouth care provision. Lastly, I added the question; “If they thought that the residents can sense what they are doing, when employing odour avoidance behaviours?” This question helped me determine how much the participant was concerned with how the resident felt and how obvious they believed their actions to be. As I was coding the data I could readily observe codes that could be grouped together and how the group of codes would give rise to a theme. Visual models were used to help see the relationship between codes and themes as shown in Figure 1. While grouping the codes to develop themes, several questions emerged that needed further clarification. Therefore I went back to the participants to investigate the true meaning of a statement they made, or the reasoning behind a statement they had made. This follow-up or “member checking” also gave the participants the opportunity to review a summary of my analysis and to provide additional thoughts. The participants generally agreed with my analysis and summary, and one provided some additional information that helped further my analysis.

To insure that my coding analysis was not biased, I had two individuals with no dental background also code the first interview transcript. The first individual is a 45 year old female in the process of completing her Master of Arts in Education, and held a Bachelor of Arts degree with a major in Anthropology and a minor in Visual arts. She also was working part time teaching English to new immigrants. The second individual was a 30 year old female, completing her Masters of Art in Educational Technology and Learning Design. The interview

transcript was coded separately by myself and the two others and then compared to look for similarities and differences. Overall the codes seen in the transcripts were quite similar with only slight differences. The first individual used a very simple coding scheme and had four codes, while the second individual had 10 codes. I had 24 codes and I discovered that by looking for patterns with each individual's coded transcript and my own, that the individual with only four codes had much broader codes that my codes fit into when looking at the same passage. However, my codes were more specifically aligned with the second coder who had more detailed coding. For example coding this particular passage

C: How do you personally react to it? In terms of, when you encounter the odours, and how does it make you feel personally?

W: Of course I don't like it (laughs)

C: (laughs)

W: You smell it and, oh you want to run away.

The first coder coded this section as “background information of participant relating to behaviour and perspective” the second coder coded this section as “don't like smell/wanting to avoid person/speed up treatment.” I coded this section as “impact of attitude towards odour and job satisfaction”. Essentially, even though the wording for our codes is different; we are all wanting to code the same message that odour is viewed negatively and affects the RCAs behaviour negatively. However, I have an additional component of job satisfaction which I was able to gather and further analyze from my interviews and observations.

There were passages that only one coder coded and the other either over-looked or chose not to code. Depending on the importance of the information, I chose to compare my coding with the only coder that did code that same passage. Ultimately, I believe I had more codes because I

immersed myself more into the data. The secondary coders may have given the transcript one or maybe two reads, so they had fewer codes than I did. However, observing our coding methods, there were definitely similarities and just a few differences in how we described our codes.

2.7 Reflexivity

Prior to starting the analysis it was important to understand my personal experience with the phenomenon. This allowed me to recognize my personal view of oral malodour in residential long-term care, my past experiences with RCAs and institutionalized elders as well as my personal and professional background. Each of these personal experiences has the potential to influence how I conducted, analyzed and interpreted the data in this study. My goal was to be able to look at the data without personal bias by setting aside my experiences in order to take a fresh perspective towards the phenomenon being studied (Creswell, 2013).

I am a middle aged male, of east-Indian decent and an immigrant to Canada. I had spent the early part of my childhood to teenage years in the city of Nairobi in Kenya, Africa. My personal experiences living in different cultures with regards to oral malodour were that, the issue had less significance while I was living in Africa. Only when I moved to Canada did I notice the emphasis on having fresh breath. I also saw many companies in Canada marketing products such as chewing gums, dentifrices and mouth rinses, using elimination of oral malodour as a primary marketing benefit.

Due to the investigation that I was undertaking in relation to oral malodour, it was also important for me to constantly reflect on how my profession as a dental hygienist for eight years would influence my approach to the research and its analysis. Practicing dental hygiene provided me a vast amount of experience dealing with the oral health of individuals and I place a high value on good oral hygiene. In this role, I have experienced oral malodour several times from

clients and helped them with management strategies along with the treatment required. During my data collection and analysis it was necessary to be cognizant of my potential for placing too much emphasis on my professional experience with oral malodour and its causes, and instead focus on how the participants understood and dealt with it.

In my career I had several exposures to LTC and working with elderly residents in these facilities. Overall, the residents in LTC that I observed had poor oral hygiene, and sometimes oral malodour. I also noted that some residents were uncooperative when oral care was being delivered to them. I seldom saw RCAs providing oral care to the residents which troubled me. Also, I noted varying degrees of dementia with the elderly residents and their inability to take instruction in many instances. These experiences collectively had the potential for me to view this population and their caregivers in a less than positive light, and needed to be taken into consideration throughout this research process.

Using a social constructivist framework allowed me to continue to use my knowledge and experiences in conducting this study; however I did also attempt to put aside my professional background as a dental hygienist, and view myself primarily as a researcher trying to capture the participant's experiences. Emphasis during the analysis was on looking subjectively at participant data and not overpowering the analysis with my own personal bias. The activity of having two other individuals with no dental background code one transcript helped to reassure me that I was avoiding personal bias in my analysis.

2.7.1 Researcher's Social Location to RCAs

RCA education can vary, but is typically completed in six to nine months at a community college and requires basic English competency, and a grade 10 level of education for admission.

I have a Bachelor of Science degree, as well as a Diploma in Dental Hygiene that required a minimum of first year college or university science-based courses. At the time of the study I was pursuing a Masters' degree which the participants were aware of. The participant RCAs looked to me at certain times for confirmation when providing mouth care which I suspected was due to my dental knowledge. I explained to the participants that I was at the facility just as an observer, and not there to critique their mouth care technique. Additionally, it appeared at times when answering interview questions that the participants sometimes felt a lack of confidence in their answers and looked to me for confirmation. The participants were reassured there was no right or wrong answer, and that I was simply there to gather their experience of working with individuals who had oral malodour. I am also a male and the majority of study participants were female. This might have affected how the participants interacted with me, especially if they had been socialized to look at men in a superior position in their ethnic upbringing.

2.8 Rigor

There were several procedures adopted to establish rigor for this study. To gather candid responses from participants of this study I ensured confidentiality of participant responses and also made participants aware that they had the opportunity to opt-out of the study at any given point. The research design had an observational component to ensure that statements made by participants were reflected by their actions. During and after the data analysis "member checks" were done with the participants. Member checking refers to the participants being given an opportunity to verify statements made in the analysis to confirm, whether what is recorded is actually what the participant meant to say (Shenton, 2004). In this study the participants were

given the opportunity to provide further clarification on statements made and to verify accuracy of my analysis.

The data I independently coded with two other individuals, allowed for peer scrutiny and inter-coder reliability. Also I provided a description of my personal beliefs and assumptions with regards to the phenomenon being studied. This adds to the confirmability of this study as steps are being taken to ensure that the study's findings are experiences and ideas of the participants, and not over powered by the researcher's preferences (Shenton, 2004).

