AOTA Critically Appraised Topics and Papers Series

Alzheimer's Disease

**A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

CRITICALLY APPRAISED TOPIC (CAT)

FOCUSED QUESTION

What is the evidence for the effectiveness of interventions designed to establish, modify, or maintain routines on the occupational performance, quality of life, health and wellness, and client and caregiver satisfaction of persons with Alzheimer's disease?

Clinical Scenario:

People with dementia experience gradual declines in their abilities to perform routine occupations and to organize themselves into daily routines. Occupational therapists with clinical experience have seen the consequences of disruptions in routine for clients in early stages (e.g., becoming stressed and disoriented if staying at a hotel; Ward, 2003), as well as in the late stages of dementia (e.g., more aggressive behaviors if the spouse caregiver does not visit as usual). People with early dementia have reported the value of routines in maintaining their abilities in occupational performance (Nygård & Öhman, 2002).

Occupational therapists sometimes recommend routines as a strategy to deal with challenging behaviors such as wandering or aggressiveness (Corcoran, 2001; Ward, 2003) and familiar routines to deal with or prevent catastrophic reactions (Lewis, 2003). Routines recommended by occupational therapists can be applied to general sequences of activities in daily life, as well as to specific occupations such as toileting and sleeping.

Summary of Key Findings:

Summary of Levels I, II, and III

Findings Re: Implementing Routines in General

The literature is clustered in three broad areas: (1) Routines in general (i.e., the value of establishing a set of daily occupations in a routine way), (2) toileting routines, and (3) sleep routines.

Contributions of Quantitative Findings:

- One quantitative study (Level III) was identified that described routines in general as an intervention. This before–after study (Kovach & Stearns, 1994) examined the effects of a move to a dementia special care unit (with daily routine as an explicit aspect of the unit's intervention). There was a significant reduction in disruptive behaviors and in global rankings of troubling or dangerous behaviors, as well as a reduction in the use of physical (but not chemical) restraints.

Contributions of Qualitative Findings:

- Four qualitative studies provide contributions related to general routines: One study examined the issue of temporality impairments, two explored morning care routines, and one examined the value of unforced routines in a dementia special care unit.
- Temporal difficulties faced by people with dementia were described in a qualitative study (Nygård & Johansson, 2001). These difficulties included knowing when and how long activities were required, and influenced people's ability to manage daily routines and scheduling. Time aid interventions (e.g., adaptive clocks, special calendars) were successfully implemented with 2 of 5 participants; both lived alone and were motivated to address their problems related to knowing when and planning appointments. Participants also experienced difficulties judging the passage of time, and interventions to address this impairment were not identified. Overall, this study was based on sound qualitative methods of data collection and analysis.
- Skovdahl, Kihlgren, and Kihlgren (2003) cautioned against adhering rigidly to routines for morning care. Their analyses of videotaped recordings of interactions between staff caregivers and patients with dementia during morning shower time resulted in interpretations related to the implicit power held by staff, where at times the staff members' need to complete the task overrode the needs of the care recipients. The authors recommended that staff be trained to be alert to negative reactions from patients during morning care and to be flexible in the process of care, so that staff members' need to complete showering tasks do not overshadow patients' needs. Overall, this study was based on sound qualitative methods of data collection and analysis.
- One qualitative study (Donovan & Dupuis, 2000) exploring the care delivery characteristics of a dementia special care unit identified the support for unforced routines on the unit as a particular strength, as residents were able to follow their own preferred routines related to daily care. This study was primarily descriptive, with little evidence of trustworthiness reported.
- Gotell, Brown, and Ekman (2002) identified that the use of background music and caregiver singing in the conduct of morning-care routines enhanced patient understandings of the morning activities and improved the quality of interactions between caregivers and people with dementia. Limited information about the methods of data collection and analyses result in cautious reporting of these findings.

