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Cognitive Rehabilitation in Occupational Therapy for Individuals with Dementia

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**Cognitive Rehabilitation in Occupational Therapy
for Individuals with Dementia**

A Scholarly Project

by

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and
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of the

University of North Dakota

for the degree of

Master of Occupational Therapy

Grand Forks, North Dakota

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Chapter 1

Introduction:

According to Small, et al. (1997), an estimated 14 million individuals will have some form of Alzheimer's disease (AD), a type of dementia, by the year 2040. The most common form of dementia is AD, a progressive and irreversible disease with risks of acquiring AD doubling every five years after age sixty-five. Challenges facing occupational therapists working with individuals with dementia include limited resources such as treatment, guidelines, and protocols for use in practice settings. The purpose of this project is to seek out effective cognitive rehabilitation materials suitable for use with individuals with dementia to maintain cognitive function where possible and prolong independence within their environment.

An extensive literature review focuses on cognitive changes associated with dementia, cognitive-based occupational therapy assessments and treatment interventions in order to develop guidelines and protocols for provision of occupational therapy services for individuals with dementia. Of particular interest will be cognitive rehabilitation strategies to address recognition, attention span, memory, sequencing and problem solving, all of which are important for both role performance and community living.

Findings are compiled into a manual suitable for use in facilities such as long term care, Alzheimer's units, home health, and adult day care. Information provided in the manual includes: overview of dementia, description of appropriate cognitive assessments, treatment strategies and techniques, and guidelines for implementing a cognitive rehabilitation program for persons with dementia.

Chapter 2

Literature Review:

General Information:

AD is an under-diagnosed disease in which physicians often do not recognize some of the early warning signs and family members do not report them. The primary risk factors for AD are the patient's age, and family history including genetics and biological factors (Small et. al. 1997). Volicer (2001), reports the number of individuals who will develop dementia is rising at astounding rates and that over half the residents in a nursing home facility have some form of dementia. There are two types of dementia, which are progressive and static or fixed. The progressive type AD, is the most common form of dementia. The static or fixed dementia is the actual loss of tissue resulting from a single major injury such as severe head trauma, cardiac arrest, or cerebral hemorrhage (American Psychiatric Association, 1994). This project is focused on the progressive type of dementia, AD.

There are many causes of dementia and they are separated into three specific categories. The first category describes dementia caused by metabolic and toxic reasons. The second category structural damage and the third category is dementia caused by infections. In it's simplest form, the pathogenesis of the disease can be associated with an excessive number of senile plaques in the cerebral cortex and subcortical gray matter, which contain beta-amyloid and neurofibrillary tangles consisting of tau-protein (American Psychiatric Association, 1994). According to Copstead & Banasik (2000), the main component of tangles is the tau protein known as the neural thread protein. In individuals with AD, this chemically altered tau-protein twists and forms neurofibrillary tangles which are located in nerve cells. This abnormality makes the nerve cell collapse,

and in turn, the cell dies. Unfortunately, there is loss of cognitive function when this abnormality occurs. Other causes that may create memory deficits are physical conditions including hypertension, diabetes, increased age-related memory change, medication, pain, alcohol, and nutrition deficiencies (Agency for Healthcare Policy and Research [AHCPR], 1996).

There are three stages of dementia: mild, moderate, and severe. In the mild stage, the individual has memory difficulties or impairment; however there are minimal deficits in social interaction and task performance. In the moderate stage, the individual displays an increase in disturbing behaviors, along with a decrease in functional performance of daily routines. Finally, in the last severe stage, the individual experiences loss of orientation skills and a further increase in behavioral symptoms (American Psychiatric Association, 1994).

Zolton (1996), indicates memory loss is the most common cognitive impairment among the elderly. Although there is sparing of motor and sensory functions until later stages of AD, changes in cognition are gradual and progressively decline over time (Small, et al. 1997). Since impairment in memory is the primary concern of individuals with dementia, a description of short-term memory (STM), long-term memory (LTM), and the sensory perceptual system is provided in order to understand the cognitive processes involved.

The theoretical perspective on memory according to Atkinson & Shiffrin (1968), indicates STM being significantly impacted for individuals with dementia. STM is considered the activated and/or working memory. There are two components to STM which include information recently received through sensory perceptual memory and the

retrieval of past information from our long-term memory. In other words, STM is the processing aspect to memory. The primary storage for memory entails the most recently received information. The working memory holds the information, makes sense of the information, and prepares the information for long-term storage. The amount of information maintained in STM relies on activation. According to Schacter (1996), if an individual does not use and retrieve this information, it will be lost and forgotten.

