Sensory and Nurturing Nonpharmacological Interventions for Behavioral and Psychological Symptoms of Dementia

By: Suzanne Fitzsimmons, Beth Barba, Maria Stump

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Abstract:

This article is part three of a four-part series addressing the use of nonpharmacological interventions in place of or in conjunction with psychotropic medications in older adults with cognitive impairment. Acquiring a better understanding of the mechanics for how each intervention works makes selection of an intervention easier at the time it is needed. Selection of the appropriate nonpharmacological intervention is based on person-centered care and how to adapt and implement it for each individual. Selection also depends on target behavior, behavior triggers, and the physical and cognitive functioning of the individual with the behavioral and psychological symptoms of dementia. Nonpharmacological interventions can be implemented by all staff members, not just recreational and activity personnel. The Centers for Medicare & Medicaid Services initiative would like to see all staff involved with these interventions, which can be implemented on the spot, as they are needed, to prevent, reduce, or stop a particular behavior. The current article will describe sensory and nurturing interventions, present the evidence supporting their use, and provide information on effective implementation.

Keywords: Nonpharmacological Interventions | Dementia | Older Adults

Article:

Staff working with the aging population are aware of how challenging it can be to work with older adults who have cognitive impairments, especially older adults who exhibit behavioral and psychological symptoms of dementia (BPSD). Psychotropic medications have been the mainstay for controlling such symptoms (Borisovskaya, Pascualy, & Borson, 2014) for the benefit of staff or others and not necessarily for the benefit of the older adult. Many older adults may have an extensive medication list to treat other disease processes. Over time, techniques have been developed to manage BPSD in conjunction with medications or, in some cases, without medications. These techniques include developing a trusting relationship with the older adult,

altering the environment, and using good communication skills to divert the attention of the older adult, therefore changing the situation and the behavior. However, no matter how skilled an individual is, strategies used to calm an agitated older adult may not always be effective in every situation. Having a toolbox of different nonpharmacological interventions can be helpful and empowering. A common barrier to staff implementation of these interventions is the belief that they require more time to carry out than simply medicating the patient. When a behavior is addressed as soon as it is identified, it is less likely to accelerate into full aggression.

The current article provides evidence and protocols for some quick, easy, and inexpensive interventions that nurses can use to prevent, lessen, or eliminate certain behaviors and decrease the use of medications. It also offers tips on the selection of interventions. These interventions can be used by any staff who may interact with older adults to mediate the majority of BPSD. Currently, many strategies are available for use; therefore, the current article will (a) focus on strategies that are sensory or nurturing in nature and (b) provide staff with information on how to engage patients in a diversional or active-engagement activity based on their specific profiles, with consideration to their behavior and needs. As with any intervention, all strategies will not work the same way with all individuals. In addition, an intervention that worked well with an individual once may not work as well the next time with the same individual. If resources, time, space, equipment, or ability to perform the interventions as described are lacking, these strategies can be easily adapted.

What Are Nonpharmacological Interventions?

Nonpharmacological interventions are strategies used for the purpose of preventing, reducing, or eliminating behaviors without the use of or in conjunction with pharmaceutical agents. These interventions are based on the specific needs, preferences, and functional abilities of the older adult (Cohen-Mansfield, Libin, & Marx, 2007; Janzen, Zecevic, Kloseck, & Orange, 2013).

Why are these interventions different from others currently used in nursing facilities across the United States? These interventions are designed to be used to prevent or lessen a behavior on the spot. These interventions are readily accessible and are used when needed by nursing staff. The interventions may be used when a nursing assistant is attempting to get a resident into the bathroom and the resident is resisting; when a resident is up in the middle of the night and refuses to get back into bed; or when a staff member walks by a resident and observes symptoms of anxiety.

Before selecting an intervention, nurses need to know the older adult’s personal preferences; social history; and cognitive, physical, and social abilities, which can be accomplished by talking with the older adult, his or her family, and other care staff and disciplines. Nurses should avoid activities that the older adult finds difficult, frustrating, or boring. It may be necessary to consult with the facility’s recreational therapist to select and adapt an intervention so it is personalized to the specific resident.

It is important for staff to document the use of a nonpharmacological intervention. Documentation should include the intervention used, the number of failed or successful attempts, and intervention outcomes so others can learn from these experiences. Successful interventions and outcomes should also be included in an older adult's plan of care and relayed to family members and other disciplines (**Table**).