Utilizing three different sources of data allowed the results to be confirmed by all three sources and added to the strength of this study. This was accomplished by verifying findings across the different sources, and to confirm that a statement made by a participant during the interview was consistent with what was documented in their personal log, and further supported by my observational notes.

Chapter 3: Results

The analysis of the interviews, personal logs and my observations resulted in 54 inter-related codes that together gave rise to five major overarching themes: challenges of caregiving, knowledge of oral malodour management, attitudes and behaviours, attitudes and job satisfaction and culture and odour.

3.1 Challenges of Caregiving

The participants discussed numerous challenges that they face on a daily basis while working with residents. The most significant of challenge that each identified was the lack of time they have in providing care to the residents. During my observation time, I noticed on numerous occasions participants appearing to work quite quickly to get residents ready in the morning and out of the room, in order to get them to breakfast on time. One of the participants explained, “*morning is very rushed, you have an hour and a half to get [residents] up, out, down [for breakfast].*” (Participant 2) Time constraints were not just experienced by those participants who were responsible for day-to-day activities of the residents, but were also a challenge for those who had more specific job descriptions. Participant 3 who was mainly in charge of bathing residents commented:

[I bathe residents] every half hour, and that's getting them ready, giving them oral care, taking them to the shower, giving them a shower, taking them out and drying them, and dressing them, and then cleaning up the room, so it's very, very, very tight. I think time is really important. You can't really do a good job if you're under

these time constraints all the time. And I can imagine, the care aide's on the floor, they've got like 10 or 15 residents in the morning before breakfast. You try to do a good job. A job that you'd be proud of, I don't think you can do it...I think one of the areas that gets missed is the personal care, like under-arm deodorant, washing, mouth care, [and] hair.

In addition to time constraints, it was apparent through both the interviews and my observations, that participants believed that RCA levels were insufficient, which made it difficult to do a good job caring for the residents. Participant 4 lamented:

Sometimes, we are short of staff. Within one-and-a-half-hours, we have 15 total elders needing to be up and ready. Sometimes, I look back, I wonder how I did it. It's not an easy task we're doing. Some places, they have four, five care aides. In our lodge it's not enough. We've always been saying [that], but then [the administration] always tell us it's a budget issue.

To compound issues further, uncooperative, aggressive or combative residents make caregiving even more difficult for the participants. Given the time pressures, it was not surprising to hear that when a resident does not cooperate they tend to be left alone and skipped, so they can move on to the next resident. However, at some point the residents need care and participant 4 described how she coped with difficult behaviour: *“one elder punches and kicks when giving personal care and chews on the toothbrush. I try not to get close to the strong side of the elder to avoid being punched and kicked as much as possible. There is also a lot of verbal aggression as well.”* Participant 5 added that with regard to providing mouth care, *“sometimes [residents] spit at you or bite the toothbrush so what else can you do? You will do more damage, so I stop.”* The

participants all talked at length about these types of aggressive altercations, and how they mostly happen with residents who have dementia. Participant 6 graphically described a personal experience with a resident with dementia:

It's hard to deal with her... at times when you brush her teeth she holds[the toothbrush], she doesn't know what to do with it, so you start in there and what does she do; screams or slaps you or hits you. So if we keep pushing, she will get more aggressive so what can we do? Just leave it?...Even the mouth wash we can't use[because]... one day she swallowed it.

This kind of behaviour by a resident combined with their inability to follow directions discourages the provision of care. As participant 2 shared:

The problem is not just brushing their teeth but how do we actually care for mouth odour and the residents teeth if they aren't helping? If they won't open their mouth to actually clean them, we have a difficulty doing that. We had a resident that we'd brush her teeth, and then she would hold everything in her mouth, so how do we get her to spit out the toothpaste? If you give her mouthwash, she's going to drink it. So then that's when she has really bad mouth odour, because honestly some people get frustrated they say, 'I tried once, that's it' and then they would just let her be.

Participant 5 shared a similar frustration and talked about how it reminded her of a former colleagues comment:

I have a friend that worked here, she is retired now, she would say I would rather lose all my teeth then otherwise if I [get institutionalized] like [these residents] 'who can clean my teeth?' (laughing) That's how she looks at it.

I also was able to observe this phenomenon at the facility while a participant was working with a resident who had dementia and limited mobility. Participant 7 said “*she bites and swallows everything*” so she simply wiped the front teeth with a damp cloth, leaving the residents back teeth untouched and the front teeth poorly cleaned.

Some residents refuse care but might not be cognitively aware to understand what they are saying no to. When questioning Participant 7 about this issue she shared:

If a resident refuses care, that's when we do get the odour and we know it's usually the same residents repeatedly, because they would be the agitated ones refusing care, and then we kind of expect it, and we know that if the odour is there with that person we know why.

Participant 7 in describing how residents with dementia are dealt with remarked:

You got to respect [their decision] even though they have dementia. We try them in a little while because their mind keeps changing so maybe they are difficult right now but 5 or 10 minutes later they might agree...if I come back after half-an-hour and they are in a good mood or much better mood ...it works! So we just have to remember who refused it and when we get time [we go back and] we do it.

There are some residents who always decline mouth care and those residents appear to develop a reputation amongst the staff as the ones that they can skip, so these residents are no longer asked. As participant 7 said, “*sometimes they just say they don't want to do [mouth care]*”.

Even though you want to do mouth care they refuse it. So it's good to hear but I have had it so many times, we know who will do it and who will not do it." During my observation I saw participants and other RCAs asking residents if they had brushed their teeth, and if the resident said yes no further follow-up was done to see if they actually had brushed their teeth, or how adequately they had done so.

3.2 Knowledge of Oral Malodour Management

The majority of participants that I interviewed did not understand oral malodour, all of its sources, and what they could do to eliminate it. During the interviews, it was apparent that none of the participants had the same answer; some believed that oral malodour was a stomach issue; others believed it was due to the decay of teeth, and some didn't have an answer. Participant 2 commented: *"We do give [the resident] mouth wash, but maybe its decay in her teeth or something [that causes oral malodour]."* Participant 6 was unsure about where mouth odour came from: *"we give mouth care, good mouth care and mouthwash but when she breaths you could smell [odour] and wonder 'where is that coming from?' I don't know from the inside or what?"* Participant 1 seemed very confident about where odour comes from and how to manage it:

I noticed a resident had mouth odour for a few days, even after brushing the teeth and using a mouth rinse. I asked the resident if she had a problem, and she said she had pain in a tooth. So I referred her to the dentist, [and it] turned out to be a cavity.