The LTM is divided into three storage systems: episodic, semantic, and procedural memory. The episodic system is based on facts and events. The semantic system builds on the episodic memory, which is based on our knowledge and beliefs about facts. The procedural system is the automatic behavioral component, which includes; motor, perceptual motor, and responses. Overall, an individual's knowledge and remembrance for past events are greater. The sensory perceptual memory is another component including visual and auditory information. New visual stimulation lasts milliseconds, whereas an auditory stimulus lasts four to five seconds. The information received through visual and auditory stimuli is stored into the STM and can be transferred into the LTM, in order to recall past events, (Levy, 2001).

Memory changes are a normal process of aging often referred to as age-associated memory impairment. The initial stages present with memory impairment are difficulties in learning new information and retaining information. Other deficits demonstrated with cognitive impairment include the inability to gain knowledge, to adapt to a new environment and/or situation, to think abstractly or complete complex activities, to conceptualize, to problem solve, and to use good judgment (Small, et al. 1997). Due to the deficits even the slightest changes in memory can frustrate elderly

individuals and may affect occupational performances in daily living skills (Albert, 1981).

Specific impairments in performance of activities of daily living (ADLs) include self-care, household management, shopping, money management, play or leisure, community mobility, and socialization. There are safety concerns with individuals who have dementia such as difficulties recognizing potential hazards, anticipating consequences of actions/behaviors, following safety precautions, and responding to emergency situations (“Management of Occupational Therapy Services for Persons with Cognitive Impairments,” 1999). Psychosocial issues that may be apparent include; personality changes, irritability, anxiety, and/or depression. Further cognitive impairments include aphasia, apraxia, disorientation, and visuo-spatial dysfunction (Small, et al. 1997). The project specifically focuses on self-care, play or leisure, and socialization. In addition, overall safety issues are addressed.

Role of Occupational Therapy:

The role of OT can be challenging and diverse. Many individuals who have dementia may not only be experiencing cognitive deficits but other medical conditions. Clients with dementia can live productive and long lives. Rehabilitation is necessary and contributes to this productivity which impacts the client’s cognitive performance.

Occupational therapists focus on purposeful and meaningful activities in order to achieve functional outcomes. These activities are based on interests in which the individual enjoys engaging in whether it be self-care, social participation, and leisure activities. Individuals may find themselves unable to do the activities they once were

able to do. Engaging these individuals in purposeful and meaningful activities can provide hope and accomplishment in their daily lives.

Therapeutic use of self is the basis for optimal quality of care. The characteristics an occupational therapist needs to possess consists of; warmth, genuine care, respect, and dignity to all individuals with whom we serve. An environment that is created with these characteristics will build rapport with the client, therefore helping individuals to achieve their goals and overall life satisfaction.

“By understanding the client’s best ability to function, therapists are in a position to advocate for clients right to use their remaining abilities” (Katz, 1998).

Cognitive Models:

In order to develop a comprehensive treatment plan, specific models can provide a foundation for implementing the appropriate guidelines and approaches to utilize when treating individuals with dementia. There are a variety of cognitive models that emphasize the importance of cognitive rehabilitation. Among those models of importance are those developed by Abreu & Togliola and Allen.

According to Abreu & Togliola (1987), a cognitive rehabilitation model (CRM) was adapted for occupational therapy’s use with cognitively impaired individuals. The CRM is based on information processing theory and learning concepts. Utilizing the CRM helps occupational therapists include the total perceptual processing system in the evaluation and treatment (Luria, 1970). When completing an evaluation with an individual with dementia in CRM, the perceptual processing system is screened for the

following areas: orientation, insight, attention, visual processing, motor planning and cognition. Once the evaluation is completed, appropriate treatment strategies are implemented to enhance the individual's ability to process and organize information efficiently. An occupational therapist will then teach a cognitively impaired individual to facilitate their own performance or learning utilizing specific treatment tools to enhance performance (Abreu & Toglia, 1987).

The three treatment tools include: a teaching learning process; environment; body alignment, positioning, and active movement patterns. The teaching learning process is the interaction between the therapist and client in order to help the client acquire new and more adaptive knowledge, strategies, skills and attitudes. Teaching facilitates learning and the adaptations that are made in the teaching process can address new learning impediments. The teaching/learning strategies are emphasized in the cultural, social and physical environments. When performing various activities, the therapist considers overall body alignment, positioning, and active movement patterns in order for the individual to engage in higher cortical functioning (Abreu & Toglia, 1987).