Table: Summary of Sensory and Nurturing Nonpharmacological Intervention

TABLE

SUMMARY OF SENSORY AND NURTURING NONPHARMACOLOGICAL INTERVENTIONS

Nonpharmacological Intervention	Use for	Quick Tip
Music	Calming, alerting, anxiety	Individualize the music to the individual. To calm, use a quiet setting, with earphones if possible. For alerting, a small group setting works well.
Simple Pleasures polar fleece hot water bottle	Calming individuals who call out, anxiety, fearfullness	Works well when placed on the lap as a preventive measure. Use warm tap water.
Simple Pleasures hand muff	Calming, restlessness, picking, anxiety	Try using when individual is having a procedure performed. Can bring in the bath. Place the individual's name on it for infection control.
Simple Pleasures home decorator book	Apathy, boredom, anxiety	Good intervention for families to use when visiting and for low functioning individuals.
Hand washing	Calming, restlessness, anxiety	Stay with the individual to avoid spillage. Good for before meals.
Dolls	Calming, restlessness, concern for family	Assess individuals reacting to the doll before offering. Good intervention for procedures, doctor visits, and personal care.
Massage	Calming, restlessness, anxiety, needing personal touch	If requested, use hypoallergenic lotion. Assess skin area and start slow. Try starting with hands or feet.
Reminiscing	Apathy, anxiety, sadness, wanting family or the past.	Use open-ended prompting questions to encourage participation. Best done one-on-one.

Sensory Interventions

Sensory interventions use various modalities that affect one or more of the five senses. It has been postulated that some behaviors arise from a sensory imbalance (i.e., sensory overload or sensory deprivation), which leads to a lower stress threshold (Chung, Chan, & Lee, 2007). Providing the appropriate sensory intervention when behavioral symptoms arise may correct a sensory imbalance. The sensorimotor area of the brain maintains capabilities long after other abilities are gone, making nonpharmacological interventions excellent choices for older adults who are very low functioning. These interventions can be equally as useful for those at all cognitive levels. Sensory interventions can range from costly Snoozelen Rooms to inexpensive song singing.

Music

Music has a personalized emotional impact on older adults and is profoundly linked to personal memories. Reactions to music can be calming, annoying, exciting, emotionally upsetting, or an array of other emotions depending on the individual. Selecting music requires more than playing music from the era of the listener. Staff must take into consideration the behavior the older adult is presenting, his or her personal history, and the goals staff are trying to accomplish. For example, staff members would not want to play patriotic marching music for an older adult who wanders. *White noise*, which is a repetitive sound such as rain or birds calling, can be soothing, or it may be confusing and/or annoying. Staff should listen to the songs themselves to determine the emotion that the music evokes in them to help select what music will be used with the older adult when he or she feels anxious or agitated. Despite taking these steps, music may bring back negative memories associated with a song. It is recommended that staff have several selections from which to choose.

It is not a good idea to simply play music throughout the unit without knowing the residents on the unit. For some, music may be annoying or overstimulating, or it may create hearing difficulty for those with hearing loss. Staff should use headphones, especially with those with decreased hearing, to prevent disturbing others. Staff can play a few bars of the music and observe the older adult's response to determine if it is something he or she will enjoy. After setting a resident up to listen to music, staff should always return to determine its effectiveness and check to see if the music has stopped playing.

Individualized music has a considerable amount of evidence to support its use. An evidence-based meta-analysis of 19 music intervention studies that examined resistance to personal care found a significant reduction in resistance-to-care behaviors (Konno, Kang, & Makimoto, 2014). A qualitative study examined the difference between no music, background music, and caregiver singing. Researchers noted that background music and caregiver singing increased the older adult's mood and decreased aggressiveness (Götell, Brown, & Ekman, 2009). In a 20-week clinical trial of music therapy versus education or entertainment, those in the music therapy group presented significant decreases in delusions, agitation, anxiety, apathy, irritability, motor restlessness, and nighttime disturbances (Raglio et al., 2008).

Some tips for using music include using soft music, such as classical music, at bedtime or when the older adult is anxious or upset. Upbeat music, such as the "Boogey Woogie Bugle Boy" or "Stars and Stripes Forever," is good for those with apathy; however, some of these songs may be too stimulating or irritating, or they may trigger bad memories. "You are My Sunshine" is a good song for apathy or sadness, but some may find it childlike. "Amazing Grace" is a moving song, especially for those with strong spirituality bonds; however, for others, the song may bring feelings of sadness or grief.