Some RCAs believed that:

It's also what [residents] eat too. If they're people that love garlic, of course

they're going to smell like garlic, and medication too, I think it has an effect with their [stomach]. Sometimes if some residents have gastric problems and they're always burping, the gas is coming out, so [odour] is going to be coming out from their mouth. (Participant 2)

Quite a few of the participants felt that malodour came from the stomach. This seemed to be related to their experience of oral malodour not always being resolved with mouth care, although how effective this mouth care was and if it was actually provided is unknown. Participant 6 commented: *“You know you clean the teeth [but I am not sure if odour] comes from the inside or what? (waving her hand from stomach up to the mouth) Like when they breathe out its [bothersome].”* Another participant 4 commented: *“yeah sometimes I think somebody have that [odour], I think some of them have it from inside (referring to stomach area).”* Participant 1 said, *“I think, what you eat [greatly] affects your smell. The stronger the [spice] the more you smell.”* This belief was also supported by participant 3, who said, *“If they have supper, and its spicy food, or a certain kind of food that they don't tolerate well. They sleep all night, and they're breathing through their mouth, so of course in the morning their breath is going to be strong.”* Participant 3 was unsure about sources of malodour and mentioned a few different possible sources: *“Poor oral hygiene, medication, food, particularly in the morning, if you've slept all night, your stomach, that kind of thing [causes oral malodour].”* As a result of their beliefs on sources of odour usually the referral to manage the oral malodour goes to the nurse or physician. Participant 4 commented: *“Usually, we report to the nurse in charge on that day, and if the [odour] doesn't go away, like brushing doesn't help, then they put them on the doctor's list too; to check up why the odour is so strong?”*

The participants had difficulty describing what mouth odour smells like to them, and many could not draw meaningful comparisons to something they had previously experienced. Participant 6 commented: *“I know it’s an odd smell...like something rotten...not really rotten food...It’s hard to compare it to anything.”* This was surprising to me since she has worked at the facility for 25 years and had experienced odour from residents many times during her career. Some participants used comparisons to food to describe breath odours. Participant 2 commented, *“For one resident, it’s very sort of sour. Smelling like milk that’s maybe soured”*. Whereas participant 4 described it as *“very strong, sometimes it’s like something rotten, it’s in the air, like really rotten, like an egg, or garbage.”* When I asked the participants what bothered them more mouth odour or body odour, the majority of them said mouth odour was more bothersome. Participant 4 commented: *“I think that it’s probably stronger, the mouth odour compared to the body, because like you said you’re up close and you’re right there.”* While Participant 5 had a problem with both sources of odour, but stated: *“I still have to clean [the mouth] up because of the odour, the [bottom] side is better than odour coming from [the mouth]it smells...really I find it repulsive, but what can you do?...just put on a mask and go (laughing)”*. Participant 7 believed that it depends on what the resident is doing: *“if the [resident] talks less its body odour that bothers me, but if the [resident] talks more, then their mouth is [worse], so that’s the difference.”* The fact that residents talking bothered the participants has implications on the type of interaction they have with residents who have odorous breath. It is already known that residents rely on such relationships for a feeling of self-worth, and if they are not having that quality time with their caregivers it could lead them into social isolation and depression. Participants’ finding oral malodour bothersome more so than toileting was also confirmed during my observations. A large portion of the work RCAs do

involves changing incontinence pads (adult diapers) on the residents, and the participants seem more comfortable performing this task and the related cleaning of residents compared to providing mouth care. Odour is usually the worst in the mornings and many participants talked about the difficulty in dealing with resident odours in the morning. Participant 2 commented: *“Oh yeah [chuckles]. Usually in the morning we face [the odour] more, because during the nights they wet themselves, [so] the aroma grows a little.”* Participant 5 commented: *“you know it’s only the morning care that’s the worst part, but after you clean them and if you clean them good...it’s actually ok”*. She also talked about the state of the residents room with regards to odour in the morning, and said *“it’s only in the morning when you come and the windows are closed and you have that odour in the room, but after that when you bring them out they don’t always stay in the room and its different, its only in that room that they smell so bad.”* I also noticed an increase in odour levels in the mornings; I detected very strong odours from resident rooms that I could smell standing by the door of the room.

3.3 Attitudes and Behaviours

The participants have developed several techniques to deal with resident odours. These behaviours are mainly used to avoid the odour and usually result in what could be considered less than optimal care and social interaction. Participant 2 shared that she *“tries to get the job done as quickly as possible [laughter]”* when helping residents with their daily care. She further elaborated by saying *“[odour] is really bad, you try to hold your breathe a little. Then the best thing to do is whatever’s wet to get it out, tie it up or send it out of the room and continue doing [the care].”* Participant 4 described her difficulty with a resident who had strong oral malodour: *“this resident had such horrid breath it would be difficult to even enter the room.”* This statement made me think of the possibility that this particular resident might be much more

vulnerable than others as she is a quadriplegic, living with dementia and cannot speak, and if the RCAs chose to skip care on this resident, no one would really know. Also, as I was doing my observations I noticed that the participant and her teammate RCA were very fast when caring for this particular resident. Participant 4 describe how she *“used a mask to care for this resident”* to help with the oral malodour. Participant 2 shared more techniques of dealing with odour: *“that’s why I carry perfume [laughter], or scented creams. I put it on my shirt so if [the odour] is really bad, then I just take a whiff of my clothes.”* Participant 1 said *“if the resident has an [odour] problem sometimes we use the powder (laughing) to cover the smell. Powder works well to [mask] smell.”* Participant 4 logged in her journal that *“sometimes I use a mask to protect myself from inhaling the odour, [and] I open windows slightly.”* Opening windows was a very common odour avoidance technique that majority of the participants described and used. It does pose issues during the winter as a resident may find the cold breeze from the open window bothersome. An important aspect that I noticed is that the resident is never asked for permission by the participant before these odour avoidance activities are performed. So a resident may not want a window open, but the participant does it anyways for fresh air. Participant 1 shared a similar scenario:

One resident she always does her bowel movement in the morning... (Sigh) when I go inside the room I turn on the fan, [and] she always stops me! ‘No no no the fan is so loud, don’t turn it on.’ I say ‘no, I need the fresh air’ (laughing).

I also observed another participant providing care to a resident who had significant oral malodour and it was quite obvious that she was keeping her distance from resident. The participant informed me that sometimes she will give this particular resident orange juice

because she believes it “*freshens her breath*”. Similarly, some participants described their use of mouthwash to lessen the malodour:

What I usually do is I try to... I don't know if it's right but if there's mouthwash, I mix it with the water. Let [the residents] gargle it first, spit it out before I actually brush their teeth. That's just my trick. That's how I do it, because if you just give them water, it's nothing. So at least it sort of masks the smell a little [laughter].(Participant 2)

There are also resident rooms that participants describe as constantly odorous:

We do have a few rooms that [residents] have significant odour, so we have a company that comes in, and we have air fresheners that are battery operated [installed] . Because some residents, they have ileostomy or colostomy bags, it's like when they empty it, the whole room smells and it's something that goes out in the hallway. So that one does help a bit, but we don't have it in all rooms.
(Participant 2).

As a result of these avoidance behaviours the time spent with residents who have malodour is minimal. During my observations I saw participants give residents quick wipes with wet towels for their bath, and a quick wipe of their anterior teeth for mouth care.

