Effectiveness of Interventions Designed to Modify and Maintain Perceptual Abilities in People With Alzheimer’s Disease and Related Dementias

Lori Letts, Jacqueline Minezes, Mary Edwards, Julie Berenyi, Kathy Moros, Colleen O’Neill, Colleen O’Toole

KEY WORDS
- Alzheimer disease
- evidence-based practice
- occupational therapy
- perception
- perceptual disorders

An evidence-based review was undertaken to answer the question, “What is the evidence for the effect of interventions designed to modify and maintain perceptual abilities on the occupational performance of people with Alzheimer’s disease and related dementias?” A systematic search of electronic databases and application of inclusion and exclusion criteria guided the selection of 31 articles. Each article was critically appraised, and the evidence was synthesized. Some interventions use remaining perceptual abilities to enable people to find their way in a facility and decrease attempts at exiting. Preliminary evidence has supported use of visual stimulation and barriers. We found some evidence for the use of auditory stimuli and group therapy that aim to change perceptual abilities. Research with high-level evidence is required to validate these findings. Evidence on the benefits of Snoezelen® is not conclusive for occupational performance outcomes; further research to justify its use as an occupational therapy intervention may be warranted.


The objectives of this review were to systematically search the literature and then critically appraise and synthesize the applicable evidence to address the focused question, “What is the evidence for the effect of interventions designed to modify and maintain perceptual abilities on the occupational performance of people with Alzheimer’s disease (AD) and related dementias?”

Background and Statement of Problem

AD is a common form of dementia that affects >5 million people residing in the United States (Alzheimer’s Association, 2010). It is characterized by progressive changes in cognition that affect a person’s occupational performance, eventually leading to significant disability. Occupational performance refers to a person’s ability to engage in activities of daily living (ADLs), work, leisure, and social participation (American Occupational Therapy Association, 2008). Occupational therapists working in hospitals, long-term care facilities, and the community assess people with AD and related dementias and make recommendations on interventions that enable optimal participation in life. Perceptual impairments in people with AD have varying effects on occupational performance, depending in part on the stage of the disease. Deficits in perception experienced by people with AD and related dementias may have an impact on behavior and functional ability (Jones & van der Eerden, 2008), which can result in caregiver burden and stress. This burden and stress may in turn influence quality of life of people with AD and related dementias as well as that of their caregivers. Occupational
therapists seek to modify or compensate for underlying deficits in occupational performance with the goal of optimizing health and quality of life.

Limited evidence is available to demonstrate how occupational therapy practitioners might address perceptual impairments. For example, perceptual and sensory stimulation (e.g., visual stimuli, music) might offer a way to activate sensory and perceptual systems in a way that engages people with AD and related dementias in meaningful occupations. In other situations, occupational therapy interventions may be necessary to compensate for perceptual impairments to optimize performance and thus health and quality-of-life outcomes. We undertook a systematic review of the literature to examine the evidence on interventions that are designed to modify and maintain perceptual abilities with outcomes of occupational performance in people with AD and related dementias.

Method for Conducting the Evidence-Based Review

Arbesman and Lieberman (2011; this issue) summarized the method used for the initial review that was conducted. The search was originally completed in 2005 and replicated in early 2010 to ensure a more up-to-date review. We followed the same procedures as in 2005 to select and appraise articles, and new published reports were incorporated into the existing review.

Results

The 2005 literature search and application of the inclusion and exclusion criteria resulted in the selection of 28 articles for the review. Three more articles were added to the review when the search was updated in 2010. Articles reviewed included 10 Level I (systematic reviews, meta-analyses, and randomized controlled trials [RCTs]), 6 Level II (two-group, cohort, or case-control studies in which assignment to a treatment or a control group is not randomized), 6 Level III (one-group, nonrandomized, before and after, or pretest and posttest studies), 6 Level IV (single-case experimental design, sometimes reported over several participants), and 3 qualitative reports. The findings in the literature indicate that research is clustered in two broad areas: (1) interventions that use remaining perceptual abilities (but do not aim to change perception), thereby offering compensation to maintain or improve the outcome of occupational performance, and (2) interventions that aim to change perceptual abilities and thereby maintain or improve the outcome of occupational performance.

