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EATING/FEEDING ISSUES IN DEMENTIA: IMPROVING THE DINING EXPERIENCE

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People with dementia can have problems eating/feeding, which puts them at risk of malnutrition. There are various reasons why people with dementia find eating and/or feeding problematic, including difficulty co-ordinating movements in order to get food into their mouths, difficulty maintaining attention on eating, dysphagia, level of cognitive and physical impairment, resistance to care, agitation and psychological symptoms such as depression and apathy. It has been recognised that the environment is a crucial factor that can have an impact upon people with dementia in terms of improving their quality of life. This can also be true of the dining environment. It has been suggested that a dining environment that is welcoming, relaxing and comfortable has the potential to increase food intake and social interaction, which can make the eating/feeding experience more enjoyable and thereby minimise eating/feeding difficulties in people with dementia living in care homes. This article will consider the possible causes of eating/feeding difficulties in people with dementia living in care homes and the environmental factors that may enhance the dining experience. *Conflicts of interest: none*

KEY WORDS

Care homes
Dementia
Eating difficulties
Environment
Feeding difficulties

Dementia is the umbrella term used to describe a number of different brain diseases (Department of Health, 2009). The most common form of dementia is Alzheimer's disease, which accounts for between 40% and 60% of all diagnosed dementias, with the next most common being vascular dementia and dementia with Lewy bodies (Department of Health, 2009; Pace et al, 2011). In the UK, it has been estimated that there are presently about 800,000 people who have dementia (1.3% of the population) (Luengo-Fernandez et al, 2010; Alzheimer's Society, 2013). As the population is aging, this number is expected to rise to 1,000,000 in 2021 and 1,700,000 in 2051 (Alzheimer's Society, 2013).

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Dementia is a terminal condition (Jolley, 2010). The Alzheimer's Society (2011) states that prognosis is difficult to predict and a person can live up to 10 years. However, it should be noted that life expectancy is dependent on a number of factors, including age at diagnosis, how soon a person is diagnosed and presence of co-morbidities (Xie et al, 2008; Alzheimer's Society, 2011). According to the Office for National Statistics (2012), there were 45,132 deaths per million of the population in England and Wales in 2011 which had an underlying cause of dementia recorded on the death certificate. A higher percentage of these were female, although an increase in rates was noted in the 85-year-old and over age group for both males and females. It has been estimated that about 37% of people with dementia live in long-term care facilities such as care homes (Luengo-Fernandez et al, 2010).

Dementia is a progressive disease that leads to loss of physical and cognitive function (Pace et al, 2011). Common signs and symptoms associated with dementia are shown in *Table 1*. However, the progression of symptoms is unique for every person with dementia. A common symptom among people with dementia is difficulty eating and/or feeding, which can get worse as the dementia progresses (Chang and Roberts, 2008; Lin et al, 2010; Slaughter et al, 2011; Edahiro et al, 2012). Eating/feeding difficulties can lead to the problems listed in *Table 2*, all of which contribute to increased morbidity, mortality and diminished quality of life (Watson and Deary, 1997; Amella, 2002; Furman, 2006; Chang and Roberts, 2008).

The prevalence rates of eating/feeding difficulties among people with dementia living in long-term care facilities/care homes vary across studies, e.g. 30.7% (Lin et al, 2010), 40.8% (Slaughter et al, 2011) and 60.2% (Chang, 2012). However, it is generally accepted that eating/feeding difficulties and weight loss are common in residents of long-term care facilities (Keller et al, 2006).

Edahiro et al (2012) aimed to investigate the factors affecting

self-feeding in 150 elderly patients with Alzheimer's disease being cared for on hospital wards for patients with dementia, as well as residents in long-term care institutions and care homes. They found that one of the factors that had a significant effect on decreased independence in eating was difficulty in beginning a meal. They suggested that assisting people in maintaining eating independence might be achieved by eliminating environmental factors that interfere with beginning a meal. A dining environment that is welcoming and comfortable has the potential to increase food intake, social interaction and stimulate the senses, which can make the eating experience more enjoyable and minimise eating/feeding difficulties (Davis et al, 2009; Slaughter et al, 2011).

