



Directly observed daily mouth care provided to care home residents in one area of Kent, UK

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Objective: To gather accurate data on the daily mouth care provided in care homes including tooth brushing, oral health assessment, and recording of care provided. **Basic research design:** Direct observation and notes review. **Clinical setting:** Both nursing and ‘regular’ care homes. **Participants:** 365 Residents living in 16 care homes and their carers underwent observation, notes review or data collection in some form. **Main outcome measures:** Provision of mouth morning care. **Results:** Of 161 residents observed, most (93, 58%) did not have their teeth/dentures brushed. If performed, brushing was often carried out by the resident themselves (36 cases, 53%), rather than by a carer (32 cases, 44%). Carers used a toothbrush to clean inside a resident’s mouth in just 7 cases (4.3% of all personal care routines observed). Smaller care homes were no more likely to brush residents teeth than larger care homes, and nursing homes were no more likely to brush teeth than other care homes. Of the 309 sets of notes available for review, 41 (13%) contained a dedicated oral health needs assessment, and 109 (35%) contained a daily oral care chart in some form. Mouth care was often recorded inaccurately (15% of cases). **Conclusions:** This is the first observational study in the UK to assess oral care actually provided to residents by carers in care homes. The findings reveal a substantially different picture of daily mouth care than was previously understood and suggest that many of the nation’s care home residents may not be receiving adequate, or any, oral health care.

Key words: older people, care home, mouth care, dental, oral, England

Introduction

Thorough daily mouth care is essential for preventing oral disease, and it is particularly important for residents in care homes. Care home residents can experience deterioration in their oral health as a result of poor daily mouth care, and this could lead to an increase in life-threatening conditions such as aspiration pneumonia (NICE, 2015). Many residents also have modifying factors that make them more susceptible to oral diseases, such as existing oral health problems, partial dentures or a dry mouth. Simple preventive measures such as regular, careful cleaning must be in place as early as possible in degenerative disease. This minimises the need for treatment during later stages (Fiske and Hyland, 2000), improves residents’ quality of life and reduces the extent of future treatment costs (NICE, 2015). In addition to preventing oral diseases, daily provision of, or assistance with mouth care ensures early identification of problems, which should result in reduced pain and discomfort for residents and less invasive treatment.

Provision of daily mouth care by a third party will become increasingly important as our society ages. Many older people are unable to clean their own mouths adequately because of physical disabilities such as arthritis and poor sight, and/or cognitive problems such as dementia (Simons *et al.*, 1999; Weening-Verbree *et al.*, 2013). The responsibility for maintaining the oral health of many older people living in care homes therefore falls to their carers; however many carers have not received any specific training to enable them to help residents with their daily oral hygiene tasks

(BDA, 2012a; Monaghan and Morgan, 2010). One survey of care home managers in England found that requests for additional training and training materials emerged as a key theme from their investigation (PHE, 2014), and a study in Wales found that only 56% of managers believed their staff had received appropriate training to provide mouth care assistance (Monaghan and Morgan, 2010). In addition, there are currently no standards in place to monitor or measure mouth care provided in care homes in England, which may mean that mouth care is not prioritised to the same degree as other health care.

The national draft guidance paper on oral health for adults in care homes recommends that care home residents have their mouth care needs assessed when they are admitted to a care home and are provided with daily support for their mouth care needs, including brushing natural teeth twice a day with fluoride toothpaste and daily care for full or partial dentures (NICE, 2015). In addition, accurate recording of any mouth care given allows care homes to identify gaps in their mouth care provision and detect changes in a resident’s behaviour around mouth care, which may indicate a problem.

A number of previous studies have found that the oral health of residents in care homes is often poor (Frenkel *et al.*, 2000; Sheiham *et al.*, 1999; Simons *et al.*, 1999) and it has been reported that elderly people living in care homes have poorer oral health than those who live independently at home (Karki *et al.*, 2015; Morgan *et al.*, 2012; Sheiham *et al.*, 1999); however, little is known about daily mouth care provision in care homes. Previous surveys have asked care home managers about mouth care practices (Monaghan and

Morgan, 2010; Shah *et al.*, 2008); however this method may over-estimate the quality and amount of care given, due to desirability bias. A US study used real-time direct observation to assess daily mouth care and found that actual oral care provided to residents contrasted sharply with self-reported practices in the literature and suggested that nursing home residents who needed assistance received inadequate oral health care (Coleman and Watson, 2006).

Only with accurate data can we scope the size and magnitude of any deficiency in oral health care in this country, and identify areas for improvement. This study therefore aims to use direct observation and review of notes to gather accurate data on the oral health assessment of care home residents, daily mouth care practices – in particular, daily brushing and use of mouthwash provided by carers, and recording of mouth care in care homes.