Compensatory Interventions

Preliminary evidence was found in the literature on the effectiveness of interventions that use remaining perceptual abilities with outcomes of occupational performance in people with AD and related dementias. These interventions do not aim to change perceptual abilities of people with dementia; rather, they use remaining abilities and compensate for perceptual impairments. The evidence for these interventions is summarized in Supplemental Table 1, available online at www.ajot.aotapress.net (navigate to this article, and click on “supplemental materials”).

The interventions can be further classified as
- Light intensity or optical intervention (1 Level III, 1 Level IV)
- Use of visual barriers (1 Level II, 4 Level III)
- Environmental design (1 Level II, 1 Level IV)
- Way-finding programs (1 Level I, 1 Level II, 3 Level IV).

In a nonrandomized before–after study design (Level III, \(N = 13\)) involving people residing in a long-term care facility, Koss and Gilmore (1998) found that increasing the light intensity and enhancing visual stimulation during evening meals resulted in an increase in food consumption (\(q[12] = 2.46, p < .03\)) and a decrease in agitated behavior (\(q[12] = 3.04, p < .05\)). However, the lack of a control group and monitoring of other interventions that could have contributed to the observed outcomes is a potential limitation of the study. The intervention is easy to use, although the risk of harm has not been documented. Occupational therapy practitioners can perform a trial of this strategy to positively affect occupational performance in people who demonstrate agitation and noncompliance during their meals. In a case series design (Level IV, \(N = 3\), Pankow, Pliskin, and Luchins (1996) examined the benefits of optical interventions (such as tints, spectacle-mounted prisms, and telescopic devices) for treatment of visual hallucinations in people with a combined diagnosis of visual hallucinations and dementia. A decrease in the frequency of hallucinations was reported, and people were less upset. Although the interventions could be useful when working with people with similar clinical features, engagement in occupational performance after a decrease in visual hallucinations and long-term benefits need to be examined.

Wandering and exiting behavior are commonly reported by caregivers of people with AD and related dementias. Exiting is a safety concern for the person and for the hospital or nursing home where the person with dementia may reside. The behavior results in stress for the caregivers. The literature contains evidence on the use of

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visual barriers to minimize the number of exits reported for people with dementia. In a quasi-experimental study design (Level III, \(N = 12\)), Namazi and Johnson (1992a) found that the use of visual barriers in the form of portable room dividers facilitated engagement in meaningful activities and decreased attention to auditory stimuli in people with mild to moderate AD. The findings have useful implications for hospitals or nursing homes that organize group programs for their residents as well as in the home environment to facilitate engagement in occupational performance and minimize auditory distractions. Further research that controls for study limitations (e.g., selection bias, reporting of psychometric properties of the outcome measures) is necessary to replicate the study findings.

Evidence also exists for the use of visual barriers in the form of concealment of a door knob, a painted door knob, and the use of a cloth barrier on an exit door that resulted in a decrease in the number of attempts at exiting by people with dementia. Namazi, Rosner, and Calkins (1989) found that the concealment of an exit door knob with cloth resulted in a reduction in the number of attempts among people with severe dementia and visual agnosia. The small and homogeneous sample and the level of evidence (Level III, \(N = 9\)) warrant further research to justify the findings and generalize the results to people with similar characteristics. In another study, Dickinson, McLain-Kark, and Marshall-Baker (1995) also found that the use of a visual barrier (blind or cloth) resulted in fewer attempts at exiting, ranging from a decrease of 44% with a closed blind to 96% for a cloth panel (Level III, \(N = 7\)). However, Dickinson et al. reported that on follow-up assessment, participants had learned that the panic bar was behind the visual barrier and attempts at exiting increased again. Some evidence also exists that when people encounter an unlocked rather than a locked door, a decrease in agitation and attempts at exiting are reported (Namazi & Johnson, 1992b; Level II, \(N = 22\)), although statistical significance was not tested. The results should be interpreted with caution because they provide limited evidence to support influence on occupational performance and behavior.