Table 1

Common signs and symptoms associated with dementia

- Increasing dependence with regard to all activities of living
- Memory impairment
- Communication difficulties
- Visual problems, including lack of spacial awareness and contrast sensitivity
- Pain, e.g. as a result of arthritis, neuropathies and pressure ulcers
- Anxiety and depression
- Apathy and social withdrawal
- Delusions
- Visual hallucinations
- Emotional lability
- Difficulty concentrating
- Agitation
- Aggression
- Recurrent infections and pneumonia
- Eating and/or feeding difficulties

Sources: Lynn and Adamson (2003), McKeith and Cummings (2005), Sampson et al (2005), Schreder et al (2005), Scottish Intercollegiate Guidelines Network (2006), Kverno et al (2008), Department of Health (2009), Mitchell et al (2009), Pace et al (2011)

This article will provide an overview of the potential causes of eating and feeding difficulties of people with dementia. It will then explore how improving environmental factors in relation to mealtimes in care homes may have a beneficial effect on eating/feeding difficulties associated with residents with dementia. It is hoped that the article will assist care home staff to identify the factors in the dining environment that may be having a detrimental effect on the eating/feeding behaviours of people with dementia and how the mealtime environment could be improved.

Table 2

Consequences of eating and feeding difficulties in people with dementia

- Inadequate food and nutritional intake
- Weight loss
- Malnutrition
- Dehydration
- Aspiration
- Respiratory problems
- Reduction in performance levels in terms of activities of living
- Weakness and fatigue
- Infections

Sources: Watson and Deary (1997), Amella (2002), Furman (2006), Chang and Roberts (2008)

Table 3

Reasons why the aging process can have a negative effect on nutritional intake

- Loss of taste and smell
- Decrease in lean body weight
- Poorly fitting dentures
- Decline in gastrointestinal function
- Co-morbidities
- Poor vision
- Decrease in liver and kidney function

Source: Wells and Dumbrell (2006)

Possible causes of eating/feeding difficulties in people with dementia

Nutritional deficiencies and weight loss are common among older people with dementia in both long-term care settings and in the community (Lou et al, 2007). The natural aging process alone can affect a person's nutritional intake for a variety of reasons (*Table 3*). However, for people with dementia, there are additional complications (*Table 4*).

People with dementia can experience changes in appetite, difficulty co-ordinating movements in

Table 4

Causes of people with dementia experiencing difficulties with eating and feeding

- Apraxia — difficulty co-ordinating tasks or movements such as using utensils/transferring food to mouth from plate
- Agnosia — impaired recognition, e.g. unable to recognise food
- Difficulty in handling items such as dishes
- Wandering or agitation interfering with mealtimes
- Refusing to eat
- Resistance to being assisted to eat
- Forgetting the routine of mealtimes
- Holding food in the mouth or forgetting to swallow
- Dysphagia
- Being easily distracted and therefore not eating or finishing a meal
- Difficulties processing flavours
- Quality of the interaction between the person with dementia and the carer who is assisting him/her to feed
- Level of cognitive and physical impairment
- Depression and apathy
- Undiagnosed pain, resulting in increased agitated behaviour and lack of appetite

Sources: Watson (1993), Amella (2002), Keller et al (2006), Piwnica-Worms et al (2010), Pace et al (2011), Edahiro et al (2012)

order to get food into their mouths, difficulties in relation to chewing and swallowing and partial or complete inability to initiate or maintain attention in relation to feeding themselves (Chang and Roberts, 2008; Sampson et al, 2009). Other factors that can result in people with dementia experiencing difficulties with eating/feeding themselves or being assisted to feed include the quality of the interaction between the carer and the person with dementia, the mealtime environment and routine, the level of cognitive and physical impairment, resistance to care, agitation, wandering, pacing and psychological symptoms such as depression and apathy (Chang and Roberts, 2008; Aselage, 2010; Aselage and Amella, 2010; Aselage et al, 2011; Edahiro et al, 2012).

The issue of dysphagia (i.e. swallowing difficulties) in people with dementia is outside the remit of this article. However, it should be noted that people with more advanced dementia often develop dysphagia (Bosch et al, 2012). This, along with pneumonia and recurrent infections, is usually one of the key indicators that the person is in the last year of life (Gold Standards Framework and Royal College of General Practitioners, 2011; Bosch et al, 2012).

A common management strategy for dysphagia in people with advanced dementia is enteral tube feeding via a nasogastric or percutaneous endoscopic gastrostomy tube (Sampson et al, 2009). However, Sampson et al (2009) conducted a systematic review to evaluate the outcomes of enteral tube feeding in older people with advanced dementia with swallowing difficulties. They found no conclusive evidence that enteral tube feeding increases survival and improves nutritional status, weight loss, prevalence of pressure ulcers and quality of life in people with advanced dementia. Indeed, it may increase the risk of the person developing pneumonia from inhalation of small quantities of the feed (Sampson et al, 2009). Therefore, careful hand feeding is recommended as it ensures the person with dementia does not lose the comfort of having one-to-one contact and social interaction with the person who is helping them to feed (Finucane et al, 1999; Dennehy, 2006; Peterborough Palliative Care in Dementia Group, 2009). Prescribable nutritional supplements may be appropriate for people with advanced dementia who are at risk of malnutrition (Peterborough Palliative Care in Dementia Group, 2009; Liu et al, 2014). The Peterborough Palliative Care in Dementia Group (2009) has published practical guidelines for managing compromised swallowing in people with advanced dementia.