Claudia Allen's Cognitive Disability Model addresses the client's unidentified information processing components which may be underlying their functional performance pertaining to ADLs and instrumental activities of daily living (IADL). The model assists an occupational therapist in assessment and treatment planning by assessing both cognitive and functional impairments. The cognitive components considered within this model are attention, praxis, and memory (Allen, & Blue, 1998).

Incorporated within Allen's Cognitive Disability Model is a hierarchical approach which consists of 6 cognitive levels used to determine the individuals' level of cognitive

ability/function. The hierarchy of cognitive levels consists of automatic, postural, manual, goal directed, exploratory and planned actions. Level one are automatic actions that are protective reflexes and survival in nature. Level two are postural actions which include: sit, stand, walk, range of motion and push by overcoming gravity during movements. Level three are manual actions of handling objects by repetitiveness and following verbal cues to move on to the next step within an activity/task. Level four are goal directed actions; the individual can move to the next step without cues and can follow directions. Self cares are functionally completed. Level five describes independent learning through exploration. The individual is able to talk and work simultaneously. Personalities can be impulsive and lack good judgment. Level six consists of planned actions with abstract thinking processes. Within the six cognitive levels there are 52 modes, each level contains five modes in two point increments. Each mode defines a specific physical and/or cognitive action capability of an individual (Allen, Earhart, & Blue, 1992).

The Allen' Cognitive Disability Model has been founded to be one of the most accurate screening tools to determine cognitive levels. The Cognitive Disability Model provides information regarding assessments, treating individuals with dementia, and for educating caregivers about the level of assistance needed. The model includes screening tools, craft activities used to determine cognitive change, and ADL's to implement for home programming. Therefore, appropriate treatment can be provided based on their cognitive level in order to keep an individual functional for a longer duration of time (Allen, 1998).

Assessments:

The occupational therapist evaluates the client using skilled observation and formal assessments to identify how performances of daily living tasks are affected by cognitive impairments. Specific assessments to assess perceptual and cognition include: the Assessment of Motor and Process Skills (AMPS), Mini Mental State Examination (MMSE), Kitchen Task Assessment (KTA) and Allen's Cognitive Level Screen (ACLS).

According to Law, Baum and Dunn (2001), the AMPS is utilized to identify specific ADL motor and process skills that affect performance of daily living tasks. The occupational therapist observes the task performance and evaluates the process skills in order to determine; effort, efficiency, safety, and independence with completion of a specific identified task. The process skills include the individual's ability to initiate, acquire, notice and respond, pace, sequence, organize, and terminate functional activity. The AMPS is composed of 56 ADL/IADL standard assessment tasks, however not all tasks need to be assessed. The occupational therapist may limit the choice to 2-3 familiar tasks, with sufficient challenge. The scoring system consists of evaluating 15 motor and 20 process skills rated on a four point scale (1-deficit, 2-ineffective, 3-questionable, and 4-competent), with a total maximum score of 36. Doble, Fisk, Lewis & Rockwood (1999), found that the AMPS is a reliable assessment to implement with individuals with dementia. However, Fisher (1999) determined the AMPS not be used to identify the underlying cognitive and physical impairments. The main advantage in utilizing the AMPS is to determine the strengths and problem areas experienced by individuals with AD (Linacre, 1993 ; Wright & Stone, 1979).

Oakley, Fisher, Sunderland & Hill (1992), conducted a study grouping individuals who have AD and individuals who are cognitively intact. Identification of experienced difficulty relating to ADLs was addressed. Results indicated individuals with AD have greater ADL deficits relating to the underlying declarative memory (knowing what) and relatively intact ADL skills related to the underlying procedural memory (knowing how). The concluding results indicate that ADL deficits can be compensated by adapting the environment and offering verbal/physical cues.

The MMSE is a quick assessment tool for early detection of dementia and entails a simple questionnaire to assess individuals' responses, along with providing an indication of cognitive impairments (Folstein, Folstein, & McHugh, 1975; Small, 2000). The MMSE is composed of three specific cognitive skills including orientation, attention and memory. Orientation refers to time and place. Memory is assessed by the identification of three specific objects previously displayed. Attention and calculation are assessed regarding serial sevens or spelling "world" backwards. Evaluation of language skills are done by naming objects, phrase repetition, following a three step oral command and one step written command, writing a sentence, and copying a design. Total score is 30 points and a score of less than 24 is indicative of cognitive impairment. Although the MMSE is an efficient assessment tool, it relies heavily on verbal skills and may not detect minor cognitive impairments. The MMSE can be repeated over time, which is a beneficial way of tracking cognitive progression and to monitor the effects of treatment (Agency for Health Care Policy and Research, [AHCPR], 1996).

