

Comprehensive Rehabilitation for Older Persons With Dementia

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The profound effects of dementia on a person's ability to participate in rehabilitation services have significant impact on outcomes and overall quality of life. The long duration of the disease process, with some persons living with dementia for more than 10 years, makes it imperative that therapists utilize the existing clinical evidence to modify traditional approaches to the specific needs of this patient population. This article outlines comprehensive modifications for evaluation and treatment to assist with the many challenges therapists face when providing rehabilitation for persons with dementia. Communication strategies, bed mobility, transfers, gait, balance, fall risk reduction, activities of daily living, and pain issues are presented with an evidence-based approach. Also included are clinical expertise, hands-on evaluation, as well as treatment approaches for direct application across all settings. Therapists can achieve positive outcomes with rehabilitation for persons with dementia when utilizing patient-specific communication and approaches. **Key words:** *activities of daily living, ADL's, communication, dementia, falls, gait, mobility, pain, rehabilitation*

OLDER persons living with dementia are one of the most rapidly growing patient populations in the United States.¹ There are currently more than 7 million persons with dementia in the United States, and this number is expected to double in the coming years with the baby boomer population.² This exponential growth presents unique challenges for providing rehabilitation secondary to persons with dementia may have difficulty following instructions for evaluation, decreased participation with traditional rehabilitation approaches, and high variability in patient presentation. In addition, persons with dementia often present with multiple comorbidities, which may exacerbate the symptoms of dementia.³ Communication deficits and behavioral problems add to the challenges. This patient population requires comprehensive modifications in rehabilitative approaches for successful outcomes.

COMMUNICATION

A significant roadblock in providing rehabilitation for persons with dementia is the profound impairment with communication. Once therapists break through this roadblock and connect with the patient, participation and cooperation greatly increases. Therefore, this article begins with a focus on successful communication strategies.

The 3 main functions of communication are the expressions of wants and needs, for information exchange, and for the maintenance of social roles and closeness.⁴ Older persons with dementia often feel frustrated with their inability to communicate their needs, feel embarrassed when they cannot find the right words, and may feel depersonalized when they are treated as though they were not there.

There are several aspects of communication that are preserved for many persons with dementia. These include the ability to correctly interpret and utilize nonverbal communication, maintain normal conversation structure, the need to communicate, social skills, and the use of flattery and humor.⁵

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Therapists can focus on these areas of strength, particularly with increased use and awareness of nonverbal communication. As verbal communication skills diminish, persons with dementia rely more and more heavily on nonverbal communication. They may even become more intuitive and sensitive to emotions.⁶

COMMUNICATION PROBLEMS

Persons with dementia experience numerous communication deficits. It is common for persons with dementia to have difficulty finding words, particularly nouns. They may substitute words, possibly from the same category, such as mother versus daughter. Topic changes are often illogical or they may combine topics. Persons with dementia may repeat words over and over; it is helpful to look for the meaning or emotion behind the repeated words. They may respond literally to signs, revert back to their native or primary language, echo back words or phrases, shout or use curse words, or use words that are meaningless. As the dementia progresses, there is an increased difficulty with both expressive and receptive language, and difficulty initiating speech.⁷

COMMUNICATION STRATEGIES

Nonverbal communication makes up between 55% and 97% of the message in communication.⁵ As therapists, it is critical that we monitor the person's facial expression, eyes, hands, and behaviors to interpret what the feelings are. Therapists must be aware of their own nonverbal communication to be sure that the right message of caring and compassion is conveyed. If a therapist attempts to rush a person with dementia and appears frustrated when they persevere on a task, such as folding a tissue a hundred times prior to using it, the person will read these emotions loud and clear and most likely respond with lack of participation in the task

at hand. This requires therapists to be patient and flexible.

The use of reassuring or caring touch is an aspect of nonverbal communication that can have significant impact on decreasing fear and anxiety, thus enabling a person with dementia to focus on the task at hand. There are different messages that touch can convey, such as caring, compassion, assistance, functional help, safety, and security. Touch may also be interpreted as intrusion, manipulation, irritation, annoyance, or anger. Used properly in a slow and gentle manner with good eye contact, touch can have a powerful reassuring effect.⁵ There are numerous theories on failure to thrive in nursing homes that are related to lack of touch. A study by Eaton et al⁸ found that 5 brief simple touches on the hand during meals could improve nutrition in persons with dementia.

It is important to begin the use of touch gradually, assessing for response.⁵ In the United States, socially acceptable areas to touch are the hands, upper back, arm, and shoulder. It is much more personal to touch the face and avoid any touch that can be misinterpreted as sexual, such as putting an arm around the person's waist or sitting beside them in the bed.

The use of gestures in combination with an appropriate verbal cue and facial expression can also be very helpful. Gesture slowly, and allow increased time for the person to process the command. Some examples of helpful gestures include waving hello or goodbye, pointing your whole hand at yourself as you introduce yourself, indicating a chair or direction for walking, mimicking an activity of daily living, putting your hand under a person's elbow indicating that you would like him or her to come with you, or gentlemen can offer ladies their arm to escort them. If you start out with the awareness that the person with dementia may not understand the verbal aspects of your communication, you will automatically increase your use of gestures and prompts.

