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MOCK EXAMS

# Behavioral Gerontology



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## Introduction

Behavioral Gerontology is the application of behavior analysis to issues that are related to age. Behavior analysts are able to work directly with seniors and the staff that care for these individuals to implement sustainable, non-pharmacological supports as methods for enhancing their quality of life and care services, decreasing challenging behaviors, maintaining daily life skills, implementing memory and language programs, preserving medication adherence, and prolonging independence.

According to the 2010 Census, 39 million people, or 13 percent of the population, were over 65 years of age. Additionally, at least ten percent of these individuals had been diagnosed with dementia.

By 2050, that number will continue to increase to approximately 88 million, or around 20 percent of the population. Although the average lifespan has been increasing for almost a century now, the physical and mental issues associated with advanced age have not been as easily addressed. Elderly patients frequently experience problems such as dementia, Alzheimer's disease, depression, and anxiety. These conditions lead to a variety of problematic behavioral issues which include abusiveness, decreasing personal hygiene, confusion and apathy, hoarding and paranoia and obsessive/compulsive disorders (OCD).

In this course, participants will learn to (1) discuss basic and clinical behavior analytic research on aging, (2) identify assessments and assessment informed interventions that are applicable to the aging population, and (3) discuss behavior analytic approaches to working with the aging population.

## Section 1: Basic and Clinical Research on Aging Population

The demographics of the human population both globally and nationally have started to shift towards inclusion of an older population. Individuals that are 65 years or older are estimated to make up about 20% of the population in the United States by the year 2030, with a further increase to 24% of the population by 2060 (Colby & Ortman, 2014). This older population will require a range of medical and psychological services as they experience a decline in their health, deficits within different sensory modalities such as hearing loss, and impairments in their cognitive abilities. These factors have the potential to become debilitating and socially isolating (Belsky, 1999). Even more so, the infrastructure that is needed to support these individuals is anticipated to be inadequate as these individuals look for alternatives to the typical nursing home setting (Molinari et al., 2003).

As these inadequacies become more and more apparent, opportunities for research and practice exist for behavior analysts that have a desire to work with the aging population. The field of behavior analysis has continually advocated for environmental modifications to be made as a method for enhancing the lives of older individuals (Lindsley, 1964). Furthermore, behavior analysts have noted that natural contingencies for individuals that are older support ineffective behavior (Skinner, 1983), basic operant principles are the basis for aging-related concerns, and a substantial portion of skills that have been shown to decline in this population are able to be reversed (Baltes & Barton, 1977). Behavioral gerontology is therefore referred to as the integration of behavior analysis to older individuals in a variety of areas such as basic behavioral research, clinical applications, and organizational issues that can affect service delivery providers (Adkins & Mathews, 1999).

In the mid-1980s, a few publications were included in behavioral journals, and several behavior analytic studies existed in aging journals. Although there is the potential for a significantly positive impact for this population and their surrounding environments, the field of behavioral gerontology has not continued to grow at a rate that is comparable with its potential (Burgio & Burgio, 1986).

The behavior analysts that are able to publish their work in multidisciplinary aging journals have also attempted to demonstrate the connection between behavior analysis and this population through inclusion of the advantages of a behavior analytic approach to aging (Noguchi et al., 2013). These advantages include a focus on environmental factors that can either promote or suppress different behaviors, and a belief that there is a potential to reverse the decline through a cost-effective behavior analytic approach.

It has been argued that non-behavior analytic research on aging has been able to provide a framework and basis to which research and clinical considerations in behavioral gerontology can be based on. As a behavior analyst is able to become more aware of the current research topics on aging and the various societal concerns that are present for individuals that are older, then they are able to focus their research on topics in which the broader research community that is studying the aging population will consider as important. For example, one major concern within the aging population is their limited fluid intake which can become a life-threatening problem (Keller et al., 2015). As a result, behavior analysts developed the Hydration Interview which is a functional assessment interview that is used to identify risks for dehydration as well as any barriers to hydration that are present (Feliciano et al., 2010). This further illustrates the importance of behavior analysts and their research on various aging related health concerns and how interventions can be developed that have a significant positive social impact on the lives of individuals that are older.

