

useful tool for identifying possible treatable causes.^{2,3,6 (***)}

Functional & urge incontinence

What is unique to those with dementia, is that they have the highest incidence of incontinence across populations, (ranging from 53% - 90%),^{3,7} and they mostly fall into the categories of functional and urge incontinence.^{3,8}

Some authors have even suggested that, because there is no physiological cause of functional incontinence, it should **not** be referred to as a ‘continence issue,’ but a toileting difficulty,^{7,9} or toileting disability.¹⁰ This may be open to question, however, as much of what results in their functional difficulties, such as finding/recognizing the toilet, adjusting/removing their clothing and initiating and sequencing the appropriate toileting steps, is related to neuro-degenerative changes.

Brain/bladder relationship

It is important then, to discuss the brain/bladder relationship or, as is described in Tadic, et al., (2012), “the brain/bladder control network.”⁸ This will allow us to fully grasp the implications of incontinence for those with dementia and ensure that staff can better understand the residents’ experience, physically and psychosocially, thus enabling the implementation of strategies for successful outcomes in both areas (brain and bladder).

This brain/bladder control network is comprised of a small number of neural circuits that “perform sensory, motor, emotional and cognitive processing of the afferent^{*} signals (neurons) arising from an increasingly filled bladder in order to appraise the individual in the social context and react appropriately”⁸ and which occurs in a safe setting.¹¹

Maintain social awareness

As evident from this definition, all aspects of brain function are part of micturition, and failure in any one of the four areas of processing (sensory, motor, emotional, cognitive) can result in a continence problem. This is relevant to those with dementia since, even though they may be significantly impaired cognitively, they are still very much emotional beings, and are socially aware - the exception being those with frontal deficits who lose the social relevance of being incontinent.

** Afferent neurons carry signals to the brain and spinal cord as sensory data.*

Efferent neurons, in turn, send signals from the brain to the muscles, glands and organs of the body in response to sensory input.

Being incontinent is extremely embarrassing for most, since from early childhood we have been taught that wetting/soiling oneself is socially unacceptable behaviour.^{8,12} We are not born continent - it is a learned behaviour,^{4,8,13} and knowing when and where to appropriately empty one’s bladder is a significant part of being continent.

The emotional aspect is a major component in the malfunction of this essential ‘network’ in those with

dementia. They will either show a total lack of concern - as is seen in those with frontal deficits - or be embarrassed and/or feel shame, as seen in those with other types of dementia. We must never lose sight of these psychosocial implications in the care environment.

Prevalence of urge incontinence

Advances in neuro-imaging are also providing clues to the reason for the prevalence of urge incontinence (sometimes referred to in persons with dementia as 'detrusor hyper/overactivity'^{2,4,8}).

Imaging is indicating that it (urge incontinence) may be caused by a brain/bladder network malfunction related to vascular white matter changes. This results in an inability to postpone voiding and an increased sense of urgency that is outside of the individual's ability to control.⁸ This explains the behaviour of the resident who has just been to the toilet and, 5 minutes later, needs to go again. This is a legitimate urge and it too carries the emotional component of the fear of wetting themselves. It is important to note that this is different than the situation where a person forgets he/she has just been to the toilet.

Predictors of incontinence

The literature identifies two major predictors of incontinence in those with dementia - severity of the cognitive impairment and degree of immobility.^{3,7,14,15}

Mobility and dexterity make it possible to physically get there and carry out the step-by-step toileting process,^{3,7} but effective cognitive functioning is essential to overall success from the initial sensation to completion.

Loss of memory, visuospatial skills, recognition (gnosia), praxis, executive function, etc. will make it difficult:

- to recognize the need to urinate;
- to hold it until it is appropriate to go;
- to find the toilet;
- to adjust clothing;
- to use the toilet properly.

Anosognosia

One cognitive issue that was not addressed in the literature, although very relevant to the toileting activity, is *anosognosia*, which literally means '*they have no knowledge of their illness.*'

This loss of awareness that there is anything wrong, causes them to question why others are not only attempting to assist them but also are actually accompanying them into the bathroom - which is meant to be a very personal act in a private place.

There will be considerable variability in the degree of cognitive and functional abilities of individual residents. In order to provide person-centred care we must 'know' the person. The more we know about the person, the better we are able to maintain their independence and self-esteem around successful toileting.

The importance of knowing the person and their personal preferences is emphasized in much of the literature.^{1,2,7, 13,16}

Toileting history

A comprehensive toileting history should be obtained on admission, including toileting habits/difficulties - past

and present; terminologies used for emptying bladder and bowel and what they call the toilet (e.g. - the loo, bathroom, washroom etc. ^{5,7,13}). It is also very important to become aware of any non-verbal cues that may indicate a need to toilet.¹⁶

The Dementi*Ability* Methods are a perfect fit for managing and maintaining continence in long term care; one of the key principles is knowing the person.

The **WOW** model is used to evaluate and develop strategies for an individual in order to promote independence and offer meaningful engagement.

The first **W** looks at **Who** is this person - what do I know about them including their needs, interests, skills and abilities and what more do I need to know?

The **O** is related to the Observations - what are their strengths, habits, challenging behaviours - why and when are they happening?

The second **W** considers 'What am I going to do?' What strategies, roles, routines can be put in place that will promote independence, enhance self-esteem and reduce negative responsive behaviours.¹

The prepared environment

1. The physical component

2. The social component

Ultimately the goal of the Dementi*Ability* Methods is to support the person in a prepared environment with an emphasis on abilities, in order to maximize their function and quality of life, through meaningful engagement.

