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Oral Health Knowledge and Attitudes Among Care Facility Staff Caring for Older People

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Abstract

Objective: To obtain a deeper understanding of oral health knowledge and attitudes among staff caring for older people in long-term care (LTC) facilities.

Methods: 30 in-depth, semi-structured interviews with caregivers, nurses and managers in 7 LTC facilities across Hawkes Bay and Nelson produced interview data transcripts. These were analysed to determine the oral health knowledge and attitudes of staff caring for older people in LTC facilities.

Results: Most LTC facility staff had a basic level of knowledge of dental caries; however, most were uninformed about periodontal disease, the benefits of fluoride, and the effect of medication on oral health. Irrespective of whether the participant was a caregiver or nurse, there had been very minimal education in oral health. Most participants reported working in a stressful environment with many challenges and high expectations that are difficult to meet. All participants agreed that there is a need for regular visits to LTC facilities by oral health professionals, and most believed that the current oral health care system is not meeting the needs of institutionalised older people.

Conclusions: There is a need to improve the oral health knowledge of LTC facility staff and to incorporate oral health professionals into the system of care for older people.

Introduction

The population of New Zealand is an ageing one, with the proportion of individuals in the 65+ age group expected to increase from 15% of the population in 2016 to 21-26% by 2043 (Statistics New Zealand, 2016). Within this age group, the proportion of individuals aged 80+ is projected to increase from 25% currently to 40% in 2050 (Statistics New Zealand, 2016). This follows the same trend as other industrialised countries and is due to increasing life expectancy and decreases in birth and death rates (Thomson & Ma, 2014).

Geriatric dentistry has always been difficult, with clinicians having to deal with medically compromised individuals taking multiple medications, and with oral diseases and disorders that have a disproportionate effect on them (Lamster, 2014). Tooth loss, dental caries, periodontitis, dry mouth, and oral cancer remain the main conditions of interest among older people (Thomson, 2014). Moreover, afflictions such as cognitive impairment and reduced manual dexterity can reduce an older individual's capacity to undertake personal oral hygiene (Portella *et al*., 2013).

The proportion of dentate or partially dentate older individuals has increased markedly (World Health Organisation, 2006; Ministry of Health, 2010). While the state of edentulism is becoming less common in older people, incremental tooth loss remains highly prevalent, leaving older individuals commonly in a partially dentate state (Thomson, 2012). As the older population retain their natural dentition for longer, they remain at risk for dental caries and periodontal disease (Samson *et al.*, 2008; Thomson, 2012). Dispelling the notion that older individuals are at a lower risk of dental caries, the dental caries increment among independent older adults in the community has been shown in cohort studies to be at least as high as that in younger individuals (Thomson, 2014). From the accumulative impact of dental experiences, the complex maintenance of oral and material structures that have had a lifetime of microbial, erosive, functional, parafunctional, and traumatic experiences is a main concern in geriatric dental care of the dentate (Lamster, 2014). The greater retention of teeth brings a greater need for prevention of oral diseases (Wardh *et al.*, 1997).

The number of individuals aged 65+ in New Zealand is expected to exceed one million people by the late 2020s and it is projected that almost half of this population will transition into a long-term care (LTC) facility at some stage of their lives (Smith, 2010; Broad *et al*., 2015). Institutionalised and dependent older individuals in New Zealand represent a group with a high risk of dental neglect (Thomson *et al.*, 1992). Many of these individuals are physically, medically and/or immunologically compromised and the dependent and complex nature of their oral care will be compounded with greater retention of teeth (Samson *et al*., 2008; Philip *et al*., 2011). Often, older adults enter LTC facilities with compromised dentitions, and those within LTC facilities have been shown to have poorer oral hygiene and oral health than their community-residing counterparts (Vigild, 1988; Smith, 2010). Dental caries in LTC facilities is a major problem and the dental caries increment among LTC facility residents is at least twice that of independent older adults in the community (Chalmers *et al.*, 2005; Smith & Thomson, 2016). A significant number of institutionalised elderly harbour current oral issues and accessing professional dental care is a known problem (Thomson *et al*., 1997; Forsell *et al*., 2010; Carter *et al*., 2004). Cognitive impairment in institutionalised older people can complicate the maintenance of their oral health (Carter *et al*., 2004; Chalmers *et al*., 2005; Lamster, 2014). Oral hygiene status was found to be worse in

dependent LTC facility residents than in independent LTC facility residents (Philip *et al*., 2004). These challenges will become more salient as the average LTC facility resident becomes older, and more of them will be physically and/or mentally impaired than in the past (Samson *et al*., 2008).