## **Basic Behavior Analytic Research on Aging Population**

The research on aging has predominantly been dominated by the study of memory and cognition as it relates to information processing (Birren & Schaie, 2001). Therefore, there is little that has been published from a behavior analytic perspective. Most of the literature that has been conducted in the field of behavior analysis focuses on age-related changes in classically conditioned responses, how individuals respond to different schedules of reinforcement, signal detection, and the formation of stimulus equivalence classes. The findings as they relate to age-related differences in both learning and performance are important to note as these findings should be considered in applied work to avoid any misinformed or ineffective interventions that may have typically been considered for clinical problems.

### ***Respondent Conditioning***

There have been various studies that have noted age and neurocognitive disorder related changes that have existed in different classically conditioned responses. These changes have been found in both human and nonhuman species. Trace and delay conditioning have been used to examine age-related differences in acquisition of classically conditioned responses. Trace conditioning has a series of trials where a brief interval is used to separate the end of the conditioned stimulus and the beginning of the unconditioned stimulus. Delay conditioning includes onset of the conditioned stimulus prior to the onset of the unconditioned stimulus; however, both stimuli end at the same time. Research has noted the importance of using these two different procedures (Graves & Solomon, 1985). As a result, it has been noted that damage to the hippocampus has a negative impact on trace conditioning but does not have the same effect on delay conditioning. Age-related changes can involve a deterioration of the hippocampus. In turn, differences can be found when evaluating respondent conditioning across young

and old organisms. Additionally, it was noted that increases in the complexity of procedures are inversely related to the acquisition of conditioned responses for individuals that are older. The trace procedure has been found to be more of a complex procedure than the delay procedure.

The results of this research suggest that simple procedural variations may interact with different age-related changes as they relate to performance and could affect findings that look to use stimulus-stimulus pairing. Older individuals are able to acquire fewer conditioned responses than that of younger individuals.

Furthermore, older individuals with a neurocognitive disorder acquire even fewer conditioned responses than that of healthy older individuals. These differences that exist among younger and older individuals can be related to the changes that occur in brain structure (Cheng et al., 2010). Repeated exposure to conditioning procedures has been shown to improve the performance of older individuals.

### **Operant Conditioning**

Within age-related basic research on operant conditioning, two of the most researched topics include sensitivity to reinforcement and stimulus equivalence. Previous research has suggested that the behavior of older individuals was less sensitive to environmental changes than that of younger individuals. Research in this area has produced conflicting results, though. Other research has shown that when a schedule of reinforcement is varied, the behavior of older individuals was slower to change in matching the new schedule of reinforcement (Fisher & Noll, 1996). Research has also noted that the behavior of older individuals did not respond to schedules of reinforcement despite their level of exposure (Tripp & Alsop, 1999). However, other research has shown that by manipulating the reinforcement magnitude on a computer task, older individuals were able to alter their responses accordingly, demonstrating that they were sensitive to changes in reinforcement schedules (Plaud et al., 1999). As a result, the behavior of older



individuals is sensitive to changes in reinforcement although it is less sensitive to reinforcement than that of younger individuals.

This research suggests that behavior analysts should consider basic operant research findings when they are designing and implementing different interventions for use with the aging population. Increased exposure to intervention contingencies may be required in order for older individuals to develop and maintain socially appropriate behaviors, especially when social stimuli maintain the problematic behavior and when appropriate responses have resulted in limited or no reinforcement.

When evaluating the information and research surrounding the responding in stimulus equivalence preparations, it has been found that older individuals typically have a weaker formation of equivalence classes. Stimulus equivalence preparations involve the researcher randomly assigning stimuli to classes and then to groups within each of those classes. The researcher then uses match-to-sample preparations to teach those relations. Research has shown that when older and younger individuals are compared, older individuals exhibit slower response times and poorer performance on posttests of equivalence relations (Wilson & Milan, 1995). Although results of the research in this area have been mixed, researchers have been able to identify that there are age-related differences in the behavior of individuals that can be mitigated through procedural variations. Therefore, behavior analysts that conduct research or provide services to older individuals should work to determine if procedural components of their interventions will have an impact on a person's responsiveness.