In addition to these communication strategies, therapists can focus on understanding

Box 1.

Patient states	Possible meaning or emotion expressed
I want to go home.	Nothing seems familiar here. I feel lost. I am afraid.
I am looking for my mother.	I feel sad or lonely. I need love and affection. I miss my mother.
I need to catch the bus.	I am bored. I need some purpose in my day. I need to do something that is meaningful.
No, I do not want to.	No, I do not understand. I am afraid and I do not know you. I am in pain and cannot tell you.

what the patient is saying, reading between the lines, and looking for the meaning or emotion behind the words. For example (Box 1)⁹:

Cooperation and participation are critical to successful outcomes with rehabilitation services. Looking at the last statement above, “No, I do not want to,” and understanding and addressing other possible meanings to the statement can help therapists to assist persons with dementia to participate fully in rehabilitation and achieve successful outcomes. A common negative outcome that can occur when a person with dementia says “no” is for a therapist to document that the person has refused. As the person is unable to truly weigh the pros and cons of a refusal and understand the future implications, it is preferable to document that the person was unable to participate due to fear, pain, fatigue, communication deficits, or any other issue that the therapist assesses to be the limiting factor in his or her ability to participate.

It is also important to match your level of communication to that of the person, not too simple or complex. Lower your voice tone, speak more slowly, and allow increased time for processing commands. Choose your words carefully; positive versus negative if the patient needs to be redirected.

For example: “Thank you for finding my clipboard,” and then holding out your hand versus “You have my clipboard, give it back to me please.”⁹

Be careful not to ask persons with dementia to recall names or information. This puts them on the spot, embarrasses them, and may decrease their willingness to participate. Use of simple yes/no questions or questions with 2 clear choices are preferable for communication. Open-ended questions or questions with a specific answer are very difficult and can result in frustration. The following are some examples⁶ (Box 2):

It is widely cited in the literature that persons with dementia have difficulty communicating when they are in pain, and thus are at high risk for having significant pain issues that are not recognized and not treated effectively.¹⁰ When asked, “Are you in pain?” the patient may not understand the question and answer the safest answer of “no.” One of the most challenging aspects of this communication deficit are the behavioral problems that frequently occur with untreated pain.¹¹ It is very important to view behavioral problems as a means of communicating a need, and carefully assessing for non-verbal signs of pain. The Discomfort Scale for Dementia of the Alzheimer’s type can be a

Box 2.*Communication examples:*

- A: Simple and facilitative
 B: Complex and requiring short-term memory (STM) recall
- 1A. Did you have a nice lunch today?
(Simple yes/no question)
 - 1B. What did you have for lunch today?
(Question requires significant STM recall)
 - 2A. Hi! My name is . . . it is great to see you again. (Point hand at self as to introduce)
 - 2B. Hi! Do you remember me from yesterday? What is my name? (STM recall)
 - 3A. Would you like to put on this sweater?
(Simple yes/no)
 - 3B. How is the temperature in here? (More complex)

useful functional tool to assess for the nonverbal communication of pain. Behavioral indicators of discomfort included in this scale are noisy breathing, negative vocalizations, facial expressions, lack of relaxed body language, fidgeting, and restlessness. The patient is observed for 5 minutes, with frequency, duration, and intensity of each behavioral characteristic documented.¹²

Caregiver training in communication strategies

Once therapists determine successful communication strategies, the next step is to train the primary caregivers in these strategies. There are numerous studies showing the clear benefit of caregiver training in communication strategies. In a study by McCallion et al,¹³ communication training was given to 66 persons with dementia and their most frequent visitor. After 3 and 6 months, the subjects of the study improved psychologically and had fewer behavioral problems.¹³ In a study by Dijkstra et al,¹⁴ communication interventions were assessed with nursing

home residents with dementia and the nursing assistants assigned to care for them. The intervention group received training in communication techniques and in the use of a memory book. The communication techniques included using short sentences or instructions during care routines, giving positive feedback to the resident when he or she responds to an instruction, giving the resident increased time for processing instructions, talking about the resident's life or hobbies, and avoiding unhelpful questions. The memory books were used as visual prompts for care activities or as a conversational device to talk about the resident's life story. Results from this study demonstrated significant improvement in the intervention group, with higher verbal coherence and less use of empty phrases.¹⁴

When training caregivers, it is important to document that the caregiver is able to give return demonstration of the communication/task and document details of the specific training performed. The treatment billing code is designated to what functional task the communication training is focused on, such as gait, mobility, or activities of daily living (ADL's).

A challenge that is often faced when therapists perform caregiver training for specific communication strategies for persons with dementia is the response from the caregiver that they do not have the time. This challenge was investigated in a study by Burgio et al,¹⁵ which compared caregiving time with a control group of nursing assistants and an intervention group that utilized memory books and communication strategies. Results from the study found that there was no significant increase in caregiving time in the intervention group compared with the control.¹⁵ A study by Ripich et al¹⁶ provides training to caregivers in the following communication strategies:

- Face the person
- To call the person by name
- To orient the person to the topic or activity
- To be specific when talking

- To help when a person cannot find a word
- Offer choice questions

Results from this study found significantly increased number of positive exchanges between persons with dementia and their caregivers and significantly decreased frequency of communication problems.¹⁶

A study by Magai et al¹⁷ investigated the impact of caregiver training in sensitivity to nonverbal emotion signals. Results showed significantly increased positive affect and decreased negative behaviors in the intervention group, with no change in the control group.¹⁷ This study reinforces the importance of being aware of nonverbal communication when providing rehabilitation for persons with dementia. The literature demonstrates that implementing these simple communication strategies with family, visitors, and nursing assistants can have a positive impact upon the success of the communication, and thus result in improved quality of life.