The human brain is hardwired to connect music with long-term memory. Songs with a connection to important personal events can trigger the memory of lyrics. It is thought that music may calm chaotic brain activity and enable the listener to focus on the song and not the displayed behavior. Singing to or with an older adult can be helpful for those resistant to personal care or those who do not wish to move from one area to another. Just like selecting music to play, staff would determine the song an older adult would like to sing or hum. If using singing for personal care, handing a wash cloth to older adults while singing helps cue the activity. If an older adult is resistant to getting up out of a chair or bed, staff should start singing the song, and when the older adult joins in, the staff member should extend his or her hands and help the older adult up.

Simple Pleasures

Simple Pleasures (Buettner, 1999; Colling & Buettner, 2002) consists of multilevel, sensorimotor, age-appropriate activities. The researchers used volunteers to fabricate recreational items for nursing home clients with dementia. They tested the appeal of these sensory items, the impact these interventions had on behaviors, and the number and lengths of nursing home visits by a family member. Each Simple Pleasures item demonstrated beneficial properties for specific types of clients. Behaviors were significantly reduced, and nursing home visits by family members increased by 75% during the intervention period.

The researchers developed more than 20 items that can be handmade by volunteers and provided to nursing homes. Senior citizen groups, girl and boy scouts, school children, college students, and other groups find these items easy to make, and much of the materials are often donated by local businesses. This highly successful project produced a training manual, which includes teaching the volunteers about dementia, how to interact with an individual with dementia, and how to make the items; it has been translated into five different languages and is free of cost. The book may be downloaded, as well as many of the other instructional New York state dementia program projects, from the New York State Department of Health Edge Web page (access https://www.health.ny.gov/diseases/conditions/dementia/edge/interventions/index.htm), or requested from the lead author (S.F.) of the current article.

In addition to preliminary research, Watson (2005) implemented Simple Pleasures in a long-term care facility. Reports by both residents and staff indicated an improved atmosphere on the unit and that Simple Pleasures was being used to manage behavioral problems with reported success. A pilot study of hospitalized patients resulted in a positive response to the education and provision of interventions, which led to a hospital-wide dissemination of the interventions in the form of an activity box. No adverse effects of the interventions were found, and some patients experienced a significant decrease in agitation and use of sedative medications after exposure to the interventions. Hospital lengths of stay were shorter than expected and may have also been influenced by the intervention (Wierman, Wadland, Walters, Kuhn, & Farrington, 2011).

The importance of age-appropriate activities was studied by Buettner (1999) by examining the differences of age- or stage-appropriate activities compared with control activities. The researcher speculated that because the age- or stage-related activities were selected based on individual leisure interest and abilities, leisure interests may be the more significant factor in choosing an intervention. The first of three activities reported are from the Simple Pleasures project.

Simple Pleasures Polar Fleece Hot Water Bottle. The Simple Pleasures hot water bottle is a simple intervention that is effective for calming those with repeated verbalization, pain, or sleep disturbances. Filling the bottle with tap water will ensure that the bottle will not be too hot for the individual. The warmth and pressure from the weight of the water has a calming effect, whereas the soft fleece cover feels good to the touch. It is best to place the bottle on the lap or abdomen of the older adult while he or she either sits or lays down. The older adult will usually automatically wrap his or her arms around it, thus allowing the sensations of both heat and pressure for calming. Staff should ask the older adult if he or she would like to hold something warm and cozy and then place the bottle on the older adult's lap. This intervention has been found to be successful for older adults who exhibit loud vocalizations, especially if it is placed on their laps when they first start vocalizing. If the older adult says no, staff need to try a different intervention. The polar fleece hot water bottle showed significant reduction of nonaggressive verbal and motor behaviors and was most effective if the hot water bottle was provided immediately after the vocalizations began (Buettner, 1999).

Simple Pleasures Hand Muff. The Simple Pleasures hand muff has a satin-like fabric on one side and a fleece fabric on the other side for varied sensory experiences. Muffs were popular during World War II; therefore, many older adults are familiar with them. The muff is a good item to use for those who fidget, those who are restless, anxious, rubbing, picking, pinching, or those who are having a procedure or personal care performed (Buettner, 1999). Muffs can even be brought into a shower or bath. Staff should show the older adult different muffs and ask which one he or she likes best. They should demonstrate putting their hands in it and ask if the older adult would like to try it. Staff may then ask, "Does it make your hands warm? Would you like to keep it? Did you ever have one in the past?" To maintain infection control, a muff can be personalized to a particular individual by putting the resident's name on it. If the device will be used by multiple individuals, muffs can be washed at the end of each shift. It is a good idea to have two muffs available for a resident; that way, one is available while the other is being laundered. Researchers noted that 40% of participants chose the muff. Participants' average Mini-Mental State Examination (MMSE) score was 4.5, and they spent approximately 40 minutes using the muff (Buettner, 1999).