## **Clinical Behavior Analytic Research on Aging Population**

When evaluating the research that has been conducted on behavioral gerontology, the primary focus has been on mental health concerns, health

maintenance, and problems that coincide with neurocognitive disorders. The medical model has predominated over the psychosocial model which may be attributed to older individuals requiring more regular medical visits due to health concerns (Butler et al., 1992). On the other hand, there are fewer older individuals that have regular visits with mental health professionals. However, despite these differences, there is still information that demonstrates that change in the environment can result in change in behavior even when a medical intervention is unable to or does not alter one's physical or cognitive status. For example, when psychotropic medications are held constant, behavioral interventions are still able to produce a change in an individual's behavior (Baker et al., 2006).

### ***Mental and Physical Health Concerns***

In older individuals, depression and anxiety have been found to be common mental health concerns (Sorocco et al., 2005). These areas have resulted in extensive behavioral and cognitive-behavioral therapy research being conducted. Major depression has been documented as occurring in 1-6% of older individuals that live in the community (Mojtabai & Olfson, 2004), 5-10% of individuals that are medically ill or frail (Dick & Gallagher-Thompson, 1996), 20-30% of individuals that have been diagnosed with a neurocognitive disorder (Steinberg et al., 2003), and more than 50% of individuals that reside in a nursing home (Pellegrin et al., 2013). Generalized anxiety disorder occurs in 3-17% of older individuals and is characterized by worry (Ladouceur et al., 2004).

Cognitive behavioral therapy has been shown to be an empirically supported intervention for older individuals that have been diagnosed with depression and anxiety when it is delivered individually (Arean, 2004) or in a group format (DeVries & Coon, 2002). This intervention includes an educational component about depression and anxiety, self-monitoring of thoughts or emotion states that are negative or anxious, replacement of beliefs and self-statements that are

dysfunctional with statements that are functional, scheduling events that are pleasant to the individual, and training in problem solving, coping, and relaxation skills for the individual (Gatz et al., 1998).

Researchers have been able to delineate different guidelines for how to implement cognitive behavioral therapy to help address anxiety among older individuals that have been diagnosed with a neurocognitive disorder (Charlesworth et al., 2015). This approach included ten sessions that involved education, development of pretherapy skills, self-monitoring, collaboration and goal setting, muscle relaxation, and perspective taking. The development of pretherapy skills early on in the intervention is vital to the therapy process. However, older individuals with anxiety and a neurocognitive disorder are often found to lack pretherapy skills and may be unable to describe the difficulties they are experiencing emotionally. Therefore, it may be beneficial to modify short-term cognitive behavioral therapy so that it focuses more on the development of those missing pretherapy skills.

There are several health issues that are common in older individuals such as diet, hydration, continence, and compliance with health and medication recommendations. When older individuals do not engage in intervention regimen adherence (i.e., compliance with health and medication recommendations), this can have an influence on their overall health status and lead to cancer, diabetes, delirium, and other issues. Nonadherence to medication regimens is estimated to affect 43 to 62% of older individuals (Meichenbaum & Turk, 1987). Interventions that include the use of prompts and behavioral contingencies for adherence to regimens have been found to be effective.

Interventions that have used additional prompts (i.e., media, buttons, verbal reminders) with feedback and praise as well as the use of a token-based lottery system have shown to be effective as increasing the selection of healthy foods in

older individuals (Stock & Milan, 1993). Additionally, prompt systems have been effective at increasing fluid intake for older individuals that reside in a nursing home. Through this research, a choice of drink was offered to residents every 1.5 hours which resulted in an additional 21% increase in fluid intake (Spangler et al., 1984).

Urinary incontinence has been viewed as being more common in individuals as they age. This can be because of muscle weakness, decreased mobility, memory loss, or even difficulties with communicating. Often, older individuals will limit their fluid intake as a method for avoiding accidents which then can lead to dehydration. Some of the interventions that have proven to be successful when working through concerns of incontinence include psychoeducation and behavioral training, prompted voiding schedules, and the integration of discriminative stimuli.