Table 5

Predictors for eating difficulties and risk of weight loss among people with dementia living in care homes

- More advanced dementia and greater cognitive impairment
- Increased dependency with regard to activities of living
- Low body mass index
- Being on medications that depress appetite
- Needing assistance from carers to eat
- Living in environments which are not supportive of the nutritional needs of residents

Sources: Lou et al (2007), Lin et al (2010), Slaughter et al (2011), Chang (2012)

It needs to be acknowledged that low food intake or weight loss might not always be a consequence of the actual symptoms of dementia or people with dementia being unable or unwilling to eat (Lin et al, 2010). In care homes, lack of staff education, inadequate staffing levels and supervision at mealtimes, disregard for personal and cultural nutritional preferences as well as lack of assessment for co-morbid health problems affecting food intake and oral health problems can all contribute to malnutrition among residents with dementia (Kayser-Jones, 2002).

Carers can find it challenging to maintain adequate nutritional intake among care home residents with dementia who have eating/feeding difficulties (Thomas and Smith, 2009). Encouraging residents to eat and assisting them with feeding is time-consuming and requires the carer to be empathetic to, and knowledgeable of, the difficulties that the person with dementia is experiencing (Amella, 2004). The quality of the interaction between the person with dementia and the carer and the amount of time taken in assisting them to eat may have an impact on the nutritional intake of people with dementia (Amella, 2002). Chang and Roberts (2011) have produced practical strategies for feeding people with dementia. There is some evidence that training programmes can provide caregivers with improved knowledge, attitudes and supportive behaviours relating to mealtime assistance for people with dementia (Liu et al, 2014). However, it has been found that improved knowledge and greater levels of feeding assistance will not necessarily increase food intake and improve the eating behaviours of people with dementia during mealtimes (Hanson et al, 2011; Liu et al, 2014).

Predictors for eating difficulties and risk of weight loss among people with dementia living in long-term care facilities are listed in *Table 5*. Early identification of predictors of eating difficulties may be a means of preventing weight change and promoting quality nutritional care in long-term care facilities (Keller et al, 2006; Aselage, 2010). The measurement of body weight can be used by nurses in care homes for early identification of the nutritional status of older people with dementia (Lou et al, 2007). Care home staff should implement validated nutritional assessment tools (Aselage, 2010). For example, level of feeding difficulty can be measured using The Edinburgh Feeding Evaluation in Dementia (EdFED) Scale (a valid and reliable instrument to assess feeding difficulty in older people with dementia; Watson et al, 2001). The EdFED can help plan interventions to monitor feeding difficulties and promote nutritional status in older people with dementia.

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In care homes, mealtimes are the ideal opportunity to assess residents for feeding and eating difficulties and the ability to self-feed and swallow (Kayser-Jones, 2002; Amella, 2004; Keller et al, 2006; Lin et al, 2010; Chang, 2012). They are also one of the few times during the day that a person with dementia is involved in normal social interaction with other residents as well as carers (Manthorpe and Watson, 2003; Amella, 2004). Eating food can help provide comfort and pleasure (Manthorpe and Watson, 2003). It can prompt memories of past experiences of mealtimes and sharing food with others, thereby enhancing feelings of wellbeing and contributing to quality of life (Malloy, 2011).

Environmental strategies in reducing eating/feeding problems in residents with dementia

Quality of life is an important factor for people with dementia (Alzheimer's Society, 2012). It has been recognised that improving the physical and social environment may affect the behaviour of people with dementia and improve their quality of life (Day et al, 2000; Brush et al, 2002; The King's Fund, 2012). Consequently, with regard to mealtimes, nurses and other caregivers need to explore ways of providing a social environment that promotes individual dignity and comfort and encourages residents with dementia to eat (Brush et al, 2002; Amella, 2004).