Methods

This study was undertaken in a coastal area in Kent, UK. A list of all care homes in the area was purchased from Tomorrow's Guides Ltd (caredata.co.uk, December 2014). Care homes with and without nursing care were both included. All 30 homes in the area were contacted by post and a telephone call was made the following week. Nineteen homes agreed to take part. Reasons given for not taking part in the study included not being able to give a definitive response on participation within a reasonable timeframe (4 homes), researchers unable to contact the home for follow up by phone or email (2 homes), manager felt that training was not needed (1 home), carers could not attend because of a scheduling difficulty (1 home), home was too busy to attend (2 homes) and unknown (1 home). One home was excluded because it was significantly larger than the others (twice that of the next-largest home which meant it was likely to skew the results of an intervention study with which this study shared data collection). Two further homes subsequently pulled out of the study prior to data collection, leaving 16 homes in the study sample.

All residents in participating care homes were invited to participate; however, comatose or immediately terminal/hospice residents were excluded from the observation, because oral care at this point may well be markedly different from 'usual' recommended oral care. Short-term rehabilitation residents were only accommodated in one home and they were also excluded.

To ensure that an accurate and full picture of usual morning mouth care was recorded, researchers observed care provided by whomever was providing the morning personal care for the resident on the observation morning. This included care provided by both night and day-shift carers and also temporary staff.

Data collection comprised two parts; direct observation of carers providing morning personal care, and a chart/notes review. Verbal consent was sought from all residents and staff before any observations were made. Data collectors were all trained by one trainer. Role-play scenarios were performed at the training to ensure data collectors were recording data correctly and accurately.

Research participants (both carers and residents) were told that the study aimed to understand and describe morning care in care homes. As such, they were blinded to

the focus of the study on oral care. Care home managers were aware of the focus of the study.

Researchers 'shadowed' carers for one morning per care home, observing and recording any mouth care provided to residents. All data were recorded directly onto a structured observational spread sheet designed for the study, using a portable computer. Morning personal care usually consisted of dressing, bathing, transfer, toileting, changing incontinence products, oral hygiene, and grooming. Observations took place in the resident's room or wherever care was given, with the observer being as unobtrusive as possible. Residents were observed from the beginning to the end of their morning personal care. Where two carers provided care to one resident, mouth care provided by either carer was recorded. Observations began when the carer entered the room and greeted the resident, and ended when the carer left the room to move to the next resident or took the resident to the main day room to join other residents, whichever came last.

The home's daily care notes and residents' notes were reviewed. Data collectors recorded any oral assessment undertaken on admission, daily oral care plan or daily oral care notes/chart. Where either a care chart was filled in or mouth care was recorded in the notes, these records were compared for accuracy against the observed care given.

Descriptive statistics were used to summarise the amount and type of mouth care given to residents during their morning personal care and the extent of oral assessment and notes recording. Differences in proportions of occurrence of caring behaviors between different types of homes (small or large, nursing or care homes) were explored and tested for statistical significance using chi-square tests.

The study protocol was reviewed and received a favourable ethical assessment from the Berkshire National Research Ethics Service (June 2015) with a recommendation that the study be conducted as a service evaluation.

Results

Sixteen homes were observed. Four had nursing care and 12 did not. Care home size ranged from 13 to 55 beds (mean 27 beds), and a total of 365 residents resided were involved in the study in the study homes.

Sixty-nine of the 365 morning routines were not observed. The reasons for non-observation of the morning routine are shown in Table 1. Additionally, results for three observations were lost when a computer crashed and the data could not be retrieved.

Table 1. Reasons for not observing the morning routine of residents (n=69) in care homes

<i>Reasons that morning routine was not observed</i>	<i>n</i>	<i>%</i>
Missed – data collectors observing other residents	59	86
Resident not present	6	9
Morning routine not carried out done by lunch time	2	3
Care home didn't allow researchers to watch morning routine	1	1
Resident excluded – barrier nursed	1	1

A further 47 (23%) residents had had their morning personal care completed before the data collectors arrived at around 6.15am. Eighty-five (23%) of the residents in the study homes were classed as 'self-caring' by the care home. As such, these residents did not receive morning personal care from carers.

For the 161 residents whose morning routines were observed, most (93, 58%) did not have their teeth/dentures brushed as part of their morning personal care. In six (7%) of these cases, the resident refused mouth care; however in the other 87 (94%) instances, mouth care was simply not offered. In one case, a resident requested that a carer help with mouth care but the carer refused.