Oral disease rates are strongly determined by oral hygiene and, for many older individuals, their oral hygiene is dependent on the work of their caregivers (Axelsson & Lindhe, 1981). Caregivers look after a substantial proportion of the population, and that proportion is increasing as the population ages. In 2010, over 33,000 individuals were employed in the aged residential care sector and by 2026, a 50-75% increase in the workforce will be needed to cater to the growing population of institutionalised older people (Grant Thornton New Zealand Ltd., 2010). Oral care within LTC facilities is a long-standing problem and it currently tends to function as a reactive rather than proactive practice (Young *et al*., 2008; Smith & Thomson, 2017). Oral hygiene care is generally not a priority for LTC facility staff, who are responsible for dependent residents with concerning overall health and wellbeing issues, training curricula for staff reflect this neglect (Wardh, *et al*., 1997; Portella *et al*., 2013; Smith & Thomson, 2017). Oral hygiene measures have been described by LTC facility staff as "common sense" and, while a lack of relevant oral training is commonly brought up by LTC facility staff, the majority feel that they have sufficient knowledge to do their job (McKelvey *et al*., 2003; Forsell *et al*., 2010). However, studies have observed poor oral health knowledge in LTC facility staff and an attitude towards their own oral hygiene that is unlikely to translate well to their implemented hygiene measures on residents (McKelvey *et al*., 2003; Smith & Thomson, 2017). Specific oral hygiene tasks for dependent residents of LTC facilities are usually undertaken by an aging population of caregivers with varying degrees of training. The aged carer workforce tend to face time constraints, high staff turnover, and inflexible schedules that leave little room for optimal oral health care delivery (Wardh *et al*., 1997; McKelvey *et al*., 2003; Smith, 2010; Smith & Thomson, 2017). Oral hygiene in institutionalised older individuals has much to improve on, even where people received oral hygiene assistance from LTC facility staff (Samson *et al*., 2008; Philip *et al*., 2011). Caregivers have reported awkwardness and difficulty in providing oral hygiene care for dependent residents; admittedly, cognitively impaired and dependent residents are some of the more difficult individuals to care for (Chalmers *et al*., 2002; McKelvey *et al*., 2003; Smith & Thomson, 2017). This difficulty will become more physically and emotionally taxing as the average LTC facility resident becomes more frail (New Zealand Work Research Institute, 2014; Boyd *et al*. 2015).

Very few studies have investigated the oral health knowledge and attitudes of LTC facility caregivers and registered nurses, with only one New Zealand study having been conducted (McKelvey *et al*., 2003). That report revealed a geriatric oral health care system that needed improvement. To date, there are no clear indications fifteen years after that particular study was conducted whether the situation has changed. Accordingly, the current study investigated the oral health and associated practices, knowledge and beliefs among rest home staff in two areas of New Zealand.

Method

This was a qualitative study using semi-structured interviews. Qualitative research enables a thorough understanding of the setting under investigation, without the introduction of the researcher's preconceived ideas. The purpose of doing qualitative research for this study was to obtain a large quantity of rich information while allowing participants the opportunity to build on the areas they believe are important, in order to better understand the phenomenon under investigation. Although there are many advantages to qualitative research, it results in a large amount of complex information, the interpretation of which can be affected by researcher subjectivity.

Ethical approval was obtained from the University of Otago Human Ethics Committee in 2016, and data collection was undertaken in the Hawkes Bay and Nelson regions. The two researchers (KMS and MHGS) were based in these regions respectively and approached local LTC facilities differently. In Hawkes Bay, the Hawkes Bay Aged Care Executive was approached and the various LTC facilities offered their services; from these, four were selected to participate. The researcher was invited to facilities where potential participants were pre-arranged by the facility managers. In Nelson, seven LTC facilities were approached through direct email and phone communication and asked to participate; of those, three agreed. After permission was granted by facility managers, the researcher was invited to the facilities, where potential participants were approached by the researcher to participate. Facility managers, clinical managers, registered nurses, and caregivers were sought for interviewing. All participants were given information sheets to read and consent forms to sign.