Summary of Levels IV and V

Findings Re: Toileting Routines

Contributions of Quantitative Findings:

- Three systematic, one narrative, and one evidence-based review with practice recommendations were found that address issues related to the effectiveness of implementing toileting routines with people with dementia.
- Strategies that are implemented to address toileting routines include scheduled toileting (also called "timed voiding," which involves regularly toileting residents of long-term-care facilities), habit retraining (also called "individualized scheduled toileting," which involves monitoring and matching the person's typical toileting schedule), or prompted voiding (which involves a routine of asking a person with dementia about the need to void at regular intervals and providing assistance to do so as necessary). One challenge associated with these strategies is that each is not clearly distinct, and they are often used in conjunction with other interventions (e.g., caregiver education, medication). One reviewer did not make distinctions between the strategies and suggested that these should be standard practice in the management of dementia (Doody, Stevens, Beck, Dubinsky, Kaye, Gwyther, et al., 2001).
- Prompted voiding has supportive evidence according to two of the reviews (Eustice, Roe, & Paterson, 2000 [Level I]; Skelly & Flint, 1995 [Level V]). It does require that people with dementia are able to recognize the need to void.
- Habit retraining aligns with occupational therapy's desire to maintain client-centered routines but does not have strong evidence to support its implementation (Ostaszkiewicz, Johnston, & Roe, 2004a [Level 1]). This review included a perceived (but not statistically significant) decrease in caregiver burden when habit retraining was implemented by caregivers of community-dwelling older adults.
- Timed voiding may be commonly implemented in nursing-home settings, especially with residents unable to express and or communicate their need to void; however, limited evidence has been found to support it as an intervention (Ostaszkiewicz, Johnston, & Roe, 2004b [Level I]).
- Although the evidence is not strongly supportive of any of these in favor of the others, it does appear that some sort of timed voiding or prompting is valuable to many people with dementia living in long-term-care facilities. The value of these routines to community-dwelling people with dementia has not been evaluated.

Contributions of Qualitative Findings:

- One qualitative study examining toileting issues described the value of formulating toileting routines that included prompted voiding and timed voiding, on the basis of the individual needs of people with dementia in a day center (Hutchinson, Leger-Krall, & Wilson, 1996).

Findings Re: Sleep Routines

Contributions of Quantitative Findings:

- Three randomized controlled trials (RCTs; Level I) were found that provide support for the value of incorporating nighttime routines into a multimodal intervention in long-term-care facilities (Alessi, Martin, Webber, Kim, Harker, & Josephson, 2005) and as part of a sleep hygiene intervention implemented by informal caregivers living with people with dementia in their own homes in the community (McCurry, Gibbons, Logsdon, Vitiello, & Teri, 2003, 2005).
- Although not evaluated independently from other aspects of the interventions (e.g., daily walking or physical activity, eliminating daytime sleeping, light therapy), the interventions have been demonstrated to be effective in the RCTs reported.

Contributions of Qualitative Findings:

- Qualitative studies examining interventions related to sleep routines were not located.

Bottom Line for Occupational Therapy Practice:

Limited evidence is available to support the establishment, maintenance, or modification of routines on the outcomes specified in the focused question. However, the evidence that was found contributes to understanding of routines as an intervention.

The evidence supporting the effectiveness of routines in general is limited and weak, probably because it is difficult to implement routines in a standardized manner to be evaluated using rigorous designs. While some evidence is available to support toileting routines to address incontinence, especially prompted voiding, the links between incontinence and other outcomes (e.g., quality of life, caregiver and client satisfaction) have not yet been explored. The strongest available evidence supports sleep routines as an intervention to address nighttime awakenings as well as improving participation in daily activities and social interactions.

Occupational therapists working with clients with dementia who are having sleep–wake disturbances should work with caregivers in home and long-term-care facilities to implement multimodal interventions that include daily routines of walking or physical activity, finding meaningful occupations to reduce daytime sleeping, light therapy, and implementing nighttime routines. These interventions seem to have the potential to improve nighttime sleep (in the community-dwelling population) and improve engagement in activities during waking hours (for those in community and institutional settings). Occupational therapists can provide contributions by educating caregivers in establishing such routines as part of their scope of practice.

Toileting routines also might be implemented with clients for whom incontinence is a challenge. It is not clear which strategies of timed voiding, habit retraining, or prompted voiding are superior. While the evidence about prompted voiding is the strongest at this point, this intervention can be implemented only with people who are able to respond accurately about their need to void. Depending on the circumstances of the caregivers and clients, each toileting routine might be useful but will need to be implemented on a case-by-case basis until more specific evidence is available to inform clinical practice about which interventions should be implemented under which circumstances.