EVALUATION

A comprehensive evaluation is the foundation from which we build upon to demonstrate the need for skilled services and the person's ability to participate with rehabilitation services. Utilizing approach strategies specific for persons with dementia can markedly increase our ability to have a successful evaluation. Part of this process is doing some critical preliminary work by calling a family member prior to the evaluation. It is obviously not always possible to reach family members before the initial evaluation; however, it is still extremely beneficial to have this information as early as possible. This will allow us to gain valuable information that is not often available in the medical record.

Information that is very helpful to ask the family members includes the following:

1. What was the person's prior level of function related to mobility, ADL's, cognition, and communication?
2. Has there been any abrupt change in

the person's mental status or cognition?

3. What were the person's daily routines and schedule, and any preferences that would be helpful for us to know about?
4. Were there any behavioral issues that were often seen at home and what, if any, strategies assisted with these behavioral issues?
5. Therapists can also request some life story details to assist with connecting with persons with dementia, such as their spouse and children's names, where they are from, live now, occupation, and some personal interests or hobbies.

Once we have this information, we can approach the person with a comprehensive understanding of his or her overall prior level of function, routines, behavioral issues, and life story details. Typically, the initial evaluation is performed at the bedside to provide a quiet environment with minimal distractions. It is important to provide a low stimulation environment for evaluation to maximize the person's abilities.⁵ As we approach the person for the initial contact, our nonverbal communication is critical, conveying warmth and compassion. Establishing rapport is a more time-consuming process with persons with dementia because of the high prevalence of fear and anxiety with this population. The use of "therapeutic visiting" is a wonderful and very effective approach to establish rapport.⁹ The therapist visits briefly with the person, talking about his or her home town, family—including key names, and hobbies until the person appears to feel comfortable with you. Typically, this requires less than 5 minutes, but it is time well spent. Once the rapport is established, the person is much more willing to participate in the evaluation process, which can actually save time in the long run. During this brief "visit," the therapist can assess the person's communication skills, positioning, and whether he or she appears to be in pain.

The Montessori theory can also be used as an approach strategy with this population.

The therapist will focus on what the person is interested in doing at the moment, and incorporate this into the evaluation process. This promotes autonomy and dignity and may significantly increase the person's cooperation.¹⁸ Incorporating familiar and functional tasks into the evaluation improves participation.

EVALUATION AND TREATMENT STRATEGIES

The communication and approach strategies discussed thus far can be utilized for both evaluation and treatment of persons with dementia. The following sections will discuss specific challenges with rehabilitation tasks, and provide comprehensive strategies to address these issues. There are significant gaps in the current literature in some of these areas, therefore clinical expertise is provided here. It is the author's hope that there will be more clinical research with persons with dementia to meet the need for comprehensive evidence-based medicine.

BED MOBILITY

Once rapport is established, therapists can then proceed with the evaluation of bed mobility. One of the first challenges a therapist may face with assessing bed mobility is convincing a fearful and confused person to leave the safe haven of his or her bed. Having done all of the preliminary work with a well-established rapport, all that may be required is a simple verbal cue with a gesture, as well as a manual cue with gently moving his or her lower extremity to the side of the bed, thus allowing the heel of his or her foot to come off the side of the bed. Giving the person a functional purpose or reason for getting out of bed may improve the person's motivation and cooperation. For example, having the person get up for a meal, for a visitor, an activity (such as going outside for some fresh air), or to have the bed linens changed. If using changing the bed linens as the purposeful task, it is helpful to have the clean sheets in hand as an appropriate visual cue. Once the person is up and

out of bed, follow through with changing the sheets while he or she rests, or you will lose your credibility. Once the person is sitting on the side of the bed, allow him or her plenty of time to process the new position, observe for signs of orthostatic hypotension, and have some time to physically and emotionally settle down from the effort.

For documentation of the person's abilities, be sure to include not only the level of assistance required but also the frequency and type of cues and amount of time required. Note any fear or behavioral issues and whether there was any apparent pain. Many persons with dementia are very fearful when asked to roll to the side of the bed. They may have improved participation with supine to sit versus side lying to sit. Some persons may have a habitual method that they use to perform their bed-mobility tasks, and therapists need to go with the flow and allow this as much as possible. For example, some persons with dementia utilize a climb and crash method for getting into bed, where they partially crawl into the bed and then crash into side lying. It is very difficult to change these habitual patterns. Modifying the environment can help maximize the safety with this, such as moving the bed against the wall and adding a U-shaped safety rail on the other side.

Treatment strategies for increasing independence with bed mobility include multiple repetitions of the task and therapeutic exercise for upper and lower extremities and the trunk. A therapist can have a person with dementia perform a task sitting at the edge of the bed, and when the person fatigues, let him or her lie down for brief rests. Once the person has rested, the therapist prompts him or her to sit up on the side of the bed again to continue with the task. Familiar and functional tasks that are performed at the bedside should be the activities that would interest the particular person. There is typically a good response to the use of ADL's at the bedside.

