INNOVATION IN THE NUTRITIONAL CARE OF DEMENTIA

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Mealtime eating difficulties are a major contributor to malnutrition in people living with dementia, as well as a constant stress to those caring for them. This article will explain the innovative approach taken which led to the development of software to help carers identify, find solutions and create a care plan to overcome mealtime eating difficulties.

Initial exposure to people living with dementia came from providing a dietetic service to a 99-bed registered dementia care home in 2011 where >90% of the residents had a form of dementia or cognitive impairment. The dietetic department would receive many referrals for malnutrition which often stated that residents were refusing to eat lunch, the main meal of the day. Very quickly, the hardest part of the dietetic role became getting people living with dementia to eat.

The loss of independence in self-feeding associated with mealtime eating difficulties can lead to weight loss, malnutrition and a poorer quality of life.

When providing a dietetic assessment, all the conventional and recommended evidence-based practice approaches to improve nutritional intake were implemented. Often, these approaches would not work successfully and the person living with dementia would continue to lose weight. This led to trying a completely different approach. Mealtime observations were commenced on a particularly problematic floor in the care home to see if anything was being missed in the usual assessment approach. More was learnt in that one-hour mealtime observation than in the previous six months of discussing and planning interventions. Many mealtime eating difficulties were observed which prevented those living with dementia from consuming enough food.

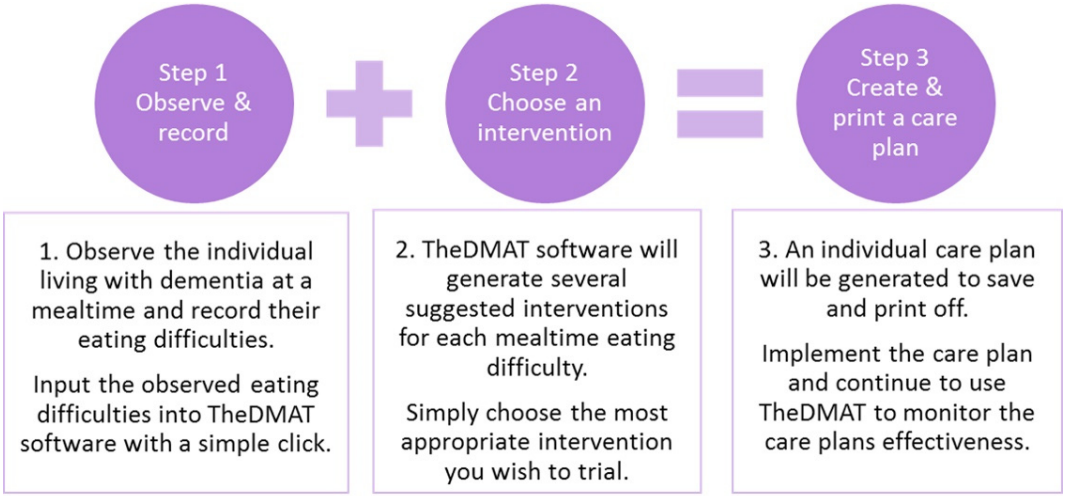
Eating difficulties at mealtimes have also been termed as 'feeding difficulties' and 'aversive feeding behaviours'. Whatever the terms used, they describe the decline in eating abilities and behaviour associated with mealtimes in people living with dementia.[1] The loss of independence in self-feeding associated with mealtime eating difficulties can lead to weight loss, malnutrition and a poorer quality of life. Problems with eating and feeding can often become a stressful time for both the carer and person with dementia.[2]

The difficulties observed made mealtimes a highly complex caring task. For example, some residents would struggle getting food off the plate and into their mouths, others would have difficulty chewing or swallowing and for some it seemed that they did not even recognise it was a mealtime. Those with more advanced dementia would refuse to eat or show signs of aggression. It seemed obvious that until these mealtime difficulties were resolved, dietetic advice would not be as effective as it should be.