The KTA is a measuring tool pertaining to the level of cognitive support required by an individual with AD to complete a cooking task successfully. The occupational

therapist observes the task performance and evaluates the motor and process skills during a functional task of making cooked pudding. Assessment areas include initiation, organizing, performance of steps, sequencing, judgment/safety and completion. There are four levels of support scored for each observed category: 0 = independent, 1= verbal cues, 2 = physical assistance, and 3 = totally incapable. Scoring ranges from 0-18. The higher the score the individual obtains, the more cognitively impaired. The KTA is a reliable assessment utilized with the dementia population (Law, Baum, & Dunn, 2001).

A cognitive screen that is commonly used in today's treatment settings is the Allen's Cognitive Level Screen (ACLS). The ACLS was developed to measure the changes in the ability to function and facilitate the continuum of care, which means evaluation and treatment must occur simultaneously. The two main areas of focus include attention and memory. An estimation of the individual's ability is obtained by engaging the individual in the completion of a leather-lacing task. The occupational therapist demonstrates and instructs the individual in the leather-lacing stitch. The individual attempts to complete two stitches. When the individual successfully completes the two stitches, the individual can attempt a complex stitch pattern. Once the individual has completed the leather-lacing task, the occupational therapist can determine the appropriate cognitive level. Utilizing this screening tool with an individual with dementia will enable the occupational therapist to assess and reassess, therefore determining any cognitive decline. Assessments that can be utilized within Allen's Cognitive Disabilities Model include the Allen Diagnostic Module (ADM), Routine Task Inventory (RTI), and Contextual Memory Test (CPT) (Asher, 1996).

The ADM is a component of the Allen's Cognitive Disability Model that includes thirty-six craft projects used for moderate to higher functioning individuals. The ADM specifically addresses individuals with cognitive levels from levels three to six: manual, goal directed, exploratory and planned actions. The crafts are used to evaluate new learning in order to assess the individual's capacity to adapt to every environment, (Allen Diagnostic Manual, 1993). The main purpose of the ADM is to reconfirm the determined ACL level of an individual. This is completed by matching the craft project to the determined ACL level/mode. Individual craft activities are chosen based on a rating criterion from the determined ACL level/mode. The rating criteria ranges from 3.0 to 5.8. The length of the ADM varies with the complexity of the craft projects and time ranges from 15 minutes to several days (Allen, Earhart & Blue, 1992).

Allen, Earhart & Blue (1992), states the RTI, also included in the Allen's Cognitive Disability Model, helps verify the ACLS and ADM scores through an analysis of ADL tasks. There are four main disabilities evaluated, which include self-awareness, situational, occupational role, and social role. The self-awareness disability consists of self-care. The situational disability consists of home and community. The occupational role disability consists of planning and organizing. The social role consists of meeting social role consists of meeting social expectations. Gathering additional information consists of self-report, caregiver report, and observation of performance. The score is based on the cognitive level of function rating on a 0.8 to 6.6 scale.

Burns (1992) stated, the CPT is utilized to examine an individual's cognitive operations while performing ADLs. The CPT is composed of six activities that include dressing, shopping, making toast, telephoning, washing, and traveling. These practical

activities will have more relevance to the individual than craft activities. The scoring ranges from level 1 to level 6 for each activity. According to Allen, Earhart, & Blue, (1992), the total test score ranges from 6 – 33. In order to determine the average score, an occupational therapist divides the total score by 6. According to T. Burns (personal communication, October 11, 2002), the revised version of the CPT includes a medication management activity.

Occupational Therapist Guidelines and Caregiver Education:

Guidelines for Occupational Therapy

An occupational therapist should be aware of the following treatment guidelines for individuals with dementia: consider declining physical health, role loss, disengagement, reduced pleasure, decreased self-esteem, and conflicts with family. Declining physical health is known to affect future function. As individuals age, their roles may change creating a sense of loss, which may decrease self-esteem and create a loss of identity. Disengagement and/or reduced pleasure are common experiences with adults sixty-five and older. Conflicts with the family can occur due to role changes (Glantz, 1989).