## **Section 1 Personal Reflection**

What are some concerns that behavior analysts could be faced with when working with an older population? What are some resources that behavior analysts could use to further build foundational knowledge on behavioral gerontology?

## **Section 1 Key Words**

Behavioral gerontology - the application of behavior analysis to issues that are related to age

Delay conditioning - includes onset of the conditioned stimulus prior to the onset of the unconditioned stimulus; however, both stimuli end at the same time

Trace conditioning - series of trials where a brief interval is used to separate the end of the conditioned stimulus and the beginning of the unconditioned stimulus

## Section 2: Assessments and Assessment-Informed Interventions

Behavior analysts should become familiar with proper preintervention assessments that can be conducted for older individuals. Clinical approaches that are deemed effective at the integration of behavioral gerontology should work to include population specific behavioral assessments. These assessments should focus on an individual's cognitive functioning, health, and their diet.

### Stimulus Preference Assessment

One of the main priorities of care for older individuals that reside in care settings (i.e., day programming, assisted living, neurocognitive care) is to increase their participation in and enjoyment of activities that are available to them. Applied research has focused on determining different strategies and stimuli that can be used to increase one's engagement in various leisure activities (LeBlanc et al., 2011). When one's activity engagement has been increased, this can help to further improve their quality of life, maintain functioning, and prevent symptoms of depression (Engstrom et al., 2015).

Typically, gerontologists have utilized surveys to determine any activities that are preferred by individuals if they have attempted to identify preferences. One such survey that exists is The Pleasant Events Schedule-Alzheimer's Disease (Logsdon & Teri, 1997) that prompts caregivers to determine activities that are preferred for older individuals. However, there are limitations that exist with the use of surveys. Therefore, researchers have started to use direct observations to identify preferences for older individuals. Engagement-based reinforcement assessments refer to an assessment that measures the duration of unprompted engagement in an activity while a selection-based reinforcement assessment refers to an

assessment that measures an individual's selection of an activity over another activity in a concurrent-operants arrangement.

Researchers have evaluated different methods of paired-stimulus presentation (i.e., tangible presentations, pictorial presentations, printed text names, vocally presented names) for preference of older individuals with neurocognitive disorders (LeBlanc et al., 2006). Research has indicated that one participant had higher independent engagement with tangible presentations, and three participants had higher independent engagement with vocal presentations in one study. Additional research determined whether or not hierarchies of item preferences that were identified through a multiple stimulus without replacement assessment would forecast the engagement of older individuals (Raetz et al., 2013). Results of this research did predict the level of engagement among participants with these preferences remaining stable for a three to five month period of time.

Additional research has compared the multiple stimulus without replacement and free-operant assessments in older individuals with neurocognitive disorders (Quick et al., 2018). Results indicated both assessments were able to identify items that were preferred by the individuals. However, the multiple stimulus without replacement assessment was able to identify a hierarchy of items that were preferred that were able to be used for reestablishing functional skills. Results also indicated that both the selection based and engagement-based assessments were able to confirm the results of the free-operant and multiple stimulus without replacement assessments. Furthermore, engagement-based reinforcement assessments were able to indicate quicker results for the participants.

## **Functional Assessment**

Research has indicated that function-based interventions can be used to reduce challenging or unsafe behaviors more effectively than interventions that are non-function-based (Iwata et al., 1994). Some research has used functional assessments (i.e., interviewing staff members, observing directly, experimental functional analysis) as a way to guide the creation of function-based interventions for older individuals with neurocognitive disorders (Baker et al., 2011; Dwyer-Moore & Dixon, 2007).

An intervention that is effective for older individuals with neurocognitive disorders is the noncontingent delivery of reinforcement at set intervals (Buchanan & Fisher, 2002). Additional interventions that have been used include teaching responses that are socially appropriate to access reinforcement while withholding reinforcement when problematic behavior occurs (Dwyer-Moore & Dixon, 2007). Many challenging behaviors have been reduced effectively by using function-based interventions such as wandering (Dwyer-Moore & Dixon, 2007), aggression (Baker et al., 2006), and disruptive vocalizations (Buchanan & Fisher, 2002).