The dining areas in long-term care facilities are often organised in a way that does not take into consideration the unique needs of people with dementia (Perivolaris et al, 2006). Reducing the size of dining rooms to accommodate no more than 25 to 30 residents has been found to have positive results in terms of improving the mealtime experience and consequently increasing food intake among residents with dementia (Perivolaris et al, 2006). Smaller, non-institutional-looking dining areas, with about four to six residents per table, may be better suited to the needs of people with dementia and have been associated with larger food intakes, improved communication and a decrease in agitated and aggressive behaviour (Day et al, 2000; Reed et al, 2005). Another strategy for improving the mealtime experience of residents with dementia is to introduce routine seating plans so that residents are familiar with their particular part of the dining area, rather than being sat in a different area each time (Clearly et al, 2008b). Also, Edwards and Beck (2002) found that introducing a fish aquarium into the residents' dining area can help provide a calming effect, increase the nutritional intake of people with dementia and reduce the need for nutritional supplementation.

Agitation can be a significant problem in some people with dementia, affecting their overall quality of life and nutritional intake during mealtimes (Hicks-Moore, 2005). Eating in an environment that is noisy and stressful can exacerbate agitation among people with dementia and result in inadequate food consumption (Thomas and Smith, 2009). Playing relaxing music during mealtimes may help to counteract the general noise levels in the dining rooms of care homes, exert a calming effect and decrease the cumulative incidence of agitated and physically and/or verbally aggressive behaviours among some care home residents with dementia (Watson and Green, 2006; Thomas and Smith, 2009; Johnson and Taylor, 2011). However, preference for music is personal and must be assessed on an individual level (Johnson and Taylor, 2011).

Repetitive questions and requests for information are common in people with dementia, which can prevent the person with dementia concentrating on eating during mealtimes (Nolan and Mathews, 2004). Nolan and Matthews (2004) experimented with an environmental design to provide residents of a special care unit for people with dementia with continuous access to information about common mealtime questions in the hope that it would decrease agitation around mealtimes and facilitate more pleasant interactions among residents and caregivers. A large clock and a sign with large lettering that identified mealtimes were hung in the dining area. Over a 5-month period direct observations of 35 residents at mealtimes showed reductions in food-related questions or requests. Therefore, it was concluded that a simple, inexpensive, environmental change might reduce repetitive questions commonly exhibited by people with dementia.

The way in which food is delivered at mealtimes may have an impact on the amount of food eaten by residents with dementia. A common institutional practice in care homes and long-term care settings is to serve meals on plates with the food/meal already in place. However, changing the style of delivery to a more 'family-style' service where residents are presented with empty plates and serving bowls from which to take the food may improve both resident participation in mealtimes and communication among residents and carers, thereby increasing nutritional intake at mealtimes (Altus et al, 2002; Desai et al, 2007). Serving meals in this way creates a more normal, home-like environment (Desai et al, 2007). However, in order to improve mealtime participation, eating behaviour and social interaction, it has been found that carers need to be instructed to interact with residents by prompting and praising appropriate mealtime behaviours (Altus et al, 2002).

It is also important to be aware that people with dementia are more at risk of visual impairments than people without dementia (Crow et al, 2003). People with dementia may have problems with visual acuity, contrast sensitivity, colour vision, visuospatial awareness, visual memory and visual attention. Such impairments can have a negative effect on cognitive performance, mobility and daily living activities, e.g. people with dementia often bump into things and have difficulty reading and recognising faces. Contrast sensitivity is the most consistent visual deficit in people with dementia (Crow et al, 2003). Therefore, simple manipulation of the dining environment, such as enhancing visual contrast in relation to the way in which food is served, may improve food intake

(Brush et al, 2002; Dunne et al, 2004). For example, the nutritional intake of people with dementia has been found to improve when high-contrast red or blue coloured tableware is used instead of low-contrast white tableware (Dunne et al, 2004), or by contrasting the colour of the place setting with the colour of the table, e.g. using a blue table cloth or dark table with white plates (Brush et al, 2002).

Enhancing the lighting during mealtimes, i.e. having the lights turned on and making sure there are no dark or shadowed areas, may also increase functional abilities and nutritional intake (Brush et al, 2002). Other studies have found that the sensory-based manipulation of introducing the smell of baking bread or coffee in the dining area may also increase food consumption during mealtimes (Perivolaris et al, 2006; Clearly et al, 2008a). Also, the eating experience involves much more than food being put on the table. Therefore, supervised helping with the preparation of food and being involved in planning the menu may help people with dementia feel more engaged in mealtimes (Davis et al, 2009).

Table 6 provides a list of suggestions, based on the above literature, for improving the dining environment in care homes for people with dementia. The extra resources that would be required for such interventions are listed in *Table 7*. Some of the resources may already be available within the care home. However, if not, other than the aquarium, the items are relatively inexpensive.