Individuals with dementia require safety education, physical care, decreased stress, and increased cognitive stimulation. Safety is one of the most important concerns with individuals with dementia. Physical care is a necessity in the later stages of AD, because they have a decrease in functional performance of ADLs. Individuals with dementia require decreased stress within their environment in order to maintain attention

and complete specific tasks. An increase of cognitive stimulation is beneficial in activating the working memory (Mace, 1990).

When an occupational therapist engages individuals into group activities, it is imperative to place the individual according to their identified cognitive level in appropriate activities. A group experience can be adapted to maximize learning according to the purpose of the group and level of functioning with individuals with dementia (Allen, Earhart & Blue, 1992). In the process of group activities the occupational therapist needs to allow enough time for individuals to process new information and organize materials and organize materials/tools (Levy, 2001).

Treatment Strategies/Techniques

A client-centered approach is necessary to meet each individual's needs. According to Frederick, Edney, and Almond-Matangos (2000), occupational therapy interventions need to focus on the individual's strengths to help maintain cognitive performance. A main focus with assessment is to identify an individual's ability to function and select the most appropriate treatment methods and goals in order to match their cognitive abilities (Allen, Earhart, & Blue, 1992). Once the individual engages in an activity the occupational therapist needs to monitor and observe their task performance to ensure maintenance of cognitive skill level. Understanding the individual's coping abilities during treatment will guide the therapist in helping the individual achieve their goals (Colling, 1999).

According to Frederick, Edney, and Almond-Matangos (2000) when an individual demonstrates difficulties in performing activities, an occupational therapist can train new

skills, monitor already acquired skills through assessment/reassessment, teach compensatory/adaptation skills for lost skills, and modify the environment. The most important cognitive skills to be assessed include: recognition, attention span, problem solving, memory and sequencing.

Compensatory techniques may be necessary to maintain an individual's functional abilities with the use of memory aids. The memory aids may include: note and verbal reminders, physical cueing, rehearsal, recognition, and visual aids (Mace & Rabbins, 1981). Other memory enhancement activities are reminiscing and journaling (Colling, 1999). The visual aids, according to Trombly (1997), include items such as color/texture, labels, timers, and safety turn off switches to promote functional abilities within the individual's environment.

Environmental techniques are important when providing care to individuals with dementia. The interventions may include; modifying the environment to avoid over stimulation, promoting rest, and providing encouragement (Colling, 1999). Examples of environmental interventions consist of a calm/relaxed environment, free from distractions/clutter, and adequate lighting in order to maintain an individual's attention (Levy, 2000).

Mace (1990), indicates the importance of engaging individuals in meaningful activities. When engaging individuals in meaningful activities, individuals can increase their self-esteem and self-concept. Placing individuals within group activities will maximize their cognitive function by interacting with others. Colling (1999), also identified the importance of providing activities that are meaningful and purposeful.

Activities that can enhance an individual's performance may include: card games, word puzzles, games, crafts, music, gardening, wood working, and exercising,

Caregiver Education

According to Mace & Rabins (1981), when an individual first demonstrates symptoms of dementia they may physically appear normal; however there are cognitive deficits that are becoming overt. Once the early signs of dementia appear, caregivers can benefit from education regarding an individual's cognitive capabilities and performance. Therefore, caregivers can understand the individual's specific needs and be able to provide the appropriate support as needed.

Safety is a huge concern with individuals with dementia and caregivers need to be educated on specific precautions in order to promote a safe environment (Levy, 1998). Relevant information provided to caregivers will alleviate stress and begin the therapeutic process in caring for individuals with dementia. Caring for an individual with dementia can be difficult and challenging, and may significantly affect the entire family system (Kindig & Carnes, 1993).

A family system has specific rules, beliefs, and values. When these characteristics are challenged there can be a breakdown of the family system. When a breakdown occurs it can have a domino effect because a family system is tightly woven. Communication between the caregiver and the individual will help the family system maintain overall functioning (Qualls, 1998). Many recommendations need to be considered when caring for an individual with dementia.

Initially, a caregiver needs to remember that an individual with dementia is able to realize the changes taking place and in turn may feel lost and anxious. The main recommendations for caregivers include; gain knowledge on dementia, share concerns with the individual, take one day at a time approach, rest, maintain a sense of humor, provide routines that are predictable, keep conversations calm and positive, and limit activity to avoid frustration, negative behaviors, and fatigue. However, when a caregiver engages an individual into specific activities they must remember to limit the amount of assistance provided, otherwise individuals with dementia may have a decrease in cognitive abilities and their independence. Caregivers need to accept the individual's cognitive skills that are lost and therefore simplify activities (Mace & Rabins, 1981).