Residents who are more cognitively aware do notice RCA odour avoidance behaviour. When I asked participants whether residents were aware of their odour avoidance behaviour, participant 1 shared: “*of course they know... if somebody has no mental problem of course they know*”. Participant 4 had a similar comment: “*I think those*

people who still are functioning mentally, yeah they know of course they know, but I don't [open windows] until they are out of the room." Participant 2 discussed how she manages the situation: *Some of [the residents] know. And then, some of them are like, 'Why did you turn on the fan?' and I say, 'because it's hot in here,' I wouldn't say, 'because you smell.'*

This allows the participant to both avoid the odour, and at the same time avoid directly confronting the resident regarding the odour. Managing odour like this, from the participant's perspective, causes no emotional harm to the resident.

3.4 Attitude and Job Satisfaction

Some participants measure their job satisfaction by the fact that, they can help a resident with odour elimination through the care they provide. Albeit, some participants find odour difficult to deal with and it negatively impacts their job satisfaction. When I asked if odour is bothersome? Participant 3 responded by saying *"my job is to eliminate [odour] by giving them a good bath experience so that they're clean and healthy, and I think maybe, I feel bad for them. I feel like I want to help them be clean. So it doesn't bother me at all."* Similarly, participant 7 commented:

When I come into my job, I come in with an open mind and I am expecting [odour] so I am not disappointed. When I walk into a room, I know I will come across something [with odour] it could be either mouth or body or it could be their pad or anything for example. Coming here the whole purpose is to take all that away because the person cannot do it, that is the main thing, and that's

why I am here. So basically if the person is all clean there is nothing for me to do, because the person already knows what he is doing.

While observing participant 7, however, my observations did not appear to match these comments. When working with a resident who had oral malodour, she kept her distance from the resident's mouth and gave the residents anterior teeth a quick wipe with a wet towel. The second resident she saw that night was edentulous, and received no mouth care at all. I was told he drinks mouthwash when they try to give it to him.

However, certain participants looked at odour as a nuisance, something that comes with the territory of working with residents. Participant 1 when asked about her feelings on odour commented: *"Of course I don't like it; you smell [odour] ooh! You want to run away."* When asked specifically about oral malodour from residents, she responded: *"my reaction is don't talk (laughs), don't open your mouth (laughs)."* Every time a resident with oral malodour talked to her, she would find the odour from their mouth unbearable. I was able to confirm this behaviour during my observations, as the participant continually asked the resident to stop talking while she was changing his clothes. Participant 4 noted in her personal logs that with regard to dealing with odour, *"I see it as my work, so I try not to take odour to personally affect me. My perceptions, well kind of unpleasant but bearable."*

The participants that had a more positive attitude toward odour elimination tended to put residents first and showed more empathy for them, while participants who had a more negative attitude tended to be more concerned about how odour affected them and made their job more difficult. When speaking with participant 7 about managing resident odours she commented: *"that's the reason we are here to make sure that they are clean, because obviously due to their age it's not that they refuse care, it's just because maybe they cannot even remember to take care*

of themselves.” This participant seemed to exhibit empathy for residents, but as mentioned before, her care did not correspond with this level of empathy, especially when performing mouth care. Certain participants appeared to want to help residents live healthier and cleaner lives such as participant 3 who talked about how oral malodour from residents could be managed better:

I think provide better oral care. I don't think often we're really consistent because we are always in a hurry. The staff have to get up so many residents in the morning and to give good oral care is not, to me, is not a priority. So I think if we were able to definitely have time to brush their teeth every day [that] would make a big difference.

The impact of a participant's attitude toward care can be physical in terms of rushed care, such as only using a cloth to wipe the front teeth of a resident, or emotional for the resident, for example by the participant asking the resident to not talk during care to avoid oral malodour. The participants with negative attitudes using odour avoidance behaviours that residents are aware of may also make the residents feel insecure about themselves. When participant 7 was asked about her interactions with residents who have oral malodour her response was:

I would say it is minimal yes, we don't want to interact too much, for example if there are residents who are alone and want to talk. When we have time we go talk and spend time with them, but if there is more odour and even after doing your care and you know there is more [odour] it is to an extent minimized.

3.5 Culture and Odour

Culturally, there did not appear to be much difference in how the participants perceived odour; they all to a certain degree found it to be bothersome. Even when comparing how odour was viewed culturally where they grew up, some talked about how they had more open space and didn't sense too much odour from others. They did however admit that odour and being odour free is much more of an expectation in Canada, versus where they were raised, whether it was the Philippines, Fiji or Hong Kong. Participant 6 shared: *"I think in Canada, if you have body odour people look at you [funny] (laughing) but over [in the Philippines] people don't care."* The manner in which participants dealt with the odour was different. The participant from Hong Kong was much more direct with her approach, she talked about addressing odour with a co-worker once: *"I hope you don't mind, because, I say your body has some smell. If you don't mind put some deodorant on. I know it's not very nice that I talk to you face-to-face, but it's better than people talking behind you. I have heard many people talking behind you"* This same participant also dealt directly with residents. I observed her while helping change the residents' clothes; she would ask the resident repeatedly to stop talking to her to prevent smelling his breath. Although, she did not tell the resident to stop talking because he had bad breath, she did confirm in her interview that oral malodour is the primary reason for asking the resident to stop talking.

In comparison, looking at one of the participants that was of Chinese decent as well, but lived in Canada since two years of age, she had an indirect approach to dealing with residents who had odour. When speaking about wearing a mask when working with residents, she commented:

For me, I try not to wear [a mask] often because it sort of alienates [residents] and makes them feel bad. Sometimes, a resident may wet themselves, and they feel bad already, so you don't want to make them feel worse, it's just like dehumanizing them too, because they're not sick it's just an accident.

Participant 4 who has a Fijian background similarly approached residents indirectly to address odour, when a resident needs to have their incontinent pad changed: *"I don't say 'you're dirty' or something like that. I say 'Oh, why not let's go and get changed'"*

There is also a culture within the facility of how RCAs conduct themselves. Some of the participants described how they have developed immunity to odours over time, so they are less bothered by them than those who have not done the job as long. Participant 2 commented: *"For us, I think maybe we get a little bit immune to certain odours, or... it's suppressed a lot."*

Participant 3 responded to my question about how bothersome odour is to him by saying, *"I have done [my job] for so long it doesn't bother me at all"*. Participant 4 talked about her difficulty with odour when she started working at the facility: *"at the beginning, it was really tough. I would puke and stuff like that, but now I'm used to it."*

The older more experienced participants tend to mentor their newer co-workers on how to deal with resident odours, and odour avoidance techniques among the other aspects of long-term care activities that they pass on. When asked about how she came up with the various odour avoidance techniques that she was using, Participant 2 shared: *"I guess its trial and error and plus other staff members—because I haven't been working as a care-aide that long. But then a lot of [care-aides]—by observing them and by them telling me, 'this works,' or whatever, you just pick up what works best for you too."*

Chapter 4: Discussion

This study set out to explore the experiences of RCAs with oral malodour among residents they care for in a LTC facility. There is a myriad of research surrounding oral malodour and how it affects individuals suffering from it, but little is known about how the malodour impacts caregivers. This gap in knowledge was the motivating reason to conduct a study with RCAs who are the primary caregivers to residents in LTC facilities.