RECORDING MEALTIME EATING DIFFICULTIES

It was necessary to find a way to record these mealtime observations and,

Figure 1: How to use The DMAT



importantly, also have suggestions of effective interventions to overcome them. A quick look at available research showed that there was limited information available for recording mealtime eating difficulties.[3] The tool that had undergone the most rigorous testing for validity and reliability only highlighted a few of the observations witnessed and provided no suggested interventions,[4] plus it was difficult to find any records of it being used in clinical practice. This prompted the creation of a more practical tool to record observations and, in addition, suggest interventions to overcome the observed eating difficulties.

Initially, the tool was based on the Caroline Walker Trust practical guidelines *Eating Well: Supporting Older People and Older People with Dementia* (pages 25-27)[5] and used elements from the Edinburgh Feeding Evaluation in Dementia Scale[4] to provide a simple way of measuring the frequency of the identified eating difficulties. The tool was named the Dementia Mealtime Assessment Tool (DMAT) and with the help of a dietetic student, the DMAT was used to observe and record eating difficulties in a sample of dementia residents.

The DMAT was simple to use and helped identify an individualised treatment plan to target interventions on overcoming the eating difficulties. The DMAT was useful in clinical practice and its use was continued; however, it was felt that further advancement was warranted as it provided a simple solution to a complex problem and feedback from the care home was positive.

DMAT INITIAL MEASUREMENT FORM

Starting an MSc in Clinical Research (MRES) at University of Hertfordshire six months later, provided the opportunity to explore the literature on dementia and eating difficulties. Available tools for measuring mealtime eating difficulties were researched and elements from each tool aided in designing the DMAT 'Initial Measurement Form'[3,4,6,7] Most of the research was completed in long-term care settings, although the findings could be transferrable to home care and the acute setting.

INTERVENTIONS FOR EATING DIFFICULTIES

The literature was researched for effective interventions for the many different types of eating difficulties, including how manipulation of the environment and social interactions at mealtimes could aid in the improvement of eating difficulties and nutritional intake. Research in this area has been neglected, with much of the research completed over a decade ago. Recently, there has been a resurgence of interest in the topic with literature or systematic reviews and guidelines published.[8-14] Guidelines however are limited in their recommendations, with many potential interventions that could help

improve eating difficulties not mentioned, despite the authors suggesting assessment of eating difficulties.[13]

Reading and critiquing all the different interventions made one thing completely clear: one intervention alone is not going to work. Mealtimes are complex and there is a need for multi-component interventions to address this, while ensuring individualisation of the care plan. When translating the evidence into practical interventions, this was kept in mind.

DMAT PILOT PROJECTS

The DMAT has been piloted by several NHS trusts and private organisations during its development. Feedback from these experiences highlighted that the DMAT needs to become more accessible with an emphasis placed on providing interventions that are simple to initiate.

THE DMAT ONLINE SYSTEM

With the help of a software developer, the DMAT was transformed from a paper-based resource into web-based software compatible across multiple devices. The DMAT aims to help carers identify, find solutions and create a care plan for overcoming mealtime eating difficulties in dementia. The DMAT software works in three simple steps (see Figure 1).

Step 1. The figure provides an overview of how to use the DMAT. First you create an account and log into the system.[17] Once logged on, you can download instructions and the Initial Measurement Form in paper format to use during mealtimes if required. Based on the research literature and feedback from pilot projects, the Measurement Form helps identify 37 common eating difficulties and is split into four sections, an example of which is shown in Table 1.

Table 1: Example of common mealtime eating difficulties taken from The DMAT Initial Measurement Form

Section 1			
Ability to self-feed (10 items)	Not seen	Seen once	Seen repeatedly
Difficulty identifying food from plate			
Falls asleep or is asleep during mealtime			
Incorrectly uses cutlery (spoon, fork or knife)			
Section 2			
Preferences with food (7 items)	Not seen	Seen once	Seen repeatedly
Prefers sweet food or eats dessert/sweets first			
Eats very small amounts of food (or drink)			
Eats other people's food (or drink)			
Section 3			
Resistive or disruptive behaviour (12 items)	Not seen	Seen once	Seen repeatedly
Refuses to eat (verbally or physically)			
Stares at food without eating			
Shows agitated behaviour or irritability			
Section 4			
Oral difficulties and behaviours (8 items)	Not seen	Seen once	Seen repeatedly
Bites on cutlery (spoon, fork, knife)			
Holds food or leaves food in the mouth			
Difficulty chewing			

Step 2. The DMAT system allows you to choose two interventions per eating difficulty and any combination of interventions can be trialled. Limiting the interventions to two should keep the care plan simple and allow more accurate outcome monitoring. Different eating difficulties require different approaches, but generally the first set of interventions are aimed at improved caring techniques. The next set of interventions aims to enhance catering and nutrition support. Further interventions are aimed at adapting the mealtime environment to make it more dementia-friendly, as provided in the example in Table 2. Finally referral to healthcare specialists may be indicated.