Simple Pleasures Home Decorator Book. The home decorator book is another item from Simple Pleasures and is good to use with residents with sensory needs to touch. It is a large handmade book made from poster board that has been folded in half. A theme is pictured on the front, such as a living room, patio, kitchen, or other themes may include pets or clothing. Samples of carpet,

flooring, paint chips, wall-paper, fabric, and related pictures are attached inside. Buettner (1999) found the book to be effective for sadness and weepiness, as well as for women asking to go home. It was also found to be a good intervention for family members to use when visiting. Often, families do not know what to do during visits, especially when behaviors arise or if their loved one is in the low to moderate stages of dementia. The book is popular with residents, with an average MMSE score of 6.1 (Buettner, 1999). Home decorator books (Buettner, 1999) were found to be useful, as they increased opportunities to talk about the individual's home and reduce weepy and sad behavior. Staff should hand the book to the resident, sit down nearby, and begin discussing the different fabrics, paint chips, flooring, pictures, and textures within the book. They should encourage the resident to touch the different textures while they ask questions. It is important to take into consideration the older adults' specific interests. Staff should determine the older adult's interest and have a book made especially for him or her. Family members are good volunteers for making these books, in addition to the books being made in an intergenerational program with children and older adults with higher cognitive levels.

Hand Washing

Water, especially warm water, has a calming effect on most individuals; therefore, it is a good modality for those with anxiety, fear, and mild agitation (Buettner & Ferrario, 1997/1998). It is almost irresistible to avoid putting one's hands into a basin of water. The water should be tested to ensure it is not too hot. This intervention is good right before meals, bedtime, or personal care. A basin, aromatic soap, a wash cloth, and a towel are all that is required. Staff should bring in a basin, place it in front of the older adult, and encourage hand washing in the basin. They should monitor the older adult when performing sensory hand washing to make certain he or she does not splash and get him- or herself wet, dump the water over, or attempt to eat the soap. Staff should ensure the older adult does not have any skin sensitivity or open sores on the hands that may require special care. A mild, unscented soap should be used if skin sensitivity or concerns about allergic responses exist. This intervention is good for individuals who are resistant to bathing. It helps individuals become more comfortable with water and provides self-care opportunities.

Nurturing Interventions

The idea behind nurturing interventions is to tap into a deeply rooted nurturing instinct that is connected to a distinct set of motor skills and automatic responses. The use of nurturing is not limited solely to doll therapy; rather, it can encompass numerous components, such as touch and reminiscence, which can be adapted as a therapeutic approach to reduce BPSD.

Dolls

Researchers have found dolls to be useful in reducing anxiety, withdrawal behavior, and depression and mild agitation (Bailey, Gilbert, & Herweyer, 1992; Ehrenfeld & Bergman, 1995). Doll therapy was also incorporated into an award-winning nursing home unit, resulting in a

reduction in wandering and anxiety during hospitalizations and out-of-facility physician visits (Optima, 2000). A case study used a lifelike doll on a resident with agitation and anxiety. The use of the doll reduced anxiety and agitation; it also reduced worries and increased attachment, social interaction, and communication (Bisiani & Angus, 2013).

Doll therapy was introduced with stations for bathing and changing the dolls. The results of these changes were a significant decrease in falls, an increase in nutritional status, and a reduction in agitation (Optima, 2000). Doll therapy is useful for clients with verbal or physical aggression, repetitive motor movements, wandering, anxiety, depression, and apathy. Staff should test the client's reaction to the doll prior to offering a doll. They must have enough dolls so clients do not fight over them. A water-safe doll is also recommended for use in the bathtub. The doll can be used as a diversional intervention for residents attempting to leave a unit, for calming at bedtime, while administering medications, during personal hygiene care, and for out-of-facility physician visits. Staff may ask leading questions and reminisce about raising their own children. Discussion questions may be, "How many children did you have?" or "What is the best way to get a baby to stop crying?"