TRANSFERS

The evaluation of transfers may also induce fear in persons with dementia, and can be

particularly challenging if pain is a factor. In addition, many persons with dementia who are hospitalized or admitted to a skilled nursing facility are asked to transfer via a stand pivot transfer. Unless they were previously in a wheelchair, this type of transfer may be a completely new task and movement pattern; therefore, it is much more challenging and fear inducing. Start by assessing a simple sit to stand first, allowing the person to get his or her bearings and know what to expect from the therapist. Follow this by having the person turn and then sit in the chair, breaking down the stand pivot transfer into 3 simple steps. This allows the person to process simple commands and have a better chance of succeeding with the task.

Working through the fear and resistance with transfers requires therapists to have significant patience, flexibility, and creativity. For persons with dementia and acute hip fractures, the pain, fear of falling, and difficulty with following commands compromise the person's ability to perform transfers. Transfers may present as the most challenging mobility task. According to a study by Goldstein et al,¹⁹ ADL and gait may have more favorable outcomes. Their study compared functional outcomes of cognitively impaired and cognitively intact persons with hip fractures using the functional independence measure and whether or not the person returned to his or her prefracture living situation. Results found that both groups exhibited similar gains in overall functional independence measure, and there was no difference found in the likelihood to return to prior living situation. However, results found the cognitively intact group had greater gains with transfers.¹⁹

If persons with dementia require physical assistance for a transfer, they may respond by pulling back and resisting. Strategies to address this include taking a break from the task, providing reassurance, increasing nonverbal communication and time for processing, and then re-attempting the task. It is also helpful to allow the persons to get used to the feel of your hands on them prior to initiating the actual transfer. Perhaps saying, "Is it OK if I hold you like this?"

Documentation for sit-to-stand transfers can include level of assistance, initial balance, cues required, safety with hand placement, and clear objective documentation of safety issues and behavioral issues. For the stand to sit, documentation of eccentric control and visual-perceptual deficits are critical due to the high fall risk. Time to perform the transfer should be included if the person required a significant amount of time to successfully complete the transfer.

Documentation example: Patient performed a sit-to-stand transfer with minimal assistance in a low stimulation environment, with increased time to process commands, utilizing a simple verbal cue with a gesture, and a purpose for the task. Patient exhibited signs of fear and required 3 minutes to complete the transfer. Strategies used to reduce the patient's fear and increase participation were reassuring touch, and talking about her daughter Melanie and lunch.

With evaluation of transfers, it is important to go with the flow, thus allowing the persons to perform the task in their habitual manner within the limits of safety. Persons with dementia often perform $\frac{3}{4}$ turns versus $\frac{1}{4}$ turns for a stand pivot transfer. Although not ideal, it is best to go with the flow here versus attempting to correct the person and possibly face a communication barrier in the middle of a transfer. Personal space may be invaded with the stand pivot transfer that requires moderate or maximal assistance. Be sure that rapport is established first. Then communicate to the person that you are going to help him or her now by holding them like this (place your hands in position to assist). If the person appears comfortable, then cue to begin the transfer. There is a possibility for agitation if the wrong approach is used, such as rushing or using complex commands.

Toilet transfers are very important to evaluate as many falls occur in the bathroom²⁰ and the person's balance is challenged with personal hygiene, clothing management, and the turn to sit on the toilet. Participation in toilet transfers is often very good because of the obvious purpose with this familiar and functional task. Documentation needs to

include balance and safety issues, abilities with clothing management and personal hygiene, and the level of assistance required with the transfer on and off toilet.

Car transfers are critical to evaluate for community-dwelling persons with dementia. Difficulty with car transfers is often a factor in admission to long-term care from home because of problems with continuing to go to adult day care centers or to doctors' appointments. Common problems with car transfers include apraxia, visual-spatial deficits, weakness, and difficulty sequencing the complex transfer.^{21,22} Behavioral problems may occur due to persons not understanding where they are going or not wanting to go.

For treatment of transfer skills, repetition of the task can produce significant improvements with strength and activity tolerance. A randomized controlled trial by Schnelle et al²³ investigated using this strategy with 76 severely cognitively impaired nursing home residents. Subjects in the intervention group were prompted by nursing assistants to perform repetitions of functional tasks after each toileting episode. These tasks consisted of 1 to 4 additional sit to stands and 1 to 5 minutes of either ambulation or wheel chair propulsion, as tolerated. The purpose in having the caregiver perform this short program after toileting or changing the person, was to increase staff compliance, as they were already interacting with the person and the program was short (average of 6 additional minutes of caregiving per episode). Results from this study after the 8-week intervention period showed significant increases in the intervention group, with twice the activity tolerance with sit to stands, standing endurance, and ambulation or wheel chair propulsion. The intervention group progressed from an average of 3.4 stands per day to 10 stands per day, no change was observed in the control group. An additional benefit was also noted with observation of agitation decreased from 19% to 9% in the intervention group.²⁴ The theory utilized in this study is very effective with caregiver training and is clinically useful for many

rehabilitation tasks that need to be reinforced by caregivers.