More generally, although there is sound theoretical support for the notion of establishing and maintaining routines for people with dementia, and qualitative findings support the notion that people with dementia benefit from strategies to address temporal impairments related to scheduling appointments, there is not strong evidence to support the notion that daily routines should be implemented as a standard course of occupational therapy intervention. Further, any routines need to be flexible enough to respond to the reactions of the person with dementia and should not be adhered to in circumstances in which there are negative effects.

Drawing on themes from many studies reviewed, the authors of this review advocate a strong role for occupational therapists in the role of educator/facilitator, both in long-term care and for community caregivers in identifying the most client-centered ways to use routines to positively affect people with dementia and their caregivers. In reviewing the literature, it is apparent (although not always explicitly stated in the studies) that some interventions are focused on routines that serve the needs of the institution or caregivers rather than placing emphasis on routines from the perspective of the person with dementia. There is a continuing need to consider the importance of client-centered occupational therapy practice in relation to routines as intervention, with a focus on occupational performance, quality of life, health and wellness, and satisfaction as important outcomes.

Review Process:

Inclusion Criteria:

Studies were included if they

- Described an intervention based on use of routine, or
- Described responses to the use of routine in the course of daily care, or
- Described interactions during routines or perceptions of routines.

Exclusion Criteria:

Studies were excluded if they described an approach to using routines within a particular clinical setting with no report of data or systematic observations of the outcomes of the use of routines in interventions.

Search Strategy

Categories	**Key Search Terms**
Patient/Client Population	Dementia
Intervention	Activity Patterns OR Schedules OR Routine OR Habit OR Habits
Comparison	Not included in search terms
Outcomes	Not included in search terms

Limits: humans, English language, 1994–2004

Filters were not used on the basis of the expectation of finding few relevant high-quality studies using a narrow search.

Databases/Sites Searched	**Search Terms**
Ageline	Dementia AND (Activity Patterns OR Schedules OR Routines OR Habits)
CINAHL	Dementia AND (Activity Patterns OR Schedules OR Routines OR Habits)
EMBASE	Dementia AND (Activity Patterns OR Schedules OR Routines OR Habits)
HealthSTAR	Dementia AND (Activity Patterns OR Schedules OR Routines OR Habits)
Medline	Dementia AND (Activity Patterns OR Schedules OR Routines OR Habits)
PsycInfo	Dementia AND (Activity Patterns OR Schedules OR Routines OR Habits)
Cochrane Library	Dementia AND (Habit OR Routine)
www.otseeker.com	Dementia
Other	Hand searching of bibliographies from all selected articles

Quality Control/Peer Review Process:

- A research assistant was responsible for conducting all literature searches, after consultation with the principal investigator.
- A research librarian with a specialty in rehabilitation science was consulted to confirm and improve search strategies.
- Review group members discussed the searches and findings to ensure that key articles or areas of research had not been overlooked.

- Either a research assistant or one member of the review group completed the CAP worksheet or Qual-CAP for each article that met the inclusion criteria. A second member then reviewed the article and the completed CAP to look for unanswered questions or discrepancies in interpretation of the results and to ensure that the implications were clear.
- All members of the review group reviewed all of the completed CAPs or Qual-CAPs.
- The CAT was drafted by the research assistant and principal investigator. It was then reviewed by all members of the review group and discussed in a group meeting on two occasions.

Results of Search

Summary of Study Designs of Articles Selected for Appraisal

Level of Evidence	Study Design/Methodology of Selected Articles	No. of Articles Selected
I	Systematic reviews, meta-analysis, randomized controlled trials	7
II	Two groups, nonrandomized studies (e.g., cohort, case-control)	0
III	One group, nonrandomized (e.g., before and after, pretest and posttest)	1
IV	Descriptive studies that include analysis of outcomes (e.g., single-subject design, case series)	0
V	Case reports and expert opinion, which include narrative literature reviews and consensus statements	1
	Qualitative studies	5
		TOTAL = 14

Limitations of the Studies Appraised

- Many of the studies included in the review included multi-modal interventions offered both in long-term-care facilities and community settings. It is difficult then to ascertain the value of routines alone since they were included as one component of those interventions. This is true for all of the studies related to sleep routines, and most of the ones reviewed in the systematic reviews on toileting routines.
- Limited quantitative evidence was located on the use of routines as a general intervention strategy. Qualitative evidence provides insights into the experiences of people with dementia related to temporal impairments, the potential usefulness of time aid interventions, and the risks of adhering to routines without attending to the needs of individuals with dementia.