In summary, preliminary evidence exists in the literature for the use of visual barriers (e.g., divider, cloth barrier, blind) to reduce the attempts at exiting demonstrated by people with AD and related dementias. The visual barriers used in these studies were low cost and easy to implement and can be recommended by occupational therapy practitioners for people who exhibit exiting behavior. However, further research examining the long-term benefits of the use of visual barriers in reducing the number of attempts at exiting and outcomes related to occupational performance is warranted. Research to examine whether people engage in functional activities once attempts at exiting have been controlled by using visual barriers will be useful for occupational therapy practitioners.

Evidence also exists for the use of environmental design to compensate for deficits in perception experienced by people with AD or related dementias. Elmstahl, Annerstedt, and Ahlund (1997; Level II, \(N = 105\)) examined responses to an L-shaped versus a corridor-like design unit for people with dementia. They found that less time disorientation was reported in people in an L-shaped unit after 6 mo (\(p < .05\)) and more disorientation in self-identity was reported in people in a corridor-like design unit after 12 mo (\(p < .05\)). In terms of occupational performance outcomes, research is required on the benefits of different floor plans in enabling people with AD and related dementias to engage in meaningful activity in addition to reducing reported disorientation. Cohen-Mansfield and Werner (1998; Level IV, \(N = 27\)) reported that environmental designs in the form of wall murals and posters increased time spent in corridors (\(p < .01\)) and on benches (ns) and decreased exiting behavior (ns). Further research on engagement in activities when people sit on benches and spend time in corridors in a nursing home or hospital is warranted. Kincaid and Peacock (2003; Level III, \(N = 12\)) also found that the use of a wall mural on the exit door resulted in a decrease in exit-seeking behavior among the participants (\(p = .024\)), but the small sample and study limitations (e.g., who the observers were, timing bias, level of evidence) warrant further research to generalize the findings. In summary, some evidence exists for the benefits of different environmental designs (e.g., overall design of a unit, wall murals) with outcomes of reduction in disorientation and attempts at exiting exhibited by people with AD and related dementias. Further research examining both the short- and long-term benefits of design of the environment with outcomes related to engagement in functional activities is warranted.

People with AD and related dementias sometimes have trouble finding their way in a nursing home or their place of residence. Occupational therapists use way-finding programs to overcome this limitation. We reviewed evidence from one Level I study, one Level II study, and three Level IV studies examining way-finding abilities of people with dementia. A way-finding program consisting of backward chaining, communication, and the use of locational maps enabled people in the treatment group to find their way to the dining room \((\chi^2_m = 3.95, df = 1, n = 27, p = .03)\), but the benefits were short term (McGilton, Rivera, &
Dawson, 2003; Level I, \( N = 32 \)). A decrease in agitation was reported in both groups after a week of the intervention, but the results were not sustained at 3-mo follow-up. The study supported the short-term benefits of the use of a way-finding program, but further research replicating the study is warranted to control for this study’s limitations (e.g., small sample, attention bias). In a cohort study comparing way finding of people with AD and matched older adults with no cognitive impairment, Passini, Rainville, Marchand, and Joannette (1998; Level II, \( N = 42 \)) noted that people with AD were more likely to require way-finding interventions and used less memory and more exploring to find their way from a bus stop outside a hospital to a specific clinic in the setting.