Each participant completed a brief questionnaire prior to the interview that asked for demographic details, job title, relevant training and experience. All interviews were conducted by KMS and MHGS. Consistency across interviewers was achieved by assigning a general structure to follow with specific questions that had to be asked. The flexible, semi-structured nature of the interviews was selected to obtain the most information from participants. Since an emergent design is most efficient at obtaining a deeper understanding of the interview topics, contact between the interviewers was regularly organised in order to update the structure of the interviews as required.

Interviews focused on five general domains (guided by the earlier work of McKelvey *et al*, 2003): personal dental experiences; oral health training; oral health knowledge; day-to-day facility experiences; and participants' further thoughts. The line of questioning was modified according to the information gathered throughout the data collection process. The interviews took place between December 2016 and January 2017 and were approximately 20 minutes in length. Each interview

was audio-recorded for subsequent transcription and analysis. All transcribed interviews were analysed for themes using an applied grounded theory approach (Strauss, 1987); this emphasises the generation of theory from data, and it begins by researching and developing a hypothesis through a variety of methods. From the data collected, the key ideas are codified and grouped into similar concepts in order to refine them. The categories arising from these concepts form the basis for the creation of a theory.

Results

A total of 30 staff members from seven different LTC facilities were interviewed, comprising 17 from Hawkes Bay, and 13 from Nelson. Each facility provided rest-home care and had a hospital-level care unit. The participants comprised 15 caregivers, 11 registered nurses, 3 clinical managers, and 1 facility manager. Clinical managers were found to be registered nurses with a more administrative role, and so all registered nurses and clinical managers held a Bachelor of Nursing or equivalent qualification. As for the caregivers, only three held relevant tertiary diplomas, with the rest reporting ACE training, rest home certificates, first aid training and/or work experience under their training and qualifications. One caregiver had had three years experience as a dental assistant.

The participants comprised 26 females and 4 males with an age range of 24 to 65 and a mean age of 44. The registered nurses were on average younger than the caregivers with mean ages of 40 and 46 respectively. Some 19 participants classified themselves as New Zealand Europeans; while 6 were Asian, 4 Maori, and the remaining 3 were British, Indian or Romanian.

The findings from the interviews are described in five sections: personal dental experiences; oral health training; oral health knowledge; day-to-day facility experiences; and participants' further thoughts.

Personal Dental Experiences

"I don't have good teeth. Never have. I find them hard to look after and keep good" Caregiver

Most participants reported brushing their teeth at least twice daily, with eight individuals reporting brushing more than that due to their shift work. Only a few participants undertook interdental cleaning on a regular basis. One of the caregivers admitted "I don't have good teeth. Never have. I find them hard to look after and keep good" and another nurse mentioned "I'm not over-pleased with my oral hygiene". The frequency of mouth-rinse use was approximately the same as interdental cleaning.

Around two-thirds of the participants would be categorised as episodic dental visitors, attending for dental care only when there is an issue that needs to be addressed; to quote a caregiver, "If you are not hungry, you don't need any food. If there is no pain, you normally don't go. Why… spend money for no reason?". When asked about the factors that prevented them from seeking oral health care, the overwhelming concern emphasised by most participants was the cost involved. As one nurse remarked, "If I could afford it, I'd probably get them all ripped out". Several overseas-trained participants sought dental treatment only when they were back home because it was cheaper there. One of these participants had to have root canal treatment in New Zealand and has since been meticulously brushing, flossing and rinsing three times a day in order to avoid another expensive ordeal. The other strongly featured factors were pain and anxiety. These were often mentioned in conjunction with reference to the past, as one caregiver recalled, "well, in my day it was not called the dentist, it was called the murder house". Other inhibiting factors include time constraints, trust issues and negative experiences with "pushy dentist[s]". One young nurse reported having problems with her maxillary teeth which required numerous appointments, "... it was quite dramatic each time so I just got rid of them, nothing wrong with my bottom teeth, but I got rid of them as well".

Oral Health Training

"To be honest, I don't remember doing any" Registered Nurse

"That's sort of an expectation, that you know how to do that" Registered Nurse

Most participants had received very little or no oral-health-related training, irrespective of whether they were a nurse or caregiver. When asked about their primary training, around one third mentioned any form of oral-health-related coverage; as one caregiver stated, "it's not high on the list, let's put it that way". Most participants described the training as only theoretical, with only two mentioning a practical element, which was brushing dentures. Several participants said that this training was as a small part of their infection control module, rather than part of a dedicated oral health module.