Chapter 3

Activities/Methods:

The topic chosen is dementia due to the high prevalence rate among the elderly population, age 65 and over. Because of the aging “baby boom” generation of the 1950’s, the demands for health care services are on the rise for individuals with dementia. Emphasizes is on the importance of developing a comprehensive, cognitive treatment plan to meet the demands of the elderly population. Research on this topic is important and relevant for occupational therapists in order to provide the most updated and effective treatment approach.

The authors have expanded their knowledge regarding dementia and the affects on individual’s functional capabilities. Upon completion of the literature review, the results included a manual with an overview/educational material regarding dementia, appropriate cognitive assessments, treatment strategies/techniques, and specific guidelines for implementing a cognitive rehabilitation program for individuals with dementia.

An extensive literature review was conducted using a variety of resources. The method involved strategic planning of specific areas to be researched including: general information on dementia, theorists/models, cognitive assessments, interventions, and educational guidelines for caregivers. The resources were accessed through Cinahl, OT search, and reliable Internet sources at the medical library located at the University of North Dakota. Many of the referenced materials were journal articles, which contained studies or general information regarding individuals with dementia. Other referenced resources were located in textbooks from the medical library and from the occupational

therapist's personal libraries. A total of 37 relevant resources were obtained.

The summaries of the source documents were sorted, organized, and compiled into a binder and placed under specific headings. The headings included general information, theorists, assessments, treatment strategies/interventions, and educational guidelines for caregivers. By organizing the information into a binder, the material was easily available for the scholarly project. The process of inclusion/exclusion was done by reviewing the literature and summaries within the binder, and discarding non-pertinent material.

Once the relevant materials were organized, the summaries were compiled into chapter two of the manual, the literature review. Chapter four presents the identified assessments, treatment strategies and guidelines that were found to be the most beneficial for implementation of a cognitive rehabilitative program for the elderly with dementia. Chapter five is a summary and conclusion of the findings of the literature review, along with a discussion of limitations and future direction for occupational therapists.

Cognitive Rehabilitation in Occupational Therapy

For Individuals with Dementia

Chapter 4: Product

The manual is an overview and educational tool regarding dementia. Specific impairments are identified in order to understand the effects of dementia. Appropriate cognitive assessments are provided to utilize with individuals with dementia that are based on specific cognitive models. Guidelines and interventions for occupational therapists and caregivers will assist with implementation of a cognitive rehabilitation program.

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Overview of Dementia

Dementia is one of the major diseases affecting the elderly population.

Two Specific Categories of Dementia:

- 1) *Progressive Dementia*-this is the Alzheimer's type dementia, AD, which is the most common form, noted as a gradual onset, progressive and irreversible disease.
- 2) *Static or Fixed Dementia*-this is the actual loss of tissue resulting from a single major injury such as severe head trauma, cardiac arrest, or cerebral hemorrhage.

Etiology of Dementia :

There are many causes of dementia, which are categorized by three specific categories.

- 1) *Metabolic and Toxic*
- 2) *Structural Damage*
- 3) *Infections*

Pathogenesis:

Dementia can be associated with the number of senile plaques in the cerebral cortex and subcortical gray matter, which contain beta-amyloid and neurofibrillary tangles consisting of mainly tau-protein. In individuals with AD, this chemically altered tau-protein twists and forms these neurofibrillary tangles, which are located in nerve cells. This abnormality makes the nerve cell collapse and the cell dies. Unfortunately, there is loss of cognitive function when this abnormality occurs.

Three Stages of Dementia:

- 1) *Mild* - the individual has memory difficulties of impairment, however there are minimal deficits in social interaction and task performance.
- 2) *Moderate* - the individual displays an increase in disturbing behaviors, along with a decrease in independent performance of daily routines.
- 3) *Severe* - the individual experiences loss of orientation skills and displays an increase in behavioral symptoms.

Three Primary Cognitive Processes Involved:

Memory loss is the most common cognitive impairment among the elderly. Although there is sparing of motor and sensory functions until later stages of AD, changes in cognition are gradual and progressively decline over time. Since impairment in memory is the primary concern of individuals with dementia, a description of STM, LTM, and the sensory perceptual system is provided in order to understand the cognitive processes involved. A theoretical perspective on memory indicates STM being significantly impacted for individuals with dementia. STM is considered the activated and/or working memory.