In a descriptive study examining room orientation and intrusion into other rooms, Gibson, MacLean, Borrie, and Geiger (2004; Level IV, \( N = 19 \)) found that people used environmental cues (e.g., use of color, number, name-plates, lights) to find their way to their own rooms (84% were able to find their own rooms on initial attempt and 16% after three repetitions of an orientation task) and that intrusion into other rooms was a way of seeking social stimulation. Further research is needed to examine how environmental cues and orientation to the environment affect social stimulation in people with dementia. Provenceh, Bier, Audet, and Gagnon (2008; Level IV, \( N = 1 \)) used a single-case design to examine the use of errorless-based techniques that included hand holding, pointing, guiding, and verbal cues to improve way finding. After the intervention, they saw significant improvement in the participant’s ability to follow a common, short route within a seniors’ residence. In another study, Passini, Pigot, Rainville, and Tretreault (2000; Level IV, \( N = 6 \)) found that the use of signs enabled people to find their way in the facility. However, results should be interpreted with caution because these authors drew conclusions and recommendations for design changes that were not substantiated in the article.

In summary, preliminary evidence exists for the use of environmental cues in the form of way-finding programs and signage that enables people to find their way in their place of residence. Further research with higher levels of evidence and including outcomes of occupational performance is warranted. The long-term benefits of way-finding programs also need to be explored.

**Interventions That Aim to Change Perceptual Abilities**

Limited evidence in the literature supports interventions that aim to change perception with outcomes specific to occupational performance in people with AD or related dementias. However, evidence for interventions that are geared toward modifying perceptual abilities with outcomes related to behavior and cognition have been identified. The evidence from these studies is summarized in Supplemental Table 2, available online at www.ajot.ajotpress.net (navigate to this article, and click on “supplemental materials”; note that evidence from the 3 qualitative studies is not included in the table.). On the basis of the existing evidence in the literature, the interventions can be further classified as

- Multisensory or Snoezelen® intervention (6 Level I, 2 Level III, 1 Level IV)
- Sensory integration (1 Level I)
- Group therapy (2 Level I, 1 Level II)
- Exposure to sensory stimuli (1 Level III, 1 Level IV, 2 qualitative).

Multisensory or Snoezelen intervention has traditionally been used with people with learning disabilities and is gaining popularity for treatment of people with AD or related dementias (Baker et al., 2001). The intervention aims to stimulate the primary senses of sight, hearing, touch, taste, and smell with limited intellectual demands placed on an individual (Chung & Lai, 2002). Typically, the equipment included in this type of environment includes light sources incorporating color, sound, and possibly projection of scenes; tactile stimulation in the form of mats and other textures; and other stimuli that may include sound beams and scents. Although not explicit, the implication is that this sensory stimulation will change perceptual skills, resulting in changes in performance and quality of life. Six Level I studies, 2 Level III studies, and 1 Level IV study explored the benefits of this intervention for people with dementia.

A systematic review identified only 2 studies, and the pooled results of the short-term outcomes were not statistically significant (Chung & Lai, 2002; Level I, \( N = 2 \)). Three RCTs were found that compared Snoezelen with reminiscence therapy. In the first, van Diepen et al. (2002; Level I, \( N = 15 \)) reported a nonsignificant reduction of agitation in the Snoezelen group compared with the reminiscence group immediately after the intervention, which was not sustained after 15 and 30 min. In a similar study by Baillon et al. (2004; Level I, \( N = 25 \)), both interventions resulted in short-term benefits in mood and behavior, and they observed no statistically significant differences between the interventions. In the third study (Baillon et al., 2005; Level I, \( N = 25 \)), individual responses in agitation were highly variable, and both interventions resulted in more positive mood and behaviors. The small sample sizes and variations in individual responses were limitations in all three of these studies.
addition, Baillon et al. (2005) did not examine occupational performance outcomes.