To understand how oral malodour might impact RCAs and the care that they provide to residents it was important to look at other factors that might impact their care. It was discovered that the participant's working environment is highly stressful at times, especially during morning care when they have several residents to get up and ready for breakfast. Participants were under strict time constraints and complained about not having enough staff members to share their work load. This work environment did not represent the facilities care philosophy of following the Eden Alternative well, as residents were often not placed at the center of the participant's decision making process. Furthermore, the participants had uncooperative and combative residents, who were usually suffering from dementia that made their care provision more challenging.

Participant attitudes toward working with residents that were suffering from oral malodour were a key factor in determining the quality of care the resident received. The participants who showed more empathy to the residents viewed oral malodour from the resident as a sign for help, and prided themselves on their ability to help the resident become odour free. When these participants perceived they were successful at eliminating odour they had a more positive outlook on their work, and seemed to show higher satisfaction in their job. In contrast, the participants that viewed working with residents who have oral malodour as a negative and a

nuisance, seemed to employ multiple odour avoidance behaviours. These avoidance behaviours lead to substandard care such as doing the care as quickly as possible, or just wiping a resident's front teeth with a wet cloth instead of brushing all the teeth with a toothbrush. These behaviours contributed to strain on the resident and RCA interaction especially with residents who were cognitively aware of their surroundings. The participants with this attitude also seemed to be less satisfied with their job and often complained about dealing with oral malodour and mouth care as a repulsive part of their job. Unfortunately, due to a lack in knowledge of oral malodour management and its sources, and an apparent lack of belief in the efficacy of daily mouth care, they were unable to understand that the same oral malodour that is bothersome to them on a daily basis can be reduced or in the best case eliminated by providing appropriate mouth care and referrals for a dental evaluation. Doing this would end the continuous cycle of avoidance behaviours which may lead to emotional harm and social isolation of the resident. Some of the participants due to their cultural upbringing may not have realized the impact of avoidance behaviours, or how directly making the resident aware that he or she has oral malodour negatively impacts them. Nonetheless, it is important that RCA's understand how their own upbringing may be different from that of the resident who has grown up in Canada, with high western values on being clean and odour free.

One of the prominent themes that each of the participants wanted to discuss in this study was how their stressful environment with time constraints impacted their ability to care for the residents. I observed them working quickly especially in the morning as residents woke and needed to be cleaned, changed and readied for breakfast. Time constraints can leave residents feeling as though they are part of an assembly line where caregivers rush through their care only to head to the next resident. While I did not seek the resident's perception of their care in this

study, others have found that this rushed behaviour can be very apparent and quite disturbing to residents (Donnelly & MacEntee, 2015). The time constraints that participants discussed are not unique as numerous others have found similar complaints among nursing home staff (Daly & Szebehely, 2012; Knecht, Milone-Nuzzo, Kitko, Hupcey, & Dreachslin, 2015; Tuckett et al., 2009). Increased control over workload and the delivery of care are often suggested as strategies to improve job satisfaction, reduce caregiver burnout, and staff turnover which can translate in improved health outcomes for the residents (Testad et al., 2010; Wallin, Jakobsson, & Edberg, 2012). The participants that I spoke with seemed to echo these claims and believed that if given more time and control over their day-to-day activities the care that they were able to deliver might better meet the needs of the residents and make their job more enjoyable.

It should be noted that several times during interviews the participants indicated that they needed to care for 10-15 residents during the morning shift. However from the personal logs, none of the participants on any of the days saw 15 residents. The highest number of residents seen by a participant was 12. Furthermore, the overall average number of residents seen by all participants was eight residents per day, which compares well to industry standards of one RCA for 7 to 12 residents (Morgan, Semchuk, Stewart, & D'Arcy, 2002). Participants may have overstated their actual workload as a way of justifying their caregiving behaviour and to further emphasize their distain for their work load, or it could have been that on days other than those when the log was completed that they did in fact care for a larger number of residents. Nonetheless, it was apparent that the participants were not happy with the amount of care they needed to provide to residents and the limited amount of time that they had to do so.

To add to the existing stress of limited time to provide care, the issue was further compounded by aggressive and combative residents who make it difficult to provide care. The

participants showed little interest in providing mouth care to individuals that were combative while I was observing them. They would often comment that they avoid mouth care on such individuals to prevent harm to the resident. There appeared also to be a helpless attitude where the participants felt that the situations were beyond their control. This is similar to findings from other studies on oral health care delivery in LTC facilities in which combative and aggressive residents discourage caregivers from providing adequate mouth care, leaving staff frustrated and disengaged from the resident (de Mello, Ana Lucia, Schaefer Ferreira & Padilha, 2009; Philip, Rogers, Kruger, & Tennant, 2012). Working with combative residents also brings to light the issue of consent for care and the ethical challenges that the participants face when trying to balance their obligation to provide care with respect for the residents' decision to refuse such care. Furthermore, those residents with more severe levels of dementia don't always have the capacity to know what they are consenting to, so when they do refuse mouth care, the participants do not attempt to convince residents otherwise.

The LTC facility in this study promoted a person-centered model of care through the Eden Alternative philosophy. Although I observed that the facility's physical environment ascribed to components of the philosophy other aspects such as shared decision-making, placing the resident's preferences first and foremost, and a non-hierarchical workforce, were lacking. Participants often rushed care such as lifting residents out of their bed while they were still asleep in order to finish their job on time. This made it quite obvious that the resident was not at the center of their decision-making. This was also found by Ekman et al., 2011 who saw care staff abandon person-centered care when pressed for time to do the necessary work required of them. I did however observe the Activities Coordinator play games with the residents, and observed a very positive lengthy interaction between her and the residents that may be

attributable to the lack of tight schedules for activities or the visible nature of the interactions. Similarly, others who have investigated efficacy of person-centered care, found that person-centered care was demonstrated when activities are visible to the public, as opposed to the care carried out in bedrooms and bathrooms away from the public eye (Donnelly and MacEntee, 2015; Lopez 2013). I observed definite differences in the way that the study participants and some other staff interacted with the residents. Both the reported time challenges, and the disconnect between the different ways in which the staff appeared to have control over their work suggested a lack of support from administrative staff. This lack of support for a non-hierarchical decision-making process amongst the staff and residents could be influencing the participants' perceptions and my observations. Unfortunately, without support at all levels within the facility, implementation of a person-centered model of care is not successful (Koren, 2010; Ransom, 2000). It is important to note that during my study the Director of Care position was unoccupied and the facility was still in search of a prospective candidate, which may have impacted the way in which this philosophy was implemented and endorsed by other administrators.