Two components of STM:

- 1) *Primary Storage* – is the most recently received information through sensory perceptual memory
- 2) *Working Memory* – is the retrieval of past information from the long term memory which holds the information, makes sense of the information, and prepares information for long-term storage

*Note: The amount of information maintained in STM relies on activation. If an individual does not use and retrieve this information, it will be lost and forgotten.

Long-Term Memory: Three Storage Systems

- 1) *Episodic* – this storage system is based on facts and events
- 2) *Semantic* – this builds on the episodic memory, which is based on our knowledge and beliefs about facts
- 3) *Procedural* – this storage is the automatic behavioral component which includes; motor, perceptual motor, and responses

*Note: Overall, an individual's knowledge and remembrance for past events are greater.

Sensory Perceptual Memory: Two Components

- 1) *Visual* – new visual stimulation lasts milliseconds
- 2) *Auditory* – new auditory stimulation lasts 4 to 5 seconds

*Note: The information received through visual/auditory stimuli is stored into the STM and can be transferred into the LTM in order to recall past events.

Suggested Readings

American Psychiatric Association, (1994). Diagnostic and statistical manual of mental disorder: Task Force on DSM-IV. (4th ed). 133. Washington, DC: American Psychiatric Association.

Specific Impairments in Cognitive Functioning

- √ Learning new information and retaining information are difficult for an individual with dementia due to STM loss and the inability to transfer the information into LTM storage. Repeating specific activities will strengthen and maintain memory skills.

- √ AD individuals have difficulties with adapting to unfamiliar environments and situations. Familiar environments/situations can enhance the individual's overall functional performance.

- √ An individual cannot abstractly think or complete complex activities if their cognitive level has been determined to be at ACLS level's 1 through 5.

- √ Since an individual with dementia has difficulties with abstract thinking, conceptualization is also an obstacle when trying to formulate thoughts and ideas. Compensatory techniques can provide ways to overcome these impairments by engaging in simple activities and instructions.

- √ Problem solving and good judgment are areas of concern with individuals with AD due to the inability to identify solutions to potential harmful situations. Adaptations/modifications are necessary in order to promote a safe environment.

Specific Functional Impairments

The underlying cognitive impairments affect the performance of self-care, play/leisure, and socialization activities.

Self-Care

Self-care tasks are an important part of an individual's daily routine. When an individual with dementia completes self-care activities, compensatory techniques and environmental modifications may be required. Many treatment interventions can be utilized in order to promote functional performance of daily living tasks.

Play/Leisure

Play and leisure activities are vitally important to maintain. An individual with dementia may lose interest or have difficulties with performing the activities that they were once able to complete. There are many activities that can be chosen in order to engage in familiar tasks.

Socialization

Socialization is the key element in keeping the mind productive. By having interactions with others, memory skills can be enhanced. Self-esteem and self-concept are increased when participating in group activities.

Role of Occupational Therapy

The role of OT can be challenging and diverse. Many individuals who have AD may not only be experiencing cognitive deficits but other medical conditions. Individuals with AD can live productive and long lives. Rehabilitation is necessary and contributes to this productivity, which impacts the client's cognitive performance.

Occupational therapists focus on purposeful and meaningful activities in order to achieve functional outcomes. These activities are based on interests, which the individual enjoys engaging in whether it be self-care, social participation, and leisure activities. Individuals may find themselves unable to do the activities they once were able to do. Engaging these individuals in purposeful and meaningful activities can provide hope and accomplishment in their daily lives.

Therapeutic use of self is the basis for optimal quality of care. The characteristics an occupational therapist needs to possess consists of; warmth, genuine care, respect, and dignity to all individuals with whom we serve. An environment that is created with these characteristics will build rapport with the client, therefore helping individuals to achieve their goals and overall life satisfaction.

“By understanding the client's best ability to function, therapists are in a position to advocate for clients right to use their remaining abilities” (Katz, 1998).

Cognitive Models of Practice

The Cognitive Rehabilitation Model (CRM)

The cognitive rehabilitation model (CRM) was adapted for occupational therapy's use with cognitively impaired individuals. The CRM is based on information processing theory and learning concepts. Utilizing the CRM helps occupational therapists include the total perceptual processing system in the evaluation and treatment. When completing an evaluation with an individual with dementia in CRM, the perceptual processing system is screened for the following areas: orientation, insight, attention, visual processing, motor planning and cognition. Once the evaluation is completed, appropriate treatment strategies are implemented to enhance the individual's ability to process and organize information efficiently. An occupational therapist will then teach a cognitively impaired individual to facilitate their own performance or learning utilizing specific treatment tools to enhance performance.