Massage

Studies on the use of massage therapy showed a decrease in wandering and agitation (Kilstoff & Chenoweth, 1998), a significant decrease in fidgeting (Snyder & Olson, 1996), and significant positive effects on agitation (Kim & Buschmann, 1999; Snyder & Olsen, 1996). A combination of talking and massage significantly reduced problem behaviors (Rowe & Alfred, 1999) and produced a calming effect; it also reduced resistance to care (Nasr & Osterweil, 1999). Slow-stroke back and hand massage were shown to reduce anxiety (Harris & Richards, 2010). In a pilot study of foot massage ($N = 22$), researchers found a significant decrease in agitation both immediately after the intervention and at follow-up (Moyle, Murfield, O'Dwyer, & Van Wyk, 2013).

A back, hand, foot, or neck rub is an effective intervention, as it is comforting and emotionally intimate. Prior to performing a massage, staff should determine if the older adult has any arthritis or open sores in the area that will be massaged, a preference for over- or underclothing massage, and whether lotion should be applied. They should use the older adult's normally used lotions and start very softly, asking if anything hurts. Staff should massage slowly, checking occasionally if the older adult would like the pressure softer, harder, or on a different location. When massaging hands, they should focus on the palm down to the wrist. If massaging feet, the bottom of the feet, heels, and the insteps should be the focus. If massaging shoulders, staff should focus on the top of the back and lower part of the skull and use light pressure on the neck itself. A neck massage should not be performed on both sides of the neck at one time. When massaging the head, staff should use both hands and fingertips. A massage helps older adults become more comfortable with another individual touching their bodies, thereby facilitating acceptance of personal care.

Reminiscing

Person-centered care is important when using reminiscence. Knowing the older adult's history will help prevent recollection of past events that invoke grief, anger, or fear. Examples of such events could be the loss of a child at a young age, a tragic accident, or negative memories of military experiences.

A pilot study in Sweden examined the effect of storytelling related to Erikson's developmental theory; it found that when participants remembered, they made associations and had positive interactions with each other and their caregivers (Holm, Lepp, & Ringsberg, 2005). A meta-analysis of reminiscence therapy for individuals with dementia included five trials with 144 participants. The statistically significant results included increased cognition, mood, and behavior among individuals with dementia, whereas their caregivers showed significant decreases in stress (Woods, Spector, Jones, Orrell, & Davies, 2005). Football reminiscence for men with dementia was examined in a small study. This case study of 4 men found anticipation of pleasure, greater communication, and a lessening of BPSD (Tolson & Schofield, 2012).

When an older adult presents anxiety, sadness, or mild agitation, a short reminiscing session helps replace the negative thoughts with positive ones. Older adults with cognitive impairment often remember events from their past rather than what happened yesterday or even 1 hour ago. Individuals with confusion or anxiety who are overwhelmed by what is happening around them are often comforted by using reminiscing to encourage talking about events in their past that were enjoyable and not confusing to them. Possible questions to ask include:

- "Did you ever travel outside of the United States? Where to?"
- "What was the first car you owned?"
- "Do you remember your first kiss? Can you tell me about it?"
- "What was your favorite food as a child? Who made it? Tell me about him or her."

Staff should use statements to keep the older adult talking, such as "Go on," and "What happened next?" They should sit at the older adult's level and use eye contact. In addition, staff should try to not appear anxious to leave, although they should make it a short session, which can be accomplished by stating that they will come back to hear more later. If this is said, staff must make certain that they do what they say.

Summary

Efforts to identify activities that are meaningful, easy to implement, and well received by residents with BPSD should never cease. Nursing advocating for nonpharmacological interventions started more than 150 years ago with Florence Nightingale's reform of the nursing profession. At that time, the physician's administration of drugs or performance of surgery were

largely the beginning and end of the treatment process. Nightingale changed medicine's approach to treating patients (Nightingale, 1859). She wrote of the benefits that accrued to patients from caring for pets, listening to and performing music, doing needlework, playing games, and writing. She established various programs based on patients' functioning levels. One of the main reasons that Nightingale established these programs was to prevent behaviors and the use of mind-altering drugs and alcohol. She kept this simple statement in her mind: "It is time for a paradigm shift, a revolution, a transformation, a sort of metamorphosis. It just does not happen, but rather it is driven by agents of change." Like Nightingale, nurses today can be that change agent by using nonpharmacological interventions in place of medications. The simple sensory and nurturing interventions discussed in the current article are a good place to start.

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