An additional strategy is to incorporate tasks that are stimulating to the senses in conjunction with mobility tasks. This can greatly increase participation as opposed to more traditional approaches to rehabilitation tasks.⁵ The person's life story with previous interests or hobbies can direct therapists on which tasks to choose. Such as performing sorting activities with socks, coupons, cards, a toolbox, or countless other tasks that may also provide some sensory stimulation. For example, reminiscing about gardening while watering a plant and removing the dry leaves, or talking about a recipe while touching and smelling the ingredients (lemons, cinnamon sticks, spices, coffee beans, etc) can be used.

GAIT AND BALANCE

A comprehensive evaluation of gait and balance for persons with dementia is critical because of the high incidence of falls with injuries. Approach strategies for evaluation of gait include utilizing a familiar and functional purpose for the gait activity, incorporating the use of nonverbal communication, and increased time to process commands. Examples of familiar tasks to use include asking the person to help you find something, to go look at some art work on the walls, get a bit of fresh air outside, deliver some mail to the mailboxes, or copy some papers in the copy room. Functional gait requires numerous turns, thus it is critical to incorporate frequent turns during gait tasks. Gait activities in the bedroom, bathroom, and kitchen area are ideal to mimic functional gait tasks. These strategies make the task interesting to the person with dementia, as opposed to walking straight up and down the hall for exercise or to "get better" when they may not have the insight that they have any deficits.

Once the person with dementia agrees to perform gait tasks, the therapist needs to utilize objective measurement tools. However, many of the available functional tools have

Box 3.*Strategies for successful use of functional tools with persons with dementia²⁶:*

- Provide increased time to process commands
- Use gestures and other visual cues to increase ability to follow commands
- Perform test in a quiet, low stimulation environment
- Allow plenty of rest between challenging tasks
- Monitor closely for fear
 - Reassure the person with verbal and nonverbal communication
 - Include reassuring touch
- Give a purpose for the task incorporate test components into a familiar task
- Avoid documenting in front of the person

not completed validity testing for persons with dementia. Utilizing the evidence-based medicine model,²⁵ therapists must integrate their clinical expertise with the existing tools and assess whether the person with dementia that they are evaluating is able to follow the instructions for the tool (Box 3).

The Tinetti Assessment Tool is a balance and gait assessment tool for the elderly that lends itself readily for use with this population. This test can be performed with or without an assistive device. The tool evaluates 16 gait and balance variables with scoring on 0 to 1 and 0 to 2 scales. The maximum score on this tool is 28, a score above 24 indicates low fall risk, a score between 21 and 24 indicates one-time fall risk, a score between 19 and 21 indicates moderate fall risk, a score below 19 indicates high risk for falls, and a score below 14 indicates risk of recurrent falls.²⁵

Specific strategies for utilizing this test with persons with dementia include giving the sternal nudge last, use of reassuring touch when the person closes his or her eyes—make sure your touch is light and the person is not balancing by leaning into your hand, and for rapid gait, cue the person to walk faster as if they were walking to answer a ringing

phone or as if someone was knocking on the door.

The Gait Assessment Rating Scale (GARS) is another excellent tool to objectively evaluate gait without an assistive device. The short version of the GARS evaluates 7 gait variables, including gait variability, guardedness, staggering, hip range of motion during the gait cycle, initial foot contact, shoulder range of motion during the gait cycle, and arm-heel strike synchrony. The person is scored on the basis of a 0 to 3 scale, with 0 being within normal limits for gait and 1, 2, and 3 with increasing deficits. The maximal score on the GARS is 21, a score greater than 8 indicates fall risk.²⁷ This functional tool is a relatively simple observational tool that provides excellent objective data on gait, and is very easy to utilize with this population. Comparatively, the Tinetti Assessment Tool is often the preferred tool due to the focus on gait and balance, as well as the person being able to use an assistive device.

The Berg Balance Test is a task performance tool that can be utilized for higher functioning elderly persons. This tool evaluates 14 mobility and balance tasks, with scoring based on a 0 to 4 scale.²⁸ Maximum score on the Berg Balance Test is 56, and a score below 45 indicates a fall risk.²⁹ This test is often utilized to demonstrate the need for rehabilitation services for a higher functioning ambulatory person with dementia who is at risk for falls. These persons may be able to pass the Tinetti Assessment Tool, yet will score below 45 on the Berg Balance Test.

Specific strategies for utilizing the Berg Balance Test with persons with dementia include breaking up the test into 2 or 3 parts because of the length of time it can take to complete the test (15–20 minutes). When they are standing for 2 minutes, it may be necessary to distract them through talking about their life story details or use of music, using reassuring touch when their eyes are closed, and reaching for an object for the reaching task. The most challenging items on the test include retrieving an object from the floor, placing alternate foot on a stool, standing with one foot in front, and standing on one foot. These tasks

may induce significant fear and resistance in a person with dementia. Strategies include allowing rest in between each of these challenging tasks, do as an “exercise” with music, and perform the task alongside the person for parallel visual cuing. Many persons with dementia will perform challenging activities when they are unsupervised, such as fidgeting with something on the floor or attempting to step way over a crack in the floor due to visual-spatial deficits (lifting up the swing extremity very high—producing a single limb stance task). The Berg Balance Test addresses these high level balance tasks and provides excellent objective data on the persons overall balance.