The three treatment tools include: a teaching learning process; environment; body alignment, positioning, and active movement patterns. The teaching learning process is the interaction between the therapist and client in order to help the client acquire new and more adaptive knowledge, strategies, skills and attitudes. Teaching facilitates learning and the adaptations that are made in the teaching process and can address new learning impediments. The teaching/learning strategies are emphasized in the cultural, social and physical environments. When performing various activities the therapist considers overall body alignment, positioning, and active movement patterns in order for the individual to engage in higher cortical functioning.

Suggested Readings

Abreu, B. C., & Togli, J. P. (1987). Cognitive rehabilitation: A model for occupational therapy. The American Journal of Occupational Therapy, 41 (7), 439-446.

The Allen's Cognitive Disabilities Model

Claudia Allen's Cognitive Disability Model addresses the client's unidentified information processing components which may be underlying their functional performance pertaining to ADLs and instrumental activities of daily living (IADL). The model assists an occupational therapist in assessment and treatment planning and by assessing both cognitive and functional impairments. The cognitive components considered within this model are attention, praxis, and memory.

Incorporated within Allen's Cognitive Disability Model is a hierarchical approach which consists of 6 cognitive levels used to determine the individuals' level of cognitive ability/function. The hierarchy of cognitive levels consists of automatic, postural, manual, goal directed, exploratory and planned actions. Level one are automatic actions that are protective reflexes and survival in nature. Level two are postural actions which include: sit, stand, walk, range of motion and push by overcoming gravity during movements. Level three are manual actions of handling objects by repetitiveness and following verbal cues to move on to the next step within an activity/task. Level four are goal directed actions; the individual can move to the next step without cues and can follow directions. Self cares are functionally completed. Level five describes independent learning through exploration. The individual is able to talk and work simultaneously. Personalities can be impulsive and lack good judgment. Level six consists of planned actions with abstract thinking processes. Within the six cognitive levels there are 52 modes, each level contains five modes in two point increments. Each mode contains a specific breakdown of action and completion to the next level.

The Allen' Cognitive Disability Model has been founded to be one of the most accurate screening tools to determine cognitive levels. The Cognitive Disability Model provides information regarding assessments, treating individuals with dementia, and for educating caregivers about the level of assistance needed. The model includes screening tools, craft activities used to determine cognitive change, and ADL's to implement for home programming. Therefore, appropriate treatment can be provided based on their cognitive level in order to keep an individual functional for a longer duration of time.

Suggested Readings

Allen, C. K., Earhart, C. A. & Blue, T. (1992). Treatment Goals for the Physically and Cognitively Disabled, Rockville, MD: The American Occupational Therapy Association Incorporated.

Assessment of Motor and Process Skills

(AMPS)

Description:

The AMPS is utilized to identify specific ADL motor and process skills that affect performance of daily living tasks. The occupational therapist observes the task performance and evaluates the process skills in order to determine; effort, efficiency, safety, and independence with completion of a specific identified task.

Process Skills Include:

Initiation	Pace
Acquire	Sequence
Notice	Organize
Respond	Termination

Composed Of:

56 ADL/IADL standardized assessment tasks

Scoring:

Evaluation of 15 motor and 20 process skills rated on a 4-point scale

1=deficit 2=ineffective 3=questionable 4=competent

Total maximum score of 36

Additional Information:

The occupational therapist administering the AMPS may limit the choice to 2-3 familiar tasks, however with sufficient challenge.

The main advantage of the AMPS is the ability to determine strengths and problem areas.

The AMPS is not used to identify the underlying cognitive and physical impairments.

The AMPS is a reliable assessment to implement with individuals with dementia.

Mini Mental State Examination

(MMSE)

Description:

The MMSE is a quick assessment tool for early detection of dementia and entails a simple questionnaire to assess individuals' responses, along with providing an indication of cognitive impairments.

Composed Of:

Orientation-time and place

Memory-three specific objects

Attention/Calculation-serial 7's or spelling "world" backwards

Language-naming objects

Phrase Repetition

Follow a 3-step oral command

Follow a 1-step written command

Write a sentence

Copy a design

Scoring:

Total maximum score is 30 points

A score of <24 is indicative of cognitive impairment

Additional Information:

The MMSE can be repeated over time to allow tracking of cognitive progression and to