(1) The physical environment

When we use the term 'environment' in relation to dementia, it is a holistic construct. It consists of the physical, individual, and organizational environments. Keep in mind that the more impaired the person is, the more the environment accounts for their behaviour. Each (the person and the environment) must be adequately prepared to ensure successful outcomes.

The physical environment plays a major role in facilitating continence in individuals with dementia. Knowing that the brain/bladder network is disrupted by the cognitive losses means they may no longer be able to immediately recognize the sensation of needing to void, and it is only when they have a physical/visual cue that they are able to identify what their body is telling them.

If the first visual cue for the individual is a waste basket or a potted plant, then the result will be what we refer to as 'inappropriate voiding.'

Wayfinding and signage

Some long-term care environments currently use wayfinding or signage to identify where the toilet is and/or how to get there.^{5,13,16,17} Signage is one of the major strategies for promoting independence in the Dementi*Ability* Methods.

Depending on their ability to read, signage could be in words, pictures or both (as per the photo to the left). It is not enough to have the signs there; they must be directed to them, and shown how to utilize them by actually following the signs until they get to the bathroom. Doing this with the individual several times is *facilitating procedural memory through repetitive priming* (i.e., repeatedly doing a task until it becomes automatic).

This allows a resident with dementia to learn, unconsciously, the way to the bathroom.

This unconscious learning is also relevant to the toileting procedure itself. Putting the step-by-step toileting process on the wall by the toilet, and using pictures and words, allows the individual to develop the 'motor map' for the toileting process. Doing this repeatedly the same way each time, the individual is eventually able to do it independently. This can be followed up by using this same step-by-step process above the sink for hand washing.

Unconscious learning

The key to unconscious learning is consistency. Everyone who takes the individual resident to the bathroom must use the exact same steps otherwise the motor map is erased. This unconscious learning applies to any activity that involves motor learning (procedural memory).

All staff have seen individuals who come into care and, after a few weeks, are independently making their way to their bedroom or the dining room; but if you change their room or their place in the dining room they get agitated and have difficulty finding their way because we have erased the motor map, thus returning them back to square one.

The literature does address the need for environmental design, including the look and feel of home, for effective continence management, including signage.^{2,5,13,14,17}

Colour and contrast

One paper suggested painting all bathroom doors the same colour so they could be readily identified as a bathroom¹⁶. Colour in the bathroom is also important. The loss of depth perception means that there must be good contrast in order to differentiate the toilet from the wall and floor. A coloured toilet seat, that contrasts with the colour of the bowl and floor, would make the differentiation more likely.

(2) The social environment

The second aspect of the prepared environment is the **Social Component**. In long term care this includes staff, families/visitors and other residents.

Staff must be adequately prepared to work effectively with residents, including knowing as much as they can about the resident relative to toileting habits, behaviour, needs, as well as their cognitive and functional abilities.

Staff must also remember that, since the resident with dementia is not aware they need care, they are likely to be resistive unless approached by staff with that knowledge in mind.

The literature supports the fact that most negative responsive behaviour occurs around personal care.^{18,19} An approach that respects the person, as well as their personal space and need for privacy, is key to avoiding a negative response.

The individuals themselves must also be adequately prepared in order to promote continence. We must ensure that they are maintaining their dexterity by providing engagement in activities that maintain and enhance fine and gross motor skills so that they can mobilize, adjust their body in space, adjust their clothing, wipe themselves and wash their hands.

Vision and hearing

We must also maximize their visual and auditory function. This is in keeping with the concept of the whole person in the Dementia *Ability* Methods - body, mind and spirit. In this case the focus is on the body (i.e. developing practical life and sensory skills - both key to effective toileting).

Can the organizational environment be 'prepared' to improve continence?

Without a doubt!

Policies on continence management will clearly have an impact on outcomes. Review papers on studies of continence management noted that, while LTC homes have participated in the studies, the most successful strategy, prompted voiding,^{2,7, 10,12,14,15, 20,21} was found to be very labour intensive. It was actually cheaper to deal with the incontinence than to implement the strategies that were found to manage continence.^{14,15}

The RNAO in 2006 published a '*best practice guidelines*' manual for the use of prompted voiding,²² but there is little evidence that this has been widely adopted. Unfortunately, the economics of the organization may over-ride what is most beneficial to the resident.

The Dementia *Ability* strategies described above are designed to promote self-toileting over time and are not labour intensive. They are simply incorporated into the process of taking the resident to the toilet, which staff would be doing anyway. The only thing that is different is that staff are directing the residents' vision to the step-by-step graphics as they assist them and identify each step as they proceed through the toileting process.

Anecdotally there are small samples of success¹⁶ where people in one home were taught to toilet independently; other homes have reported that residents now find the toilet independently).

The true success of this strategy will be demonstrated when long-term care homes that are adopting the Dementia *Ability* Methods are able to provide the supporting evidence-based data.

Ultimately promoting the independence, and self esteem of the person/resident, is key. They should never be put in a circumstance where they are embarrassed or shamed. We must always try to look at the world through their eyes.

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Using the mnemonic, 'DIAPERS'

The resident/patient with new-onset urinary incontinence should first be evaluated for transient, reversible causes, for which the mnemonic 'DIAPERS' may be useful:

- **Drugs**
 - **Infection**
 - **Atrophic vaginitis**
 - **Psychological (depression, delirium, dementia)**
 - **Endocrine (hyperglycemia, hypercalcemia)**
 - **Restricted mobility, and**
 - **Stool impaction**
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