Any functional tools that are timed are difficult to use accurately with persons with dementia because of delayed processing of commands, perseveration, fidgeting behaviors, and decreased attention span. These tests are not recommended for use with persons with dementia because of no current normative data available that allows for the potential increased time required to complete the tasks.

Once a therapist has evaluated the persons gait and balance, it is also important to document as objectively as possible a description of the persons’ safety awareness, such as actual observations of any of the following:

- Lack of awareness of the need for assistance
- Lack of awareness of fatigue or knowing what to do if feeling fatigued during gait or ADL’s
- Sitting before reaching chair and missing
- Problems identifying proper use of items
- Fidgeting behaviors

These safety awareness problems are often compounded by sensory deficits, hallucinations, agitation, anxiety, and fear, and may significantly increase the person’s risk of falling.

Treatment strategies for gait include comprehensive range of motion and strengthening of the lower extremities, balance activities, gait activities, and caregiver training. For many persons with dementia, lack of ankle dorsiflexion contributes to their risk of falls,

and needs to be addressed.³⁰ The use of moist heat, gentle calcaneal joint mobilizations, and a prolonged (30–60 seconds) stretch to increase dorsiflexion is beneficial. While persons with dementia are being stretched, monitor closely for nonverbal signs of pain, discomfort, or restlessness to assess their response to the stretch. Using distraction methods is also helpful, talking about their life story, use of music, etc.

Therapeutic exercise for the lower extremities is more successful in a quiet environment, done in standing if possible, with increased use of visual cuing and increased time to process commands. For performing long arc quads in sitting with weights, the use of a parallel visual cue is more effective as opposed to sitting in front of the person to demonstrate the exercise. To utilize this approach, the therapist or assistant sits beside the person and provides visual cues with the extremity on the same side. A verbal cue that helps to improve the quality of exercise (full range of motion and slow eccentric lowering) is to cue the person to follow your leg as you slowly raise and lower your leg. Persons with dementia require constant supervision and cuing during therapeutic exercise for good quality exercise. Similar strategies are effective for performing upper extremity therapeutic exercises to improve ADL’s with the use of repetitions of functional tasks, and exercise with weights and parallel visual cues.

Balance activities to assist with improving safety with gait can induce fear in persons with dementia, particularly if they have a history of falling. Using familiar and functional tasks to challenge balance is a strategy that can assist in reducing fear and improving participation. It is important to utilize age-appropriate tasks for balance activities and tasks that would be of interest to the particular person. Examples include straightening up their room, making the bed, gardening activities in standing, and ballroom dancing with Big Band Era music. Dancing is an activity that many elderly persons enjoyed in their lifetime. Female therapists and assistants should lead their female patients by holding up their

left arm and putting their right hand on the person's shoulder blade. If closer guarding is needed, a therapist can hold the person's belt or gait belt. Male therapists and assistants leading female patients would use the same dance position. Female therapists and assistants dancing with male patients should allow the gentleman to lead. Therapists or assistants would hold up their right arm and place their left hand on the gentleman's shoulder blade or belt. Documentation of dancing activities for balance should be described as dynamic standing balance activities with side stepping, turning, backward stepping, and weight shifting.

Strategies for gait training for persons with dementia include the following:

- Use of multisensory cues and repetition to decrease gait deviations and become familiar with an assistive device
- Caregiver training to continue with cues to decrease gait deviations and maximize carry-over
- Use caution not to overstimulate with cues
- Need a purpose for the gait activity
- Closely monitor for nonverbal signs of pain or fatigue

Typical gait deviations seen in persons with Alzheimer's disease include decreased step length, step height, cadence, and heel strike, visual-spatial deficits, decreased arm swing, flexed posture, a wide base of support, and difficulty with turning.³¹ Difficulty with turning is a strong indicator of fall risk, especially with unexpected turns. This difficulty is indicated by an increased number of steps to complete a turn, lack of pivot, and more time to complete a turn.³² These indicators can be used for objective description of a person's safety with turns.

Persons with dementia with Lewy bodies will present with significant Parkinsonian gait patterns. This can be addressed through traditional approaches for Parkinsonian gait, with the addition of the communication strategies and approaches for persons with dementia. Additional focus on trunk flexibility, relaxation breathing, heel strike, and

weight shifting is important with this type of dementia.^{33,34}

For persons with vascular dementia, typical gait deviations may include decreased cadence, discontinuous gait pattern, decreased step length, poor heel strike and foot clearance (may be unilateral or bilateral), difficulty with turns and sequencing while approaching a chair, and gait changes when going through doorways. A study by Mickelborough³⁵ found significant improvement with gait disorders in vascular dementia after a 4-week physiotherapy program. Treatment focused on gait initiation and turning, posture, and balance.³⁵

FALLS AND PERSONS WITH DEMENTIA

Persons with dementia have significantly increased risk of falls, as well as injuries from falls, compared with cognitively intact elderly persons.³⁶

Recent statistics for falls and cognitively intact elders are as follows^{37,38}:

- A quarter to one third of community-dwelling elderly fall each year.
- One half of institutionalized elderly fall each year; 24% of these falls are related to weakness and gait problems.
- Four percent to 6% of falls result in fractures.
- Fifty percent of fallers are unable to get up, which is associated with functional decline and mortality.
- Twenty-five percent of fallers limit their activity due to fear of falling again.