- A number of qualitative studies, especially those published before 2001, had limitations in the amount of information provided by the authors about the data collection and analytic procedures. This may be a reflection of increasing demands related to trustworthiness and credibility in publishing and better understandings of qualitative research. However, the older qualitative studies need to be interpreted with caution since many limitations in trustworthiness were identified in the critical review of these articles.

Articles Selected for Appraisal

Alessi, C. A., Martin, J. L., Webber, A. P., Kim, E. C., Harker, J. O., & Josephson, K. R. (2005). Randomized, controlled trial of a non-pharmacological intervention to improve abnormal sleep/wake patterns in nursing home residents. *Journal of the American Geriatrics Society, 53,* 803–810.

Donovan, C., & Dupuis, M. (2000). Specialized care unit: Family and staff perceptions of significant elements. *Geriatric Nursing, 21,* 30–33.

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Eustice, S., Roe, B., & Paterson, J. (2000). Prompted voiding for the management of urinary incontinence in adults. *Cochrane Database of Systematic Reviews,* Issue 2. Art. No.: CD002113. DOI: 10.1002/14651858.CD002113.

Gotell, E., Brown, S., & Ekman, S. L. (2002). Caregiver singing and background music in dementia care. *Western Journal of Nursing Research, 24,* 195–216.

Hutchinson, S., Leger-Krall, S., & Wilson, H. S. (1996). Toileting: A biobehavioral challenge in Alzheimer's dementia care. *Journal of Gerontological Nursing, 22,* 18–27.

Kovach, C. R., & Stearns, S. A. (1994). DSCUs: A study of behavior before and after residence. *Journal of Gerontological Nursing, 29,* 33–39.

McCurry, S. M., Gibbons, L. E., Logsdon, R. G., Vitiello, M., & Teri, L. (2003). Training caregivers to change the sleep hygiene practices of patients with dementia: The NITE-AD project. *Journal of the American Geriatrics Society, 51,* 1455–1460.

McCurry, S. M., Gibbons, L. E., Logsdon, R. G., Vitiello, M. V., & Teri, L. (2005). Nighttime insomnia treatment and education for Alzheimer's disease: A randomized controlled trial. *Journal of the American Geriatrics Society, 53,* 793–802.

Nygård, L., & Johansson, M. (2001). The experience and management of temporality in five cases of dementia. *Scandinavian Journal of Occupational Therapy, 8,* 85–95.

Ostaszkiewicz, J., Johnston, L., & Roe, B. (2004a). Habit retraining for the management of urinary incontinence in adults. *Cochrane Database of Systematic Reviews*, Issue 2. Art. No.: CD002801.pub2. DOI: 10.1002/14651858.CD002801.pub2.

Ostaszkiewicz, J., Johnston, L., & Roe, B. (2004b). Timed voiding for the management of urinary incontinence in adults. *Cochrane Database of Systematic Reviews*, Issue 1. Art. No.: CD002802.pub2. DOI: 10.1002/14651858.CD002802.pub2.

Skelly, J., & Flint, A. J. (1995). Urinary incontinence associated with dementia. *Journal of the American Geriatrics Society, 43,* 286–294.

Skovdahl, K., Kihlgren, A. L., & Kihlgren, M. (2003). Dementia and aggressiveness: Video recorded morning care from different care units. *Journal of Clinical Nursing, 12,* 888–898.

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Corcoran, M. A. (2001). Dementia. In B. R. Bonder & M. B. Wagner (Eds.), *Functional performance in older adults* (2nd ed., pp. 287–304). Philadelphia, F.A. Davis.

Lewis, S. C. (2003). *Elder care in occupational therapy.* Thorofare, NJ: Slack.

Nygård, L., & Öhman, A. (2002). Managing changes in everyday occupations: The experience of persons with Alzheimer's disease. *OTJR: Occupation, Participation, and Health, 22,* 70–81.

Ward, J. D. (2003). Psychiatric diagnoses and related intervention issues. In E. B. Crepeau, E. S. Cohn, & B. A. B. Schell (Eds.), *Willard & Spackman's occupational therapy* (10th ed., pp. 835–859). Philadelphia: Lippincott Williams & Wilkins.

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