Sixty eight residents in our sample did have their teeth/dentures brushed during their morning personal care. In the most cases (36, 53%), the brushing was done by the resident themselves. In 32 cases (44%), the carer brushed the residents' teeth/dentures and in two cases (3%), mouth care was shared between both parties. When a carer was involved in mouth care (34 cases), it was mostly in one of the four nursing care homes.

Many residents wore dentures, which if brushed, were usually removed from the mouth. A carer used a tooth brush to clean inside a resident's mouth in a total of just 7 cases. This comprises 10% of the 68 residents who had their teeth/dentures cleaned and just 4% of all personal care routines observed (161). In 10 additional instances, a carer 'brushed' inside a residents' mouth using a sponge. All use of sponges occurred in one home. In one case, a carer used a sponge and a tooth brush to clean a resident's teeth/dentures.

Smaller care homes (22 beds or fewer, 22 was the median size) were no more likely to brush residents teeth than larger care homes (23 beds or more), 43% vs 42%, (χ^2 0.028, 1, $p=0.87$). Similarly, care homes that provided nursing were no more likely to brush residents' teeth than other care homes (42% vs 42.4%, χ^2 0.001, 1, $p=0.98$).

Of the 68 residents who did have their teeth/dentures brushed, most (59, 87%) used a tooth brush (the only other implement used for 'brushing' being a sponge, used in 10 cases (15%). Most used tooth paste (56 cases, 83%) and did not rinse their mouth with water after brushing (39 cases, 57%). The data collectors saw mouthwash being used during three of the 168 observed morning routines, and there was no observation of mouthwash being offered to any residents at any other time during the morning, up to half an hour after lunch. No carer was observed referring to any form of care plan before performing mouth care.

Turning to data from the review of notes, 309 sets of notes were reviewed. The reasons for not reviewing the remaining 56 sets of notes are shown in Table 2.

Table 2. Reasons why residents' notes were not reviewed (n=69)

<i>Reasons for not reviewing resident's notes</i>	<i>n</i>	<i>%</i>
Care home didn't allow researcher access to notes	44	79
Care home did not allow researcher to ask permission from resident to view notes	7	13
Data collector could not locate notes	5	9

Of the notes available for review, 41 (13%) contained a dedicated oral health needs assessment sheet, and most (37) of these came from one of two care homes. Eleven (4%) of the notes contained a dedicated oral care plan, mainly from one care home. One hundred and nine (35%) sets of notes contained a daily oral care chart, either as a separate chart for mouth care or more commonly as part of a general care chart. Where a care chart was present and the resident had their teeth/dentures brushed, most (12 of 19 cases, 63%) care charts were filled in immediately and a high proportion (17 cases, 90%) were filled in within two hours of care being provided. Mouth care was recorded in the daily written notes of 18 residents, 6% of notes reviewed.

There were 55 cases in which either a care chart was filled in or mouth care was recorded in the residents' notes. Eight of the 55 (15%) were found to be recorded inaccurately. Of the eight, seven were falsely positive - the carer recorded mouth care given that the data collector did not observe during the morning routine. In the remaining case, the carer recorded that mouth care was not given when the data collector had observed it.

Discussion and conclusion

This study aimed to use direct observation and review of notes to gather accurate data on the daily mouth care practices provided by carers in care homes (in particular, daily brushing and use of mouthwash) as well as whether residents' mouth care needs were assessed on admission, and whether care was accurately recorded on a day-to-day basis.

This is the first observational study in the UK to assess oral care actually provided to residents by carers in care homes. Providing daily mouth care is one of the basic functions of a carer, and these findings cause concern. They reveal a substantially different picture of daily mouth care than was previously understood and suggest that many of the nation's 431,500 care home residents (NICE, 2015) may not be receiving adequate, or any, oral health care.

This study found that a large proportion of residents in the homes studied were classified as 'self-caring'. These residents usually received no help with, or prompting about their daily mouth care. Most of the remaining residents also received no help with or provision of mouth care. When mouth care was performed, it was most often undertaken by the resident themselves.

While every effort was made to accurately observe and record the daily mouth care practices in the homes, the study does have some limitations. An observer being in the room during the morning personal care routine, would inevitably tend to improve the care given despite the observers being as unobtrusive as possible. In addition though the carers and residents were not formally informed that the focus of the observation was on mouth care, the home managers were and it is possible that they may have become aware of the study's aim. Because of these factors, our study may have over-estimated the frequency and quality of mouth care normally given. It is likely that these results show a best-case estimation of the current mouth care provided in care homes.

Mouth care may have been provided at other times during the day, and that mouth care would not have been captured in this study; however observers were in the care homes until around half an hour after lunch and there was no indication in any home of mouth care being provided at any time other than during the morning personal care routine.