## **Assessments and Interventions for Use with Verbal Behavior**

In many cases, language disruptions in individuals that are older are a result of a stroke or neurocognitive degeneration (Baker et al., 2008). Research has indicated that simple antecedent environmental manipulations, such as rearranging a room or providing refreshments, can demonstrate an increase in interactions and verbal statements within individuals that are older (Carstensen & Erickson, 1986; Bourgeois, 1993). Despite these results, increasing the rate of interaction in older individuals is not enough to strengthen verbal repertoires.

There have been several studies that have evaluated different strategies that can be used to remediate language deficits that are commonly found in older

individuals with aphasia and neurocognitive disorders. This research has focused on the use of echoic repertoires (Dixon et al., 2011) or mand repertoires (Oleson & Baker, 2014). Procedures for transfer of stimulus control are effective at reteaching verbal behavior in older individuals with language deficits (Oleson & Baker, 2014).

## Section 2 Personal Reflection

What type of interventions have you noticed that have been used in older individuals to decrease behaviors that are exhibited or to increase skill acquisition? How have you noticed that preferences have been determined in older populations? Are there different approaches you would consider using with individuals that are older that have not been mentioned in the information provided?

## Section 2 Key Words

Engagement-based reinforcement assessment - assessment that measures the duration of unprompted engagement in an activity

Selection-based reinforcement assessment - assessment that measures an individual's selection of an activity over another activity in a concurrent-operants arrangement.

## Section 3: Behavior Analytic Approaches to Working with the Aging Population

Although there has been a paradigm shift from the medical model to the behavioral model when working with individuals with autism spectrum disorder



(ASD), this is unlikely to occur in long-term care of older individuals. Many individuals that are older exhibit significant health problems that continually need to be monitored and cared for by medical and nursing staff. Additionally, unlike behavior analysts that are able to work with individuals with ASD, most settings that work with individuals that are older do not include a behavior analyst as part of their interdisciplinary team. Most treatment options for individuals that reside in nursing home settings include medication and sensory-based interventions (Baker & LeBlanc, 2011). Behavior analysts need to be cautious when working with this population and continually consider the special needs of the individuals within this population when developing interventions.

## **Steps to Consider when Providing Clinical Services to Individuals that are Older**

A general framework for behavior analysts has been developed in order for behavior analysts to be able to work in underrepresented areas including populations with individuals that are older (LeBlanc et al., 2012). This framework includes two central points of focus. One component includes increasing professional competence with the population that you are working with, and the other component includes identifying and managing employment opportunities.

There are several subcomponents included within increasing professional competence within the population of individuals that are older. These subcomponents include contacting the literature and relevant professional groups, obtaining retraining and supervision, and identifying professional credentials. Behavior analytic research can be contacted through research in behavior analytic journals and gerontology journals as well as aging specific research in gerontology journals. At this time, there is no specific credential that is required to work with older individuals; however, there are educational programs

that offer certificates and educational training in the field of gerontology. In addition to contacting the literature, relevant professional groups such as Alzheimer's Association and Department of Aging can be contacted to increase involvement with individuals in this population.

The second component, which involves identifying and managing employment options, also contains multiple subcomponents. These subcomponents include the development of communication skills that are effective, increasing one's professional profile, deciding on different options for employment, searching for funding sources, and marketing how behavior analysis can be a powerful option for individuals. Communication skills are vitally important within the aging population as interdisciplinary care is ubiquitous. Often, behavior analysts have had several years of experience working as part of an interdisciplinary team with various doctors, nurses, facility managers, and teachers. Each of these individuals have contributed in expanding behavior analytic services and have helped behavior analysts to benefit from training opportunities when working with these individuals. Communication that is deemed effective should avoid technical jargon yet know the technical terms of the professions that are a part of the care of the aging population. Buy-in to behavior analytic approaches can often be achieved quicker by using terms pertinent to elder care correctly so as not to appear as an outsider within the care of the aging population.