Most participants based their oral health understanding on what they had picked up through life, rather than from any formal education. For example, one registered nurse had a basic understanding of the systemic implications of periodontal disease from a veterinary ordeal with his dog. One caregiver explained that she was aware of what to do because she has children of her own who at one stage required help, and another caregiver explained "your own experience is probably more beneficial than what they teach you on courses".

Participants reported that only two facilities had engaged with oral-health-training sessions for staff members, but neither involved direct oral health professional interaction, and one had been implemented only as a direct result of a case of neglect within the facility.

Oral Health Knowledge

"I've never really thought about that" Caregiver
"I couldn't tell you anything about it" Caregiver

When questioned about the causes of dental caries, most participants recognised sugar and poor oral hygiene as key factors. Other answers included acid, dehydration, calcium deficiency, antibiotics and gum

disease, but only eight participants mentioned either plaque, calculus or bacteria. Many participants were quite uncertain and non-committal with the answers they provided. Most participants identified signs such as tooth discolouration and bad breath, or the symptoms of pain, as sound indicators of dental caries. Only one participant (a caregiver) discussed derivative signs like residents not eating or holding their jaws, "you pick it up, the indirect signs of tooth decay". A number discussed periodontal issues as a sign of dental caries, indicating a certain degree of confusion. For the prevention of dental caries, most acknowledged the importance of oral hygiene, but only three mentioned visiting dentists for regular appointments.

Periodontal disease was less understood by the participants. When questioned about the causes of periodontal disease, many mentioned oral hygiene, but seven participants did not know of any causes. Other answers (in order of decreasing frequency) included: smoking, poor diet, not using mouthwash, genetics, infections, food traps, medications and local irritations. Only five respondents mentioned plaque, calculus or bacteria. Bleeding gums, gum recession, bad breath and discomfort were all commonly identified as signs of periodontal disease, and good oral hygiene was a strong theme for periodontal disease prevention. There were again some participants who were uncertain, and a couple believed that visiting a medical practitioner was key for treatment. Most respondents identified that periodontal disease can lead to tooth loss and poorer quality of life. On top of this, a higher risk of cardiovascular disease was mentioned by a caregiver, whereas cancer was suggested by another.

The purpose of oral hygiene for many participants was the removal of food and debris from in between teeth to prevent tooth decay. As one caregiver put it, it "takes food out of the mouth and makes room for toothpaste". However, there was some confusion noted when they explained the basis of oral hygiene. One caregiver thought brushing stimulated blood flow to the gums, whereas another referred to an article she had read previously that said that the protocol is "going away from flossing". Denture care was described with more confidence by many participants. Most discussed soaking dentures overnight, but a few voiced uncertainties as to whether or not they were supposed to brush the dentures, and with what. One participant does not brush from being told that this scratches the denture and so promotes bacteria growth, whereas others brush with toothpaste and toothbrushes, and thought that soaking alone was not sufficient. One caregiver described using denture adhesives as part of her daily routine with all denture-wearing residents.

The participants' fluoride understanding on a whole was poor. One third were uncertain as to whether fluoride was beneficial and a couple believed that it was bad. Several participants mentioned that they did not like the taste of fluoride ("It tastes bloody horrible" Registered Nurse) and some believed that it should not be in the water supply ("I think if we've got toothpaste and that sort of stuff with fluoride in it, why have fluoridated water?" Caregiver). One third of the Nelson respondents thought that fluoride was found in the water supply despite both Nelson and Tasman regions not having community water fluoridation. Of those who were pro-fluoride, many were unaware of the reason for it being beneficial, but many recognised that it was a controversial topic.

All respondents believed that there is a link between oral health and general health. When questioned further to see what kind of connections they believed existed, there was a plethora of answers including: weight loss, digestion complications, respiratory infection, diabetes, blood poisoning and earache. Almost every answer provided was unique, although several did mention a cardiovascular disease link. Some respondents discussed the psychological impacts, mostly involving a loss of confidence: one nurse mentioned depression associated with not being able to eat everything or smile, while one caregiver stated, "If you don't brush your teeth, then you don't want to smile and be social". Several participants believed that there was a link, yet could not describe exactly what the connection was; alternatively, they mentioned myths such as maternal calcium loss from teeth during pregnancy.

Many participants were either uncertain, or believed that medication does not have an impact on oral health. Only two participants were aware that medication could affect salivary flow rates. The most commonly reported consequences of medications were direct impacts from medications in the mouth that "eat away at teeth" and "erode teeth". Several nurses were aware of the link between certain antibiotics and tooth discolouration. One caregiver stated that "I've never really thought about that"; this unfamiliarity was a common theme among many participants.