Another study examined the long- and short-term effects of Snoezelen compared with directed activity in people with AD or vascular dementia (Baker, Dowling, Wareing, Dawson, & Assey, 1997; Level I, N = 36). Little change in behavior was reported in the group receiving Snoezelen, and an increase in speech was seen during the intervention, but it deteriorated after the intervention. Short-term effects did not demonstrate that either intervention outweighed the other. Despite the high level of evidence, the inadequate justification of the sample size and failure to report on the psychometrics of the outcome measures make it difficult to assess their appropriateness.

Heyn (2003; Level III, N = 13), in a study involving a multisensory exercise program that targeted perceptual abilities, reported an increase in engagement in activity and mood after intervention (statistical significance not reported). However, the study limitations (e.g., small sample size, multiple outcome measures, lack of a comparison group) make it difficult to draw conclusions about the benefits of the intervention. Further research with functional outcomes and controlling for the study design’s limitations is worth exploring.

In a descriptive study involving people with dementia, Hope (1998; Level III, N = 29) found that people with low mood, anxiety, or both as well as those who demonstrated beneficial effects from other relaxation strategies can be also exposed to a multisensory environment. Not all people experienced the benefits, suggesting that a client-centered approach may need to be adopted if this intervention is used. Occupational therapy practitioners may be able to identify people who could be exposed to a multisensory environment, but the level of evidence and limited evidence on effectiveness warrant its use with caution.

Pinkney (1997; Level IV, N = 3) compared the effectiveness of Snoezelen and relaxation (music) and found that both interventions resulted in positive outcomes of behavior and mood (statistical significance not tested). However, the low level of evidence, small sample, intervention bias, and lack of assessment of occupational performance outcomes limit the usefulness of the study outcomes for occupational therapy practitioners. In summary, limited evidence exists for the effectiveness of Snoezelen or multisensory interventions on occupational performance outcomes in people with dementia. Although the intervention may not result in harm to people exposed to it, the cost and time to implement the intervention may not be justified if the goal is to modify occupational performance. In institutions that have already implemented a Snoezelen room, it can be used for people who enjoy the exposure to the sensory environment. From an occupational therapy perspective, positive occupational performance outcomes have not been reported. Research examining the benefits of the multisensory exercise program with outcomes related to occupational performance is worth pursuing.

Evidence also exists on the use of sensory integration with people with AD and related dementias. In an RCT comparing the effectiveness of sensory integration with participation in leisure activities (the control group), Robichaud, Hebert, and Desrosiers (1994; Level I, N = 40) noted no statistically significant differences in the intervention group compared with the control group in disruptive behaviors, caregivers’ reactions to behaviors, or improvement in ADLs. This study’s findings do not justify the implementation of sensory integration in people with AD or related dementias for the outcomes examined. Further research could be pursued to validate the study findings while controlling for this study’s limitations (e.g., power analysis, outcome measures, frequency of sessions) with occupational outcomes.

Two Level I studies and one Level II study that focused on group interventions and aimed to change perceptual abilities and improve occupational performance outcomes were identified in the literature. In an RCT examining the effectiveness of an attention-focusing group, Rosswhurm (1990; Level I, N = 30) reported significant improvement in performance of visual exercises (t = 3.81, p < .001) and social participation in group activities (t = 3.81, p < .001) in people with AD or multi-infarct dementia. This study contributes initial evidence of outcomes on occupational performance because social interactions were reported. However, the results did not transfer to ADLs or other occupations, which are also outcomes of interest to occupational therapy practitioners. Pomeroy (1993; Level I, N = 24) reported a statistically significant improvement in mobility skills in people with severe dementia in the treatment phase of a study that examined the benefits of a physiotherapy intervention consisting of music, body awareness, and mobility and functional training. Pomeroy did not examine the intervention’s long-term gains, and a high noncompletion rate was indicative of either the progression of the disease or a too-strenuous intervention. Further research to examine the long-term benefits on mobility of exposure to the intervention would be beneficial. Lantz, Buchalter, and Mcbee (1997; Level II, N = 14), in a study that focused on modified meditation, relaxation, guided imagery, and body awareness, reported a reduction in levels of agitation in the group receiving the intervention (p < .001), but the
results cannot be attributed to the intervention alone because of nonrandomization. The program appears to have a low cost, but a more rigorous study design is required to confirm its effectiveness with occupational outcomes before it is adopted. In summary, the literature contains preliminary evidence of the effectiveness of group interventions that aim to change perception with outcomes related to occupational performance. Further research examining the short- and long-term benefits of the interventions with outcomes related to occupational performance is warranted. Such research will help strengthen the existing findings and will have useful implications for occupational therapy practitioners working with people with AD and related dementias.