The DMAT is not a dysphagia tool, but does highlight swallowing difficulties in the 'Oral Difficulties and Behaviours' section on the Initial Measurement Form. The intervention choices associated with these highlight to care staff the importance of patient safety in regard to certain oral difficulties and levels of risk in dysphagia.[15] If any texture modified food is recommended as an intervention, users are also reminded to refer to the national descriptors.[16]

Step 3. The system will generate a care plan based on the identified eating difficulties and chosen interventions (see Figure 2 for example). The care plan is saved on the system and can be downloaded, printed and shared with health and social care teams.

For monitoring, it is recommended to use the DMAT monthly or fortnightly if you have concerns about the individual. Comparisons of previous care plans and results can help measure improvements in eating difficulties.

Table 2: Range of interventions that could be trialled for overcoming the mealtime eating difficulty 'Stares at food without eating'

Suggested interventions: Stares at food without eating
Reassure and remind the individual where they are and what time it is and what they are doing.
Check hearing aids or glasses are worn if normally used.
Try verbal cues: prompt the individual to initiate eating and offer encouragement.
Try manual cues, e.g. placing food or utensils into the person's hands.
Try modelling eating so individual can copy your movements and offer encouragement.
Trial using hand over hand or hand under hand technique to initiate and guide self-feeding.
Simplify the meal process: place only one plate and one utensil on the table, directly in front of the individual. When the individual is finished with the first dish, replace it with another.
Trial sensory cues, especially those involving smell, this can let the person know it is time to eat and help stimulate appetite.
Trial using plates with a simple plain design and ensure a colour contrast between the plate and the food (e.g. white food served on a white plate may cause visual problems in identifying the food).
Trial a colour contrast between the table or place mat and the plate (e.g. a white plate on a white tablecloth may make identifying the food harder). Note: tablecloths make dining more attractive and may provide the colour contrast required rather than changing the plate.
Trial adjusting lighting: People living with dementia tend to need increased light compared to normal; attention should be paid to lighting in rooms where people eat. Try to achieve high levels of illumination whilst still maintaining a homely feel. Note: If seated near a window the outside light may cause glare, making it harder to see the meal, therefore try moving the meal place.
If the individual continues not to eat provide feeding assistance and consult with a dietitian for nutritional assessment.

The DMAT was simple to use and helped identify an individualised treatment plan to target interventions on overcoming the eating difficulties.

Figure 2: Example of the DMAT Care Plan

RESISTIVE & DISRUPTIVE BEHAVIOUR

Difficulty observed	Frequency	Suggested intervention
Stares at food without eating	observed repeatedly	1. Reassure and remind the individual where they are and what time it is and what they are doing. 2. Simplify the meal process: Place only one plate and one utensil on the table, directly in front of the individual. When the individual is finished with the first dish, replace it with another.

SUMMARY

Maintaining independence at mealtimes by preventing and overcoming mealtime eating difficulties should be a more prominent feature of nutritional care for people living with dementia. A recent systematic review on supporting improved nutrition and hydration in dementia concluded that there was 'no specific evidence or lack of effectiveness of specific interventions'. The authors also stated, with good judgement, 'people with cognitive impairment and their carers have to tackle eating problems despite this lack of evidence'.[8]

The DMAT has not undergone psychometric evaluation for validity or reliability, but provides a much needed resource to quickly and easily capture common eating difficulties that people with dementia may present with. Perhaps more importantly, it provides carers with evidenced-based simple, practical and cost effective interventions to create a care plan to overcome them.

The DMAT will continue to be developed and is in the process of becoming involved in research trials. You can try the DMAT yourself with a seven-day trial by signing up on the website www.thedmat.com

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