Day-to-Day Facility Experiences

"It's a hassle that people don't want to deal with, oh, it's only your teeth" Registered Nurse

"Teeth aren't sort of a priority with older people, unless they are sore" Caregiver

All but three of the respondents described work-related stress. Time constraints and under-staffing were commonly mentioned problems: "everyone wants you"; "It is hellishly busy". The challenging nature of the work involved, high expectations, and the responsibility required were common themes, particularly in the hospital-level care units. One registered nurse explained, "Some of the girls are basically working on minimum wage which is really pathetic because it's a huge responsibility".

Participants were collectively satisfied in regard to the residents' diet. All facilities have nutritionist input, with flexibility for those with dietary requirements. One caregiver admitted "actually, they eat better than us probably". Despite this, many participants believed that the diet involved too much sugar – "sugar keeps them going" – however, this was generally justified to ensure that undesired weight loss is avoided. There was a

strong theme that the priority was keeping the residents hydrated and fed, which may result in nutritional sacrifices. For example, on hot days in one facility, one registered nurse explained that they will give residents ice-blocks because "it's just one way of getting fluid into them that they'll accept". The residents have up to 6 periods of food consumption throughout the day, with a registered nurse describing that "they're pretty much eating every couple of hours during the day, so the mouth doesn't get much of a break". The snacks between the 3 main meals were often "sugary", and there is often a dessert option after both lunch and dinner.

In all of the participating LTC facilities, it was the responsibility of the caregivers to provide oral hygiene for dependent residents. Many caregivers admitted that cleaning the natural dentition can be awkward and difficult; "all of a sudden you've got to kind of either reverse it, or do it back to front … you don't know how hard you're brushing or if you're hurting their gums". One caregiver said that it takes her around six minutes to clean one mouth, with this involving three minutes for brushing, and three minutes for swabbing excess toothpaste away. It was also explained that the challenge often came from uncooperative residents who can get aggressive and frustrated by the process. It was universally recognised that it is much more challenging looking after the natural dentition than removable appliances. A caregiver mentioned, "It's a lot harder… they just don't like stuff in their mouth half the time". Many respondents observed that residents are not capable of performing oral hygiene procedures independently to a satisfactory standard. However, when it comes to intervening and offering assistance, some will not be happy with their independence being taken away; with one caregiver admitting, "there's some that won't let me do it because they want to do it, but the reality is they can't". Residents deemed to be independent are left to their own devices and it is assumed that they can brush their teeth competently. They are not reviewed to determine their oral hygiene competence unless they present with signs of poor oral health, such as halitosis. Some participants mentioned indirect checks that the independent individuals were brushing their teeth by flicking their toothbrushes to determine their wetness, or by putting toothpaste on toothbrushes for the residents, although one staff member admitted that several residents feign the appearance that their toothbrush was recently used.

All respondents explained that the protocol was to perform oral hygiene procedures at least twice a day. However, with oral hygiene often being such a challenging aspect of the routine daily care protocol, a registered nurse admitted, "It's a bit hit and miss to be perfectly honest". Some residents will have their teeth brushed three times a day after every meal, particularly if they have "food-traps" that they cannot look after themselves. Interdental cleaning procedures were not mentioned in any facility oral hygiene protocol. One nurse observed that the protocol is to perform oral hygiene procedures after dinner which means that, "Whatever food they get at supper time is in their mouth for the entire night". This was acknowledged by the same nurse as an even more significant issue for the residents because their tongue does not perform the normal cleansing process after meals, and this results in food sitting in the mouth for long periods.

Most participants had some experiences to share where residents had been negatively impacted due to poor oral health conditions. Many mentioned ill-fitting dentures causing problems, with a caregiver explaining, "they end up on a mouli diet because you know, some teeth don't fit properly and you ask the family if they can do something about it and they won't because they just don't want to spend the money, or they think, oh well, they're not going to last very long so why bother". Most recognised the impact poor oral health can have on residents' ability to eat or speak; with a caregiver mentioning, "If they've got a sore mouth, there's no way they're gonna eat properly". A couple of nurses mentioned watching for changes in dietary habits and investigating as required to find that sometimes poor oral health was the cause for the issue. One nurse explained "Once we had a gentleman, he had his own teeth, and he just stopped eating for a while and then he ended up with a lot of abscesses. Unfortunately, he wasn't able to get treatment and you know, being elderly as well. So eventually it turned septic and he just started to stop eating and drinking and eventually passed away".