The benefits of exposing people with AD and related dementias to single sensory stimuli such as music or natural environmental elements have been examined in 1 Level II, 1 Level IV, and 3 qualitative studies (1 of which also included Level IV quantitative data). Sherratt, Thornton, and Hatton (2004; Level II, N = 24) reported that exposure to live music resulted in a decrease in time spent sleeping (p < .01) and increased the levels of well-being (p < .01) in people with moderate to severe dementia. The reliability and validity of the measurement and possible interaction bias between staff and participants are limitations of this study. Whether all aspects of this intervention are typically within the scope of occupational therapy practitioners’ interventions is questionable (i.e., occupational therapy practitioners seldom plan live music or entertainment for residents of long-term care facilities). However, occupational therapy practitioners can make recommendations suggesting the implementation of live music when consulting with teams at nursing homes.

In a phenomenological study involving people with dementia living in Sweden, the use of background music and caregiver singing resulted in better posture, an increased awareness of self, and use of symmetric body movements when engaged in self-care activities in the morning (GöteII, Brown, & Ekman, 2003; qualitative, N = 9). GöteII et al. (2003) suggested that caregiver singing elicited better interaction between the person and the caregiver during morning care. Caregiver singing is easy to implement during morning care and can be recommended by occupational therapy practitioners to facilitate engagement in occupational performance. The limited information on the criteria used for recruitment and the differences among other people in the facility limit the transferability of the findings. In addition, the culture and language difference between the person with dementia and the caregiver could influence the outcomes.

Sensory exposure to the natural environment has also been tested as a strategy to improve perceptual abilities by reducing autonomic arousal and improving affect. In a study that combined survey and qualitative data, Rappe and Topo (2007; qualitative and Level IV) examined the effect of exposure to plants on the well-being of people with dementia. By means of a staff survey (N = 65), they noted positive affective outcomes for people with dementia; observations of 123 people with dementia in day care and residential facilities resulted in suggestions that exposure to plants (indoors, outdoors, and through windows) provided people with connections to support their orientation and engagement in social participation. Gibson, Chalfont, Clarke, Torrington, and Sixsmith (2007; qualitative, N = 26) noted that activities identified by people with dementia as enjoyable frequently involved interactions with nature and outdoor settings and that gardens were a primary site for such sensory experiences. The findings from this study were used to consider interventions and factors that would be important to consider in refining nature-based interventions.

Although these studies are based on hypotheses that sensory stimulation will change perception and through that performance outcomes, the limited levels of evidence and qualitative data do not provide adequate evidence to strongly support the hypothesis. Caregiver singing and exposure to music may be useful. Further research that examines the benefits of exposure to auditory and natural environmental stimuli with occupational outcomes is warranted to strengthen the existing evidence findings.