Issues related to the environment are only one of the various reasons why older people with dementia may have difficulties in eating/feeding (Aselage and Amella, 2010). Therefore, any environmental modifications should be used in conjunction with other strategies. Liu et al (2014) conducted a systematic review to evaluate the effects of a variety of interventions on mealtimes and eating difficulties in older adults with dementia. They found that there is a lack of high-quality research in this area and recommended that more rigorous studies are required to take into account individual interventions with regard to their effectiveness in different stages of dementia and by level of eating and feeding difficulties. With regard to modifying the dining environment and routines associated with mealtimes, they found only low-quality evidence that they increase food intake and decrease agitation. However, they emphasised that the lack of low-quality evidence associated with individual mealtime practices and environmental modifications did not mean that specific practices could not be effective for certain residents.

People with dementia are individuals and therefore interventions may work for some but not others. It is unlikely that any single intervention will be effective in all cases (Manthorpe and Watson, 2003; Watson and Green, 2006). The effectiveness of interventions may be dependent on the person's cognitive and physical functioning, the stage of dementia and the type of dementia (Liu et al, 2014). Therefore, in order to reduce the morbidity and mortality associated with poor nutritional intake, care homes should implement and experiment with a variety of interventions that aim to improve eating and feeding difficulties. They need to assess which are the most effective for which residents in terms of

Table 6

Environmental strategies that may help improve the dining experience of people with dementia

- Have a large, easily seen clock on the wall with a sign showing the times of breakfast, lunch and dinner (Nolan and Mathews, 2004)
- Use a tablecloth and lay the table with place mats and cutlery. This makes the dining room more homely and can prompt recognition that it is time for a meal (Perivolaris et al, 2006)
- Use brightly coloured place mats and/or brightly coloured crockery and utensils to provide a contrast and make it easier for the resident to see and recognise them. Avoid patterns; use one colour (Brush et al, 2002; Dunne et al, 2004)
- Have the smell of freshly baked bread or coffee in the dining area to stimulate the senses and prompt recognition that it is time to eat (Perivolaris et al, 2006; Clearly et al, 2008a)
- Residents should aim to sit in the same place to provide familiarity (Clearly et al, 2008b)
- Consider residents helping themselves to food, as they would in their own home (Altus et al 2002; Desai et al, 2007)
- Use adequate lighting, i.e. no dark or shadowed areas, and make sure that the lights are turned on at mealtimes so residents can see more clearly (Brush et al, 2002)
- Play relaxing/familiar music in the background as this may help reduce agitation (Hicks-Moore, 2005; Thomas and Smith, 2009)
- Have a fish aquarium (lockable and difficult to move) in the dining area as this may help reduce agitation and wandering (Edwards and Beck, 2002)

Table 7

Resources for improving the physical and social environment of dining areas in care homes

- Equipment for playing music
- CDs
- Brightly coloured crockery, utensils
- Table cloths, place mats
- Large clock
- Signs
- Bread making machine/coffee machine
- Lights, light bulbs
- Aquarium (should be lockable and difficult to move)

both nutritional intake and improvement in quality of life (Liu et al, 2014).

It is important for care home staff to bear in mind that 56% of all care home residents die within a year of admission to the care home (Kinley et al, 2013). Therefore, as mealtimes are such an important part of the social routine of living in a care home, improving the whole eating experience for residents may improve overall quality of life in the last year of life.

Conclusion

Problems with eating and feeding are common in people with dementia. The environment can help to contribute to quality of life and may influence eating and feeding behaviours. Studies examining the influence of the environment during mealtimes are of mixed quality. Further research should be conducted in this area to determine the actual effect of the environment. However, there are many reasons why a person with dementia may have problems with eating and feeding, with the environment being only one factor. Effective interventions should take into consideration the importance of assessment of nutritional intake and feeding difficulties, the training of caregivers and the quality of the interactions between carers and residents with dementia. EOLJ

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Key Points

- People with dementia may have problems eating and feeding which puts them at risk of malnutrition.
- The reasons why people with dementia find eating/feeding problematic include difficulty co-ordinating movements in order to get food into their mouths, difficulty maintaining attention in relation to feeding themselves, dysphagia, level of cognitive and physical impairments, resistance to care, agitation, depression and apathy.
- Improving the dining environment in care homes, by making it more welcoming and relaxing, may minimise eating/feeding difficulties in residents with dementia. However, there is a lack of high-quality research in this area and more rigorous studies are required that take into account individual interventions with regard to their effectiveness in different stages of dementia and level of eating/feeding difficulty.
- Improving the dining environment is only one of various strategies that can improve the eating/feeding behaviours of people with dementia.