The proportion of residents classified as 'self-caring' in our study homes, and the care provided to them has been portrayed as an area for improvement. Our aim with this study was to look at mouth care provided by carers so no attempt was made to categorise or analyse residents based on their need for care. It is possible that some 'self-caring' residents may legitimately be able to complete their own mouth care to a good standard without any help or prompting from care home staff; however the simple fact that these residents are living in a care home indicates that they are unable to care for themselves fully and prompting about mouth care would conceivably be the least that may be expected of the care home to maintain the oral health of these residents. Our study focused on care provided by carers and so did not investigate this group further; however Morgan *et al.* (2014) found that 24% (105/536) of residents in a group of Welsh care homes who reported they could brush well for themselves had "poor"/"very poor" oral hygiene status according to an examining dentist. Previous research has attempted to categorise older people's level of dependency for the purposes of maintaining their own oral health and receiving dental care (Pretty *et al.*, 2014), and the national guidelines recommend that all new residents have an Oral Health Needs Assessment completed on admission, partly to ascertain their mouth care dependency (NICE, 2015); however this is not necessarily easy to judge and the ability of residents and carers to accurately ascertain a new resident's level of mouth care dependency is an area in which further research would certainly be justified.

The results of this study contrast sharply to the results of other, self-reported studies about mouth care given in care homes in the UK. A survey of care home managers in the North West of England found that almost all care home managers (96%) stated that they had a system in place to ensure residents who needed help with oral hygiene received it (PHE, 2014). UK managers reported that tooth brushing is provided in their homes (80%) along with denture cleaning (96%) and mouth rinsing (76%) with 41% reporting that oral sponges were provided (Shah *et al.*, 2008). A further survey of care home managers in Wales found that 88% of residents routinely required assistance in cleaning teeth and/or dentures; however this study did not ask whether this care was actually provided (Monaghan and Morgan, 2010). Questioning residents themselves may provide a more accurate picture. In an earlier study, 343 care home residents said they preferred assistance in cleaning their teeth and dentures, but only 94 (28%) reported that the staff had helped them (Simons *et al.*, 1999).

Coleman and Watson (2006) directly observed US care practices and found that teeth were brushed with a toothbrush and toothpaste in 16% of cases observed: approximately half with a foam sponge, one quarter by the carer and one quarter by the resident, which is consistent with the observed care in this study. The same

study also found that in the few cases where mouth care was documented, documentation was inaccurate (falsely reporting that oral care had been provided). Our study also found some inaccurate reporting; albeit at a lower incidence.

In discussions with carers/managers and in previous studies, one reason commonly cited for not brushing a resident's teeth/dentures is resident refusal (BDA, 2012a; b; PHE, 2014); however in our sample only a very small proportion of residents resisted mouth care. In the vast majority of cases, the care was simply not offered. It is possible that carers are assuming that a resident will refuse care, based on previous experience of that resident. If this is the case, carers need more support and training in order to increase their confidence to try again, and help them manage resistant behaviour if/when it does occur. Similarly, carers need to know how to record and report repeated resistive behaviour as it may indicate an underlying problem in the mouth such as pain.

The use of foam sponges to clean teeth has been banned in some hospitals in the UK for two reasons (Howells and Davies, 2013). Primarily, because the foam head can detach in the mouth and become a choking hazard (MHRA, 2012) but also because the implement is ineffective at removing plaque and debris from the mouth (Fields, 2008; Pearson, 1996; Pearson and Hutton, 2002). Only one home in this study was using foam sponges; however the risk of choking is particularly high in care home residents and any training implemented for care homes should highlight that these implements should not be used in this or any setting.

Care home managers have a duty of care to meet the general oral health needs of their residents (NICE, 2015) and to include this in residents' care plans (Department of Health, 2006). Standard 8.2 states that care staff must 'maintain the personal and oral hygiene of each service user...' (Department of Health, 2006). Legislation conferred the responsibility for oral health improvement to local authorities (Lennon, 2012).

The draft NICE guideline on *Oral health for adults in care homes* notes that having a standardised, validated oral health assessment tool along with any associated training, was likely to lead to improvements in residents' oral health (NICE, 2015). Other studies have also recommended training carers as a way to improve or maintain the oral health of care home residents (BDA, 2012a;b; Fiske and Lloyd, 1992).

The national guideline on oral health for adults in care homes (NICE, 2015) should raise the profile of oral health in care homes; however in the absence of any checks and measures around provision of daily mouth care, and with so much time pressure placed on carers to do other important tasks, it seems unlikely that an improvement in daily care will take place in the near future.

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