When asked about referral systems for dental treatment, participants discussed indirect dental referrals with either GP referrals or family contact; with a nurse stating, "most of the time, the first port of call is the GP". Many respondents mentioned addressing the family primarily with any oral-health-related problems, and this left it up to the family to continue the process. It was emphasised by some participants that families can be a barrier; "the family just don't want to do it". One nurse identified that "they don't always have a dentist as well you know, coming into care I think they sort of turn off whatever they have on the outside".

Further thoughts

"It's quite often an area that gets swept under the carpet" Registered Nurse

Most participants acknowledged the importance of further oral health education and identified the need for further training. Many believed "it's just like anything, you can always learn something new" and that "it's always good to have a refresher and you can't get too much education". Of those who believed that their current oral health knowledge was sufficient, most came from one facility which regularly provided education seminars. One nurse from this facility admitted that the last LTC facility where she worked overlooked the oral health aspect of resident care, observing that "It's amazing the difference in the two places that I've worked in". One caregiver earlier in the interview mentioned that she had not been to the dentist for 20 years and brushed her teeth only once a day, and yet when asked whether she might benefit from further education, she replied, "Not really. I mean, you look after their teeth the same way you'd look

after your own". Of the facilities that provided oral health care information sessions, none involved the input of an oral health professional.

LTC facility staff were asked whether they believed the current oral health care system in New Zealand accommodated the needs of the older population. There was a general consensus of dissatisfaction and neglect expressed; for example one caregiver responded, "heck no. I think they think because they're gonna die soon there is no point in taking care of them". Many believed that a significant barrier for residents seeking and receiving dental treatment was the expense involved because older people are on fixed incomes and oral health is likely to be subordinate to other health concerns. One caregiver emphasised that "it should be subsidised by the Government" and that "they should not suffer the pain for the sake of a bit of money". Several participants believed that access was not an issue; "if they want to go, they'll go", but the majority recognised that, for many residents, it was not as simple as that. One caregiver mentioned concerns that she did not know what issues warrant contacting a dentist, "you kind of think, is it really worth worrying them with stuff like this?".

Every participant believed that there is a need for regular visits from an oral health care professional to LTC facilities. One facility manager observed, "We don't think twice about bringing the doctor in, but the doctor is not a dentist… oral health is a part of your overall wellbeing. If you don't have good oral health, something else will fall over". There were a number of reasons mentioned for why it is important to have oral health care professionals visiting LTC facilities. These included: improving the importance placed on oral health so that families are more likely to take action; earlier detection of oral disease to prevent more serious complications; and to help combat the limited mobility and transportation problems experienced by many residents. When the concept of mobile dental units visiting LTC facilities was discussed, there was strong support for the idea. One nurse observed "a mobile dentist or hygienist would be marvellous 'cos that would eliminate a lot of those problems". It was highlighted to participants that a wide range of different health professionals (including GPs, physiotherapists, podiatrists and nutritionists) regularly visit LTC facilities, and yet very few participants can remember a time when a dentist came to their facility; as one caregiver queried, "You get a doctor's visit every three months, why can't you have a dentist come every six months?".

Discussion

LTC facility staff were interviewed in Nelson and Hawkes Bay to determine their oral health attitudes and knowledge, and to further understand oral health care protocols within New Zealand LTC facilities. The findings of this study reveal many issues in the overall geriatric oral health care system, most of which have remained unchanged since 2003, when they were highlighted by McKelvey *et al*.

The study has several strengths and weaknesses to consider before examining the findings in depth. The sample selection process differed in between the two locations. KMS opted for convenience sampling in Hawkes Bay with the 17 participants being arranged for the interview courtesy of the LTC facilities that volunteered their services. While the participants arranged were considered likely to be information-rich, they may have been selected by the LTC facility to represent their standard of care more favourably. The same applies for the LTC facilities involved, since the ones willing to volunteer may well be the 'cream of the crop'. However, the participants interviewed by MHGS in Nelson were selected randomly. Although these participants may have been more representative of the overall LTC facility, there are still the same issues in respect of the four LTC facilities which did not participate, and what might have been missed because of this. In saying this, generalisability is not the main purpose of the study; rather, the aim is to describe and understand the processes involved in the phenomenon.

Our study highlighted two main points to address: a need to upskill the workforce; and a need to improve the system.