An individual's professional profile can be increased through different positions held and opportunities that require development of plans or training of individuals as a method of gaining experience. Additionally, it is important to know that providing behavior analytic services in a nursing home setting can be more costly than if the services are provided within the community. Therefore, additional funding sources may need to be pursued to cover costs for individuals that are in need of behavior analytic services.

## **Approaches to Working with the Aging Population with Behavioral Concerns**

Individuals that are older may be referred for a behavior assessment and for services that provide an intervention for behavioral concerns. Physical and verbal aggression are found to be the most frequent reason for a referral, followed by vocalizations that are disruptive, resistance to help/care, and being intrusive (Turner & Snowdon, 2009). Other behaviors that may require an intervention but receive a referral for services less often include crawling on the floor, disturbance in sleep, hoarding, spitting, and inappropriate urinating.

### ***Aggression***

One of the most challenging behaviors that can be exhibited by individuals that are older and that causes problems in care situations is physical aggression. The aggression is typically directed toward individuals that are within the immediate environment and can result in injuries to caregivers and other individuals that are in the nursing home setting. Elder aggression has been documented as the leading cause of staff burnout and stress (Burgio & Bourgeois, 1992). The time period that aggression occurs most often is during bathing and can often be the only care event that is significantly related to behavior that is aggressive.

Since physical aggression occurs often during care situations, an intervention that is able to aim at increasing the participation or independence of individuals that are older with their own personal care may reduce occurrences of aggressive behavior. Furthermore, an intervention that is able to provide the reinforcer, typically escape, prior to the occurrence of the aggressive behavior would also be anticipated to reduce instances of aggressive behavior.

Research has shown that a social antecedent intervention that uses modeling may be able to increase an older individual's approach to bathing. In a participant

modeling condition, more bath-tolerance steps were able to be taken than in a filmed modeling condition (Cohen-Mansfield & Jensen, 2006). A participant modeling approach includes individuals watching a researcher demonstrate the steps in helping an older individual take a bath, inclusive of the verbal descriptions that are used for each action.

Differential reinforcement of other behavior is an additional method that can be utilized to reduce occurrences of aggression in older individuals. This approach is a consequence manipulation that includes a reinforcer being delivered after a specific period of time where the challenging behavior has not occurred. Research has shown that when differential reinforcement of other behavior was used with six elderly men, 10-minute periods of time that were free of aggression were reinforced by staff attention (Vaccaro, 1988). This resulted in generalized treatment effects from the group setting to the ward environment even at a follow up period of four months. Improved interaction was noted among these individuals as well.

### ***Personal Care***

One area that has been focused on in research is independent personal care where the care staff are taught to provide less hands-on intervention during the personal care routines of individuals that are older. With the use of both antecedent and consequence manipulation in the training of staff, researchers found that nursing assistants were able to learn to provide graduated prompts and praise to encourage the active participation of older individuals in dressing in as little as 30 minutes of training in how to deliver prompts (Engelman et al., 2003).

Additional research has demonstrated the effectiveness of using person-centered showering. Person-centered showering involves the use of choices, covering with towels, distracting attention, the use of bathing products that have been recommended by family members, and modifying the shower spray (Sloane et al.,

2004). This research indicated that in all measures of agitation and aggression, reductions were found when compared to a control group. Occurrences of aggression decreased by 53% in the group that received the person-centered showers.

### ***Disruptive Vocalizations***

Disruptive vocalizations have been characterized as verbal or vocal behaviors that are deemed inappropriate to the context or circumstances in which they occur. They can indicate distress or cause a disturbance to the individuals around them. These behaviors can include loud repetitive requests, self-talk, screaming, negative remarks, cursing, repetitious noises, and continuous requests for help (Cohen-Mansfield, 1986).