The participants employed many different odour avoidance behaviours that would help them continue with their daily duties while minimizing discomfort from dealing with odour. Unfortunately, many of these odour avoidance techniques can be harmful to the resident either physically or emotionally and sometimes both. Similar types of odour avoidance behaviours have also been observed among nurses dealing with dimethyl sulfoxide odour from patients receiving cancer therapy (Prior et al., 2000). The nurses worked as fast as possible while holding their breath, avoided speaking directly to patients or avoided them completely. Similarly, Dongen (2001) found nurses hold their breath and work as fast as they can when providing "bed

and body work". Much of the literature that describes how caregiving is impacted by odour is in relation to body odours that are not associated with the mouth. However, the similarity in behaviours indicate that whether the odour is originating from the mouth or from another body part, coping and adapting is required by the caregivers.

How a caregiver copes and adapts is influenced by their knowledge of the source and how to manage the problem. For the participants, it appeared that the lack of knowledge of oral malodour management strategies resulted in them developing their own techniques, or those that were suggested by colleagues. One participant discussed the use of orange juice to help freshen a resident's breath who had particularly strong oral malodour. She used orange juice because the resident had severe dementia and would swallow mouth wash. Although the orange juice temporarily helped with the resident's breath odour, it ultimately could worsen her oral malodour as the sugars from the juice would help feed and multiply bacteria in the resident's mouth leading to potentially more malodour and an increased risk of caries and periodontitis. However, helping freshen the resident's breath did allow the participant to provide care for the resident and helped alleviate having to deal with strong oral malodour that she would normally have experienced from the resident. This allowed her to provide better quality of care versus rushing the residents care due to discomfort she might have experienced from the oral malodour.

Attitude towards working with residents with odour influenced the resident and participant interaction. The participants employed many different odour avoidance behaviours that they learned from their colleagues or developed on their own, which they did admit could be obvious to the residents especially if they were cognitively intact. Most participants admitted that they did not consult the residents when they used techniques, such as turning on fans or opening windows which they thought did cause some tension. Such tension has been shown to

cause residents' to be less cooperative with their care, making the caregivers work more difficult, which could subsequently affect their morale and job satisfaction (McGilton et al, 2012).

Positive caregiver approaches foster reciprocal resident behaviour that aids in improving their overall relationship and the psychological well-being of both parties (Brownie & Nancarrow, 2013; McGilton et al., 2012). I did find some participants who genuinely wanted to help residents be clean and odour free, and who viewed a pleasantly smelling resident as an indicator of a job well done, which lead to greater job satisfaction. Yet some of the participant's provided odour eliminating care out of an obligation to their job, and did so quite quickly by giving residents a quick wipe under the armpits for bathing, and a brush of a wet cloth across the front teeth for mouth care. Similar types of behaviours and attitudes have been observed with nurses in palliative care who also perform tasks such as mouth care which they describe as disgusting due to the odour, and care is done out of obligation, as opposed to a caring attitude (Croyere et al., 2012). Some RCAs don't like providing mouth care and see it as a repulsive task (Dharamsi et al., 2009). Whether this attitude is among nurses in palliative care or among RCAs in LTC, this lack of a caring attitude, coupled with obvious odour avoidance behaviours undoubtedly can affect the resident and caregiver interaction negatively. It was particularly interesting to see how certain participants were able to put their own potential discomfort of dealing with odour aside and provide the care necessary to residents, and yet other participants found it difficult to do so without employing an odour avoidance behaviour. Potentially some of these participants had become more accustomed to dealing with the odour and it didn't bother them to any great extent anymore. Alternatively, this could also be due to their upbringing, as certain cultures are raised with an emphasis on care for the elderly and doing so in a respectful manner as one participant suggested. There were some discrepancies seen in my results as one participants' interview

comments ascribed to person-centered care, however, such care was not seen while observing the participant during my observations. I might have observed this participant on a day that she might have not been performing at her best, or as others have suggested that staff often believe they are providing person-centered care but fail to demonstrate such care when working with residents (Ekman et al., 2011).

Residents in LTC often rely on their caregivers not only for help with the ADL's but also for friendship and companionship (Hebert, 2010). When time spent by caregivers with a resident is minimal and very task-oriented there is little potential for the residents to benefit psychologically from the interaction, and when they are asked as one participant described "not to talk", or avoided completely because the resident has mouth odour this has the potential to impact them emotionally. Residents rely greatly on their relationship with their caregivers for a sense of self-worth and when this relationship is poor it can lead to depression and anxiety (Haugan, 2013). Others have also found that when residents perceive that they have odours, they believe that they are negatively judged by caregivers, staff, visitors and other residents, and tend to seek solitude to preserve personal dignity and avoid social embarrassment (Donnelly et al., 2015).

The facility culture was a combination of the participant's personal beliefs, values, attitudes and behaviours, and those held as a group. Depending on where participants were raised, oral malodour social acceptability varied. However, the majority of the participants agreed that being odour free and having nice smelling breath was of higher social value in Canada. As a result of their own cultural values, participants tended to approach odour management either directly or indirectly when dealing with residents. Indirect approaches consisted of avoiding odour from the resident, but doing so covertly to avoid embarrassing the

resident or confronting them directly. This would sometimes mean that the participants would be untruthful when confronted by a resident on odour avoidance behaviour, for example turning on a fan to avoid odour, but telling the resident the fan was turned on due to the room being hot. Some participants had a more direct approach to dealing with residents with odour and would simply state they needed fresh air when asked why the fan was turned on. These participants would also ask residents to not talk to them to avoid oral malodour. To improve RCA and resident interaction, it is imperative for participants in this study to recognize the cultural experiences of residents they care for and that for some residents being odour free is a high social value; if this value is not realized by the participant then it may lead to strain in the interaction between residents and RCAs. A shared sense of responsibility and shared awareness of what improves residents' quality of life is what makes successful organizational culture for service delivery (Thorne, Kazanjian, & MacEntee, 2001). Furthermore, the younger participants relied on their older more senior coworkers for direction on how to best deal with situations involving body odour and oral malodour from residents. Unfortunately, due to an overall lack in knowledge of how to manage oral malodour, what was passed down to these younger less experienced participants were avoidance behaviours. Mentorship can be a positive experience, but when the mentor does not have adequate knowledge, this often leads to confusion and ambiguity for the mentee (Andrews & Wallis, 1999).

4.1 Limitations

The LTC facility where this study was conducted has weekly access to dental care and oral health education from dental hygienists, denturists and a dentist. These services may have reduced levels of oral malodour and for the purpose of this study, it might have been better to select a facility that had low access to dental care as the prevalence of oral malodour may have

been higher. Although I tried to mitigate this influence by selecting participants that provided care to residents with known oral malodour, it is still possible that the overall impact among my participants may have been less than those who work in a facility with less access to a dental professional. Nonetheless, the attitudes and behaviours described provide a good sense of how oral malodour can impact an RCA's day-to-day interactions with residents and some of the factors that further complicate care. Further research can be done in this area by conducting research at LTC facilities with low access to dental care.

There was only one male participant in my study, and was due to the low number of male RCAs at the facility. Even though, the ratio of female to male participants is reflected by the facility's RCA workforce, having additional male participants would have increased the likelihood of more diverse male RCA experiences.