Workforce

Our sample of 30 participants comprised predominantly women with an age range of 24-65, with nearly two-thirds being New Zealand European; this is likely to be a fair reflection of the workforce demographic profile in LTC facilities (New Zealand Work Research Institute, 2016). While the mean age was 44, the individual ages were surprisingly well distributed. Seven individuals were in their twenties; six in their thirties; five in their forties; nine in their fifties; and three in their sixties. Despite this, our sample supports the assertion that the aged carer workforce are themselves an ageing group (New Zealand Work Research Institute, 2016). For the workforce to cater to an increasing population of institutionalised older people, more will need to enter the workforce, and they need to be more knowledgeable about oral health. A new wage structure for aged residential carers has been recently announced by the Government which may assist in encouraging more people into the job, but more will need to be done to improve their knowledge and training (New Zealand Government, 2017).

For both registered nurses and caregivers, it appeared that their educational curricula excluded thorough oral health training due to an expectation that they already possessed the necessary skills and rationale from their life-based experiences. Commonly, the aged care workforce is perceived as unskilled, with work that anyone can easily transfer into doing (England, 2005). However, this is not correct and the nurses and caregivers that lack adequate training will consequently possess a spectrum of understanding ranging from competent to incompetent. This lack of education was very apparent when it came to the participants' wide range of oral health understanding. The links between socioeconomic position and dental attendance, oral hygiene and oral health are clear (Ministry of Health, 2010). Caregivers earn little more than the minimum wage, with a survey in 2016 finding the majority of caregivers received between $15.25 and $16.99 an

hour (New Zealand Work Research Institute, 2016). While wages have recently improved significantly for the workforce, the original socioeconomic impact on their oral health, attitudes and behaviour is unlikely to change as drastically. Most participants admitted to being episodic dental visitors, and many emphasised that they would attend only when there was an issue, principally due to the associated costs of treatment. Caregivers who do not place importance on their personal oral care and have a poor understanding of oral health do not bode well for consistent high-quality oral hygiene of dependent residents. To quote, "You look after their teeth the same way you'd look after your own". When the basic education requirements to provide satisfactory oral hygiene are often insufficient, the problem is compounded by factors such as challenging residents, understaffing, and time pressure, which all promote poorer standards of oral care.

We echo the recommendations of McKelvey *et al.* (2003) and Smith (2010). Caregiving and nursing training should include programmes to improve the oral health care knowledge in the ageing carer workforce. Continuing training programmes to reinforce oral health concepts and improve the current workforce's knowledge should be instituted and mandated. The arrangement in LTC facilities appears to be that the caregiver personnel perform all of the oral hygiene procedures. If there is an oral health problem, the caregiver will inform the registered nurse, who is then responsible to find a solution to the issue. Hence, caregiver training needs to focus on oral hygiene for dentate and denture-wearing older people, as well as basic detection and monitoring skills for oral-related problems. Oral hygiene training must also have both theoretical and practical elements. Nurses need to know more about when to refer, along with basic problems and remedies and it is important to appreciate that their differing roles require a different knowledge base and skill set. While not enough training is currently undertaken by the workforce, one survey showed most staff who had undertaken compulsory or non-compulsory training in the previous twelve months felt that they have used recently acquired skills and knowledge (New Zealand Work Research Institute, 2016). This is backed by our finding that most participants felt that they would benefit from continued education and training. Hence, providing more opportunity for continued education is paramount.

In 2010, the NZDA and Ministry of Health initiated a training programme called 'Healthy Mouth, Healthy Ageing: Oral Health Guide for Caregivers of Older People'. The programme aimed to benefit oral health in institutionalised older people through improving oral health knowledge and ability within the aged carer workforce. By 2016, around 3,300 caregivers had received this training, and feedback has been overwhelmingly positive[1]. However, with a workforce estimated to be 30,000 strong and growing in the residential aged care sector, it is clear that this programme will take significant effort to reach maximum participation without certain barriers being minimised or eliminated (Grant Thornton New Zealand Ltd., 2010). To advance progress in this area, national protocols and standards for geriatric oral health must be introduced (Smith, 2010).