Disruptive vocalizations are prevalent in between 10 and 40% of individuals that reside in a nursing home (von Gunten et al., 2008). Unfortunately, these behaviors can result in emotional distress for care staff and can lead to isolation or chemical restraint for older individuals. Often, staff that care for older individuals in a nursing home setting experience more anger and frustration as well as a need to distance themselves from individuals that engage in disruptive vocalizations that those that do not (Draper et al., 2000). These behaviors are typically associated with cognitive, sensory, communication, and physical impairments in individuals. These behaviors have been found to be maintained by attention primarily and escape from demands secondarily (Dwyer-Moore & Dixon, 2007).

When it has been determined that the function that is maintaining the disruptive vocalizations is attention, a straightforward behavioral intervention that includes the withholding of attention for exhibition of disruptive vocalizations as well as providing appropriate attention when an acceptable vocalization is exhibited would be advised. However, this approach of providing differential reinforcement may not be able to be maintained by care staff in a nursing home setting. The staff

may be unwilling to ignore demonstrations of disruptive vocalizations or unable to consistently implement a behavioral intervention that includes extinction of disruptive vocalizations.

Research has shown that severe language deficits have been associated with the exhibition of disruptive vocalizations (Matteau et al., 2003). Therefore, this may reveal that these disruptive vocalizations may function as a communicative purpose for individuals as a method for expressing their needs such as discomfort, pain, thirst, or even hunger. In these situations, it may be best to work to improve or compensate for communication in individuals as they progress in age as a method for decreasing occurrences of disruptive vocalizations. Additionally, research has also indicated that disruptive vocalizations may be a result of material and social deprivation within one's environment and that by improving social interactions, this can then meet some of the unmet needs of older individuals that have been suggested as setting the occasion for occurrences of disruptive vocalizations (Cohen-Mansfield & Werner, 1997).

### ***Intrusiveness and Wandering***

When evaluating behaviors that are considered to be wandering, these behaviors include high-rate purposeless pacing or ambulating into environments where an individual may not be considered as safe. Wandering can become intrusive in nursing home environments when an older individual enters another individual's personal space and environment. This ultimately could result in conflict between the two individuals. Other occurrences of wandering can lead to an individual becoming lost, injured, dehydrated, or overexposed to different elements. Additionally, it can threaten an older individual's placement within their own home.

Functions that maintain wandering may include access to or escape from sensory stimulation. Older individuals may wander as a means for gaining access to

attention from others or as a means to gain access to a preferred item. In other situations, though, wandering may occur from a loss of frontal lobe function, insight, or empathy (Lough & Garfoot, 2007).

Research has indicated that by placing wandering on extinction (i.e., no attention) and providing attention noncontingently in conjunction with access to favored leisure items, this resulted in an 85% reduction in the occurrence of wandering in an individual (Dwyer-Moore & Dixon, 2007). Additionally, other research has indicated that differential reinforcement of other behavior procedures were effective at reducing wandering in individuals where wandering was maintained by attention or access to tangibles or sensory stimulation (Heard & Watson, 1999). These procedures were able to decrease occurrences of wandering by 60% to 80% which further demonstrated that wandering with an apparent neurological basis was sensitive to differential reinforcement contingencies.

Furthermore, less functional approaches have been used to help older individuals learn to discriminate safe from unsafe environments. Researchers have used edible consequences to be able to reinforce walking in safe environments that were indicated by orange signs and then punished through use of loud noises when an individual walked in an unsafe environment that was indicated by a blue sign (Hussian & Davis, 1985). Through use of this procedure, individuals with dementia were able to learn to walk in safe environments and to avoid environments that were unsafe.

### **Section 3 Personal Reflection**

What behaviors have you seen exhibited in older individuals that could benefit from the application of behavior analytic interventions? Are there specific interventions that you believe could be successful based on their effectiveness in other populations?

## Section 3 Key Words

Disruptive vocalizations - verbal or vocal behaviors that are deemed inappropriate to the context or circumstances in which they occur

Person-centered showering - the use of choices, covering with towels, distracting attention, the use of bathing products that have been recommended by family members, and modifying the shower spray

Wandering - high-rate purposeless pacing or ambulating into environments where an individual may not be considered as safe





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