The interview sessions were allotted 60 minutes, however most of the interviews sessions lasted on average 30 minutes. This was primarily due to the language skills of participants in which English was their second language, resulting in short concise answers. Also, the participants preferred to have their interview done during their lunch or dinner break as opposed to meeting after work hours. This arrangement might have led them to feel more rushed during the interview process as they were thinking about getting back to their work shift.

4.2 Implications

The experiences of the RCAs working with residents who have oral malodour has revealed that there is a definite gap in RCA education regarding oral malodour etiology and management. The majority of the participants were not aware how they could effectively manage this condition among the residents. Educating the RCAs early while they are still in training would be the best time to give them this information. This knowledge also needs to be provided

at the facility level to hopefully help senior staff understand adequate management strategies and prevent them from misguiding their junior colleagues. This gap in knowledge could be bridged by having dental professionals who have knowledge on oral malodour work with the RCAs inter-professionally to help them realize their role in odour management, when to refer and to whom. RCAs were quick to refer malodour issues to the medical doctor on staff, whereas this issue is more suitable for referral to a dental professional with knowledge of oral malodour. It was interesting that even though the participants were working in a facility with easy access to a dental professional for assistance with oral malodour, the participants did not indicate that they would consult these professionals when they were unable to resolve an odour problem. This indicates that education and management strategies need to be addressed among all staff within this facility. Ultimately, the goal is to help improve RCA and resident interactions by helping RCAs realize that they can possibly solve their own problem; the odour that they avoid from the resident can potentially be improved by providing adequate mouth care.

RCA workload and time constraints may be improved by helping administration personnel at the facility realize the impact the current RCA work environment has on quality of care for residents, as well as the level of stress it promotes for their employees. One possible solution could be to have a two tier breakfast schedule an early and a later seating, which would allow residents who are not early risers to sleep longer, and at the same time make RCA workload more manageable. This may also help with the overall morale of RCAs as it was apparent during my observations participants were bothered when they lifted residents with support hoists out of bed while they were still asleep, but did so in order to maintain their schedule. This could be an opportunity for future research to compare different LTC facility routines of care within North America to compare factors such as employee workload, job

satisfaction and quality of care provided. It has already been shown that when comparing care aide work environments between Swedish care aides and Canadian care aides, that the Swedish care aides were able to provide better care and have more job satisfaction, due to a lower care aide to resident ratio, than their Canadian counterparts (Daly & Szebehely, 2012).

Many of the facilities operate under care philosophies to improve the overall experience for residents. However, if RCAs do not have enough time and support, the philosophy of care is abandoned to accomplish tasks on time. Therefore, to implement these more person-centered philosophies in their facilities, administration and management need to endorse the culture-change model, promote it, as well as support the caregivers by giving them enough resources and time to do so.

Finally, information needs to be provided to both staff and management of how oral malodour is currently being dealt with, and how it may erode their goal of person-centered care and positive resident and caregiver relationships.

Chapter 5: Conclusion

Residents in LTC who are dependent on others for their care have a reasonable expectation to be treated with dignity and respect in a comfortable and caring environment that maintains their physical, psychological and social well-being. Oral malodour among residents was a difficult condition for most of the caregivers in this study to deal with, and appeared to impact both the quality and quantity of care they provided. Numerous factors such as lack of time, adequate staffing, combative residents, and organizational culture of the facility also influenced the care provided by participants. Knowledge and understanding of the sources of oral malodour and how to manage it, were found to be one of the factors that influenced the provision of care among the participants. Many of the participants, instead of focusing on eliminating oral malodour or consulting with a dental professional, chose to use odour avoidance behaviours or avoid the resident altogether.

A participant's attitude toward residents with oral malodour was a primary determining factor of the type of care a resident would receive. The participants that had a more positive approach took pride in helping residents be clean and odour free; they viewed odour elimination as an indicator of a job well done. This physical feedback of odour elimination was a rewarding experience for the participant and influenced their job satisfaction. Albeit, the participants that had a negative attitude towards odour begrudgingly performed their mouth care duties to a substandard level. This potentially contributed to a negative outlook on their job performance and satisfaction.

A caregiver's personal cultural beliefs and that of the organization influenced both the importance of oral malodour and how they managed it. When it came to culture within the facility, challenges were seen with senior more experienced participants promoting avoidance

behaviours and propagating them to junior, less experienced staff. Thus, it is imperative that caregivers are informed of how they are able to help in resolving the ongoing cycle of oral malodour that leads to avoidance, which continually compounds the issue over time. If this realization is accomplished it may help improve the caregiver and resident relationship and the overall well-being of both.

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Appendices

Appendix A Consent Form

UBC DENTISTRY



THE
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Consent Form

Project Title: Exploring experiences with oral malodour of residential care aides in long-term care.

Principal Investigator	Co-investigator
Dr. Leeann Donnelly, PhD, RDH Assistant Professor, Graduate Supervisor Faculty of Dentistry, UBC	Mr. Charn Dhami BSc., RDH Graduate Student Faculty of Dentistry, UBC

Why are we doing this study?

Residential care aides (RCAs) are the primary care givers to residents and have many interactions with them throughout the day. The purpose of this study is to explore and understand the daily interaction that you have in working with residents. The study focus is looking at your

experiences, thoughts and preceptions in working with individuals who may have breath odours.

How will the study take place?

If you choose to be part of the study, you will be asked to keep a journal of your daily interaction with residents who have breath odour for a period of two weeks. The journal writing will consist of a log of your interactions with these individuals and personal feelings about the breath odours you experience. During this two week period the co-investigator will be around on a few days to observe you working with the residents.

Once the two week period is over you will have an interview with the co-investigator, where he will ask questions specific to your experiences as a RCA working with residents that have breath odours. There may be some questions asked to gain further clarification on points made in your personal journal logs. The interview will be approximately 60 minutes in length, will be audio recorded and later written out word-for-word.

How will the study results be used?

The study results will be presented in a graduate thesis and may also be published in an academic journal. You will have a chance to look at both the written transcript of the interview and the analysis to ensure that your thoughts were accurately represented before submission of research article or thesis.

Could participating in this study be bad for you in any way?

We don't believe participating in this study could harm you in any way. Some of the questions asked may feel too personal or sensitive to you. If at anytime you do not feel comfortable answering a question you do not have to answer the question. You also have the choice of withdrawing from the study at any point without giving reason, with no negative impact to your employment.

How will this study benefit you?

The study may not have any immediate benefit to you, but the information you provide can be used to further understand the interactions that occur between care givers and residents specifically with breath odours. The information you provide can also lend to strategies for educating and improving care with regards to breath odours.

How will your privacy be maintained?

Your privacy will be respected at all times. The information you provide will be linked to an assigned code and only the principal and co-investigator will have access to the master list of names linking to codes. All the information you provide will be stored in a locked filing cabinet with only principal and co-investigator having access. None of the study participants will be identified by name in any final reports or publications.

Will you be paid for taking part in the study?