Persons with dementia have a risk of falling that is 2 to 3 times higher than cognitively intact elders. Annual incidence of falls for persons with dementia is 40% to 60%. Serious injury rate is significantly higher than cognitively intact elders at 3 times the fracture incidence; with 11% to 25% of persons with dementia who fall sustain a fracture.³⁶ Fall prevention is key to prevention of injuries, fear, and remaining in the community as long as possible. Falls are strongly correlated to admission to nursing homes for long-term care. A study by Shaw and Kenny³⁹ investigated the

complex question: Why do persons with dementia fall? The subjects in this study were 30 postfall community-dwelling persons with dementia. Results found that frequently multiple factors are involved in falls, some of which are preventable and/or treatable. Factors contributing to falls for community-dwelling persons with dementia included the following:

- Ninety-three percent had significant abnormalities of gait and balance.
- Thirteen percent had environmental factors contributing to the fall that would benefit from home-safety evaluations.
- Fifty-three percent had cardiovascular disorders with endurance and fatigue issues that would benefit from treatment to increase strength and endurance and behavioral management for wandering. Medical management of orthostatic hypotension and syncope were also indicated in multipronged approaches to fall prevention.

In a study by Tinetti et al⁴⁰ on risk factors for falls with community-dwelling elderly, 927 subjects with an average age of 80 were followed for a 1-year period. Results indicated that falls, incontinence, and dependence with mobility were strongly correlated with upper and lower extremity weakness. Impaired cognition with scores less than 20 on the Mini-Mental State Examination correlated with falls, incontinence, and dependence with mobility. However, the correlation was not as significant as upper and lower extremity weakness.⁴⁰ Once persons with dementia have had a history of falling, the fear of falling presents as a significant challenge with their participation in rehabilitation services. A study by Franzoni et al³⁸ investigated the fear of falling in nursing home residents. Subjects were 54 mobile nursing home patients with mean age of 82, with and without complaints of fear of falling. At the 24 months follow-up, fear of falling was predictive of decline in ADL's and lower scores for the Barthel Index and the Tinetti.³⁸ Much of this decline may be due to significant resistance to standing and gait activities because of the fear of falling. Thus, therapists need to carefully monitor for

verbal and nonverbal communication or signs of fear, and provide as much reassurance as possible with touch, facial expressions, increased time for mobility tasks, use of soothing music, or cues for deep breaths for relaxation effects.

If a person with dementia is extremely resistive in making an attempt to ambulate because of fear, it is often helpful to perform maximally protected standing activities first, such as standing at a rail facing a wall with a sturdy chair behind the person and the therapist to one side. This can be gradually progressed to holding a parallel bar and then a walker, while performing weight shifting or marching activities. Once the person's fear appears to have decreased, the therapist can progress to gait activities. At times, the person with dementia is willing to ambulate using a device, but may stop after a very short distance due to fear, saying, "I can't!!!" A strategy that may help with this is temporarily going to hand-held assist of 2 persons to decrease fear, progressing to hand-held assist of one, and then back to using the assistive device once fear is decreased.

There are numerous studies demonstrating successful strategies to reduce falls with persons with dementia. A study by Booth⁴¹ implicated home environmental hazards as a large contributing factor for falls with persons with dementia. Modifications to address the following home environmental hazards were recommended: lack of hand rails in the bathroom or on stairs, inadequate lighting, excess clutter, legs of coffee tables, throw rugs, and objects around the bed.⁴¹ In a randomized controlled trial by Campbell et al,⁴² psychotropic medication withdrawal for fall prevention was investigated. Subjects were 93 community-dwelling elderly, taking psychotropic medications. Intervention consisted of a gradual withdrawal of psychotropic medications versus the control group continued to take the medications. Results were a significant decrease in falls in group members who had stopped taking the psychotropic medicines.⁴² The rehabilitation implication with this study is teaching caregivers nonpharmacological

alternatives to managing the behavior or mood disturbance that triggered the use of the medication in the first place.

A randomized controlled trial on elderly people with severe dementia by Pomeroy⁴³ investigated the use of multifactorial intervention for fall prevention. Intervention consisted of treatment of orthostatic hypotension, impairments of gait and balance, change of medications implicated in falls, and modification of environmental hazards. Results were a significantly decreased number of falls in intervention group by 31% at the 1-year follow-up.⁴³

Despite addressing the multifactorial risks of falling, persons with dementia remain at high risk for falls. From a rehabilitation standpoint, the least restrictive environment is critical for quality of life. There is a philosophy of “the right to fall” that should be considered with persons with dementia, as opposed to immediately moving to the use of physical and/or chemical restraints. With fears of injuries and subsequent liabilities, health professionals often tend to proceed quickly to the use of restraints. As rehabilitation therapists, it is our role to advocate for persons with dementia to have the least restrictive environment to allow maximum independence and quality of life. To facilitate this approach, it is important to first obtain family informed consent for the decision to allow the person to be mobile despite the person’s risk for falls (Box 4).

The list of negative effects of physical restraints⁴⁴ needs to be explained to the fam-

Box 4.