**Summary and Discussion**

This evidence-based review provides information for occupational therapy practitioners, students, researchers, and recipients of occupational therapy services. The literature contains limited evidence regarding the effectiveness of interventions that are designed to modify and maintain perceptual abilities with outcomes of occupational performance in people with AD or related dementias. The findings in the literature were presented as interventions that aimed to compensate for perceptual deficits and those that attempted to change perceptual abilities. Evidence on the use of interventions that attempt to compensate for perceptual deficits (e.g., visual barriers, environmental design) tended to measure outcomes such as behavior, agitation, and cognition rather than occupational outcomes. The findings have useful implications for occupational therapy practitioners working with people with dementia because they can recommend targeting exiting behavior, agitation, and disorientation to caregivers to...
enable them to cope with these behaviors. However, research needs to be pursued that examines whether changes in these behaviors will result in improvements in occupational engagement, which is an outcome of interest for occupational therapy practitioners. Practitioners can also test interventions in the form of increasing light intensity during meals, using way-finding programs with their clients, and observing the occupational outcomes. Because the existing evidence is preliminary, further research with higher levels of evidence that examines the benefits of these interventions (way finding, light intensity, environmental design, and visual barriers) is worth pursuing.

In spite of the high level of evidence in the literature on the use of multisensory interventions (e.g., Snoezelen) that aim to change perceptual abilities of people with AD and related dementias, the findings do not justify the implementation of the intervention if the goal is to improve occupational performance. Whether further research that examines occupational performance outcomes after exposure to a Snoezelen intervention should be pursued is questionable, because the evidence does not justify its use at the level of components of occupation, either. Considering the costs associated with the purchase and installation of the Snoezelen room, evidence in the literature does not justify the purchase of the equipment. The reviewed studies have reported no negative or harmful effects, and in settings that have already implemented the Snoezelen room, a client-centered approach can be adopted and people who demonstrate beneficial effects in terms of agitation, relaxation, and mood can be offered the intervention.

We discussed evidence in the literature on the use of auditory stimuli (e.g., caregiver singing, live music) that target perceptual abilities with outcomes related to occupational performance. The findings, although preliminary, suggested that implementation by occupational therapy practitioners, nurses, and caregivers who assist people with their daily activities may have positive outcomes on performance. In addition, group therapy (e.g., attention-focusing group, mobility training) can be implemented by occupational therapy practitioners because preliminary evidence has supported its use with occupational outcomes. Further research should be pursued to examine these interventions’ effectiveness (e.g., auditory stimuli, group therapy) because it will have useful implications for occupational therapy practitioners, students, and clients.

The findings of this evidence-based review can be discussed with clients and caregivers, and informed decisions regarding their care can be made. The research will also be useful to help justify the need for occupational therapy practitioners on teams working with people with dementia because contributions specific to the discipline and justification for the service will be grounded in existing research evidence. The findings will also be useful for students because they will increase students’ understanding of the interventions that are available with specific outcomes related to occupational therapy practice. However, each person with AD or a related dementia will present with a different clinical manifestation, and care should be used when making generalizations from the evidence.

**Exemplars for Practice and Education**

On the basis of this evidence-based review’s findings, we provide in the following exemplars summaries of the ways in which the evidence can be applied in practice and education.

**Exemplars for Practice**

- Occupational therapy practitioners should assess the environment to identify possible barriers or triggers for stress.
- Occupational therapy practitioners should communicate the findings on environmental design, visual barriers, and strategies to decrease exiting behavior to caregivers and teams involved in rendering care to people with AD or related dementias.
- The potential benefits of implementing music when working with people during their morning ADLs should be communicated to caregivers and staff who render such care.

**Exemplars for Education**

- Occupational therapy students need to have an understanding of the clinical manifestations of AD and related dementias, the occupational therapy interventions that are used, and the need to implement individualized care.
- Skills in education and consultation are needed so that interventions can be shared with clients, caregivers, and teams rendering care to people with AD and related dementias.

**Exemplars for Research**

- The long-term benefits of engagement in occupational performance after interventions designed to modify and maintain perceptual abilities need to be examined. Examining whether people engage in functional activities once attempts at exiting have been controlled by using visual barriers or after participation in multisensory exercise programs would be useful for occupational therapy practitioners.
Further research is needed to examine how environmental cues and orientation to the environment affect social stimulation in people with dementia. Of particular interest would be whether changes in perception translate into greater participation and, inversely, whether occupational participation can influence perceptual function.

References