Yes, you will receive a 40 dollar honorarium for participating in the study. Which will be paid to you at the conclusion of the interview process.

Who can you contact if you have questions about the study?

If you have any questions or concerns regarding this study you can contact the principal investigator: Dr Leeann Donnelly or the co-investigator Mr. Charn Dhami, all contact information is listed at the top of the first page of this document.

Who can you contact if you have concerns or complaints about this study?

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Services at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Participant Consent and Signature

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on your employment.

- Your signature below indicates that you have received a copy of this consent form for your own records.

- Your signature indicates that you consent to participate in this study.

Participant Signature

Date

Printed Name of the Participant

Appendix B Personal Log

Personal Log:

How many residents did you care for today?

Did any of the residents have odour? (body or mouth?)

How did you deal with the odour during the care of the resident?

Is there anything else you would like to share from your experience today?

Appendix C Interview Guide

What experiences do residential care aides (RCAs) have with individuals living with oral malodour in a LTC facility?

▣ Perceptions of malodour? Impact on care?

- Tell me about your typical day working here at the lodge?
- Can you tell me about your job and what it entails?
- Have you ever been exposed to body odour from someone else? How did you react to it? How did it make you feel?
- How do general odours from residents make you feel? What about mouth odours?
- What is it like when you work with a resident who has body odour? Mouth odour?
- We know from studies with nurses, that certain medications can cause a patient to have breath odour that the nurses find disagreeable and can sometimes lead to the nurse spending less time with the patient or using different avoidance behaviours. What are your thoughts on this type of behaviour? Have you ever seen anything like this happen?

▣ Cultural implications?

- Did you grow up here in Canada? If not how were body odours perceived where you used to live?
- Were there particular odours that bothered you or others where you lived?

- What was socially acceptable in terms of odours in the society you lived in?
- How do you believe society in Canada looks at what is socially acceptable with odours?
- Have your personal views on odours changed since you moved to Canada? And if so how?

▣ Impact on social relations?

- You are on public transit and someone with body odour sits next to you. What do you do?
- How are your relationships with residents who have questionable odours? How do other residents interact with those individuals? Other staff?

▣ Sources of Malodour?

- What kind of things do you believe cause breath odours?
- What concerns do you have about a patient's health that has breath odour?
- How do you think you can help someone that has breath odour?

Appendix D RCA Personal Log Chart

RCA	RESIDENTS CARED FOR?	ODOUR MOUTH/BODY?	COMMENTS ON ODOUR MANAGEMENT
RCA01	Average 7 (range 5-9)	Both body and mouth	<p>“During hot days residents sweat more and tend to have more body odour”</p> <p>“I noticed resident had mouth odour for a few days even after brushing the teeth and using mouth rinse. Asked residents if she had a problem she said she had pain in a tooth. Referred her to dentist turned out to be a cavity”</p> <p>“besides using the mouthwash, sometimes we need to know what is the reason/cause of odour?”</p>
RCA02	Average 9 (range 5-10)	Yes both body and mouth	<p>“one elder punches and kicks when giving personal care and chews on toothbrush. I try not to get close to strong side of elder to avoid being punched and kicked as much as possible. There is also a lot of verbal aggression. I do not find odour bothersome and if so I use mask”</p> <p>“it is work for me and odour is part of reality. I just get it done and help minimize the odours.”</p> <p>“Odours wish it is not there but the hot weather is not helping so I just help them so they will smell better.”</p> <p>“ I see it as my work so I try not to take odour to personally affect me. My preceptions well kind of unpleasant but bearable.</p>
RCA03	Average 7 (range 6-8)	Yes both body & mouth	<p>“doing the care quickly”</p> <p>“when you have everything setup for morning care(eg clothing, pad, basin to wash) it can be faster”</p> <p>“use de-odourising spray”</p> <p>“breath through mouth”</p> <p>“open window and turn on fan”</p> <p>“do care as quickly as possible”</p> <p>“use fan in bathroom”</p> <p>“some residents resistant to mouth care will not open mouth”</p>
RCA04	6 on average(range 4-8)	Yes both body & mouth	<p>“I sometimes use a mask, to avoid bad odour”</p> <p>“we brush their teeth and wash body with soap and water, apply body cream and deodorant”</p> <p>“sometimes I use mask to protect myself from inhaling the odour, I open windows slightly.”</p>
RCA05	11 on average(range 10-12)	Body only	<p>“washed under arms with soap and water and applied powder”</p> <p>“it is a challenge to do mouth care on elders with dementia”</p>
RCA06	10 on average(range 8-12)	Yes both body and mouth	<p>“gave resident orange juice(thickened) to freshen mouth”</p> <p>“resident bites toothbrush so brushing does not work for her”</p> <p>“took no action in dealing with mouth care as it does not work with resident”</p> <p>“cleaned mouth with wet cloth, since resident has problem following instruction.”</p>
RCA07	6 on average(range 4-8)	Yes both body and mouth	<p>“Washing under arms and perineal area”</p> <p>“cleaned dentures and mouth rinse given”</p> <p>“showers given including powder and deodorant”</p> <p>“brushing with toothpaste and mouth rinse given” to control mouth odour.</p>

Appendix E Letter of Introduction

UBC DENTISTRY



THE
UNIVERSITY OF
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COLUMBIA

Dear Residential Care Aide,

I am a Master's of Science (MSc) student at the University of British Columbia (UBC) in the Faculty of Dentistry. As part of my MSc requirements, I will be conducting a research study. The intention of this letter is to request your participation in this study. The primary research question to be addressed in this study is: What are the experiences of residential care aides (RCAs) in working with residents who may have breath odour?

The purpose of this research is to explore and understand the daily interaction that you have in working with residents. The research also is looking at your experiences, thoughts and preceptions in working with individuals who may have breath odours.

Inclusion and Exclusion Criteria:

To participate in this study, you must be a practicing residential care aide with at least one year of experience at the facility. In addition, you must have encountered or be currently working with residents who have breath odours .

Participant Commitment and Benefits:

If you are selected for this study, you will be invited to journal your thoughts, preceptions and experiences over a 2 week period regarding working with residents who have

breath odours. During the 2 week period I will be around to do some observation of your working environment and interaction with residents.

Following the 2 week period I will meet with you for a face-to-face interview that will last approximately 60 minutes. The interview, will include questions about your working environment and I may ask you to elaborate on certain experiences from your journal entries. This interview will be audio-recorded, after which it will be transcribed word for word by myself. You will be offered the opportunity to review the transcript once it is completed, as well as review my analysis of your comments for accuracy of your thoughts. The interview will take place at a time and location of your convenience. You will be eligible to receive an honorarium of \$40 dollars for your time and willingness to participate in this study.

There is no obligation to participate in this study you can choose to withdraw at any point or choose to refrain from answering any questions that you may not feel comfortable answering. All information shared by you will be kept anonymous; therefore none of your comments will be linked back to your name.

Thank you for your consideration of this request; I look forward to hearing from you.

Sincerely,

Charn Dhami BSc, Dip.DH, RDH