System

The proportion of the population aged 65+ years is expected to surpass that for 0-14-year olds by 2028, yet, despite the extensive attention to (and resources for) children's oral health, there is relatively little for the growing older population (Statistics New Zealand, 2016). There are some broad parallels between the provision of geriatric and paediatric oral health care (namely in access and finance) as both populations can be generalised as being relatively dependent. Children are dependent on their family or guardians in providing financial support and access to services, and the same can be said with dependent elderly who are usually on fixed incomes as well. The oral health system has focused on developing a fully-subsidised proactive health care system for children and adolescents to promote a foundation of preventive care for when they reach adulthood. This philosophy has led to the development of the School Dental System and Adolescent Oral Health Scheme, both of which are readily accessible for children and adolescents. Publicly-funded oral health care targeted at the geriatric community is more limited. For the national oral health care system to cater to an increasing population of institutionalised older people, a focus on geriatric oral health that addresses access and finances is required.

Access can be improved by promoting dental visiting by LTC facility residents and dentists going to LTC facilities. Both interviewers were surprised to see that LTC facilities would promote access to physiotherapists, podiatrists, hairdressers, nutritionists and therapists without any mention of oral health professionals. Despite every participant believing that regular visits by oral health professionals to LTC facilities were needed, more than 80% of dentists work in private practice, and they are reluctant to provide domiciliary services to LTC facilities due to the unprofitable nature of the visits (Ministry of Health, 2016; Smith & Thomson, 2017). Only a quarter of dentists in one New Zealand study had visited a rest home or hospital to treat older people in the last two years and only one in twenty did so frequently (Antoun *et al.* 2008). The most common barrier to dentists providing domiciliary services in LTC facilities was the inconvenience of leaving their private practice (Antoun *et al.* 2008). The provision of mobile dental units by DHBs to be used by public dentists, or private practice dentists and hygienists volunteering their time and services seems like a potential solution to this barrier. This leaves the question of whether the future of geriatric dentistry lies with fully or partially subsidised care by the private practice majority or by a public dental workforce component instituted to address their needs. However it is done, the domiciliary care option was unanimously favoured by our participants because of the opportunities to educate and assist caregivers with their work, as well as checking on frail older people who would

1 Personal communication, Deepa Hughes, NZDA, 18 September 2017

otherwise be unable to access care. Problems with visiting a dentist arise for very dependent individuals. For those residents, leaving the LTC facility and getting treatment in a local private practice carries challenges that are often not surmountable. The local hospital may be the only solution, but this option does not come without further issues to address.

Rather than directing an oral issue to an oral health professional, referrals are commonly made to local general medical practitioners, or the family is contacted to arrange the trip on their own. GP referrals may be a sign that some LTC facility staff have insufficient awareness of oral health problems to know who to refer to; or were not aware of the scope of care and responsibilities of a general dentist. Many residents rely upon their family to arrange oral health care due to financial and access limitations, though some participants noted that it was not uncommon for the family to fail to act any further once the responsibility became theirs.

Again, we support the recommendations of Smith (2010) and McKelvey *et al*. (2003). LTC facility residents should have equitable, affordable and accessible oral health services made available to them. We suggest the idea of mobile dental units run by the existing private practice dental workforce or an established public geriatric dental workforce that would provide partially or completely subsidised services to dependent older individuals. Since dentists have admitted the challenges in treating older people with medical, physical and mental disabilities, special training should be offered to those tasked to treat LTC facility residents, in order to ensure confidence and competence (Smith et al. 2017). Mobile dental units operated by DHBs within their defined geographical area could potentially function as temporary dental clinics stationed at LTC facilities for certain periods on an annual basis. Such services could extend to boosting other deficient areas in the system like rural oral health. Regardless of the geriatric oral health service implemented, the emphasis should be on providing services that minimise access and financial barriers for older individuals.

The establishment of national standardised protocols for oral hygiene care and oral health monitoring in LTC facilities would be a step forward to ensuring that such a standard of care is in place for all LTC facilities in New Zealand. Regulation for LTC facilities to provide mandatory oral health care training can address some of the barriers to involving all relevant staff. All older individuals residing in LTC facilities should be regularly assessed for their oral health needs, and they should have these needs addressed as required. However, from our study, the problems of oral health care did not only appear to stem from inadequate oral hygiene protocol, but from staffing issues, predominantly in the knowledge and attitudes of staff, and complicated by time pressures within their working environment. Hence, we believe that a national standardised protocol would do little without addressing the workforce issues first. What appeared more important was the need to generate a functioning relationship between oral health professionals and the ageing carer workforce in order to better the oral health of this important part of the population.

Conclusion

There is a need for improved oral health care for the institutionalised older adult population that integrates oral health professionals and LTC facility staff in a coordinated, sustained and responsive system. The issues currently faced will only become larger as the future population becomes more aged and increasingly dentate.

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