Negative effects of physical restraints Increased agitation Increased depression and/or anxiety Contractures Incontinence Decubitus ulcers Dehydration and decreased appetite Risk of injury from device, or attempt to remove or get out of device
--

ily member or power of attorney when making a truly informed consent for whether or not to use restraints.

The next step is to attempt to prevent the person from falling and sustaining an injury. Strategies for this include use of hip protectors,⁴⁵ soft helmets, appropriate rest periods, supervision during particular times of the day when the person tends to fall, therapeutic exercise, balance training, and caregiver training. Also to anticipate the person’s needs, particularly for toileting, the environment, and the need for meaningful activities. If a person with dementia (who is at risk for falling) is making an attempt to get up without assistance, it is helpful to train caregivers to try to determine the reason they are trying to get up, and then address the person’s needs. For example:

- Need to use bathroom, hungry, fearful, bored
- Restless: Take for a short walk or propel around in wheelchair
- Pressure relief: Allow standing for a few moments or taking a short walk
- Sensory overstimulation or understimulation, change of environment, meaningful activity
- Periodic removal of restraint with visitors and during supervised activities or meals

Documentation for use of physical restraints

It is important to document that there were previous attempts at restraint alternatives. After other seating and positioning measures have been tried, a restraint may still be required because of significant safety issues and lack of awareness of need for assistance. Documentation should include as much objective data as possible, justifying the need for a restraint.

Documentation examples for restraint free and use of restraint are as follows:

Example 1: Restraint free

The family member or power of attorney has been informed of risks and benefits of the use of restraints, and has made the following

decision:

- The family member is fully aware of patient's fall risk due to . . . and has made an informed decision for the patient to have the least restrictive environment without the use of a restraint to allow maximal independence.
- Safety measures that will be implemented to decrease risks of fall or injury from falls include the following:
 - Patient to wear hipsters to reduce risk of hip fracture
 - Toileting schedule. . .
 - Meaningful activities. . .
 - Increased supervision at . . . time due to restlessness and increased confusion at this time of the day

Example 2: Use of a restraint

The family member is aware of benefits and risks of restraint use, including negative effects on appetite and mood, risk of contractures, skin breakdown, incontinence, and risk of injury from device or attempt to get out of device. Family member (name) has given an informed consent for the use of . . . device secondary to the patient's decreased awareness of the need for assistance and fall risk due to. . . .

The following measures will be taken to decrease negative effects of restraints:

- Release and reposition every 2 hours.
- Toileting schedule.
- Periodic release of restraint during supervised activities, meals, and family visits.
- Functional Maintenance Program to include . . . to decrease risks of contractures and decline in function.

ACTIVITIES OF DAILY LIVING

Activities of daily living for persons with dementia should be viewed as the meaningful activities.⁶ These tasks are familiar and functional, and provide significant opportunities for the person with dementia to succeed and have moments of dignity and autonomy. However, many persons with dementia exhibit significant behavioral problems with ADL's due

to communication problems, pain issues, being rushed, or lack of autonomy. When evaluating ADL's with persons with dementia, it is helpful to assess and document the following:

- Ability to perform complex tasks
- Attention to task
- Amount of time required to perform task
- Number or frequency of cues required
- What type of cues required?
- Sensory problems
- Pain limitations

Agitation and fear issues are common with ADL's and require extensive assessment of triggers or causes of behavioral problems. This assessment does require the skills of a therapist and can greatly impact quality of life. If a person with dementia becomes agitated during ADL's, the next step should be a referral to rehabilitation services prior to chemical restraints being used. The therapist will assess for possible triggers for the agitation, such as pain, communication problems with the persons and their caregiver, fatigue, environmental issues, autonomy issues, such as lack of choices on what to wear, what to eat, or what to do during the day. A study by Kovach¹⁰ investigated addressing physical and affective pain to reduce agitation for long-term care residents with dementia. Using the Assessment of Discomfort in Dementia Protocol, this study found a highly significant reduction in behavioral problems with the use of nonnarcotic pain relievers.¹⁰ This demonstrates that pain management decreases behavioral problems with ADL's, as opposed to using stronger psychotropic medications with a much higher risk of side effects.

Treatment strategies for ADL's include extensive caregiver training on effective communication and prompting, closely monitoring nonverbal communication, focusing on the person's abilities, offering simple choices, upper extremity therapeutic exercise, and use of sensory bridging.⁹ *Sensory bridging* is described as providing a sensory cue to orient the person to the ADL's task.

This strategy allows persons who are no longer able to do a task to feel that they are participating. For example, having a person to

hold a warm washcloth during bathing or having him hold an electric razor that is turned on while being shaved. Providing simple one-step verbal prompts with increased time to process the command can significantly reduce the time and assistance it takes to perform an ADL's task.⁴⁶

CONCLUSION

Therapists and assistants can achieve positive outcomes with rehabilitation for persons

with dementia when utilizing specific communication and approaches. Providing rehabilitation services for persons with dementia can make significant improvements in quality of life and is critical due to the lengthy duration of the disease process. By utilizing the most recent clinical research in combination with clinical expertise, therapists can be more comprehensive in their evaluation skills and treatment approaches when providing rehabilitation services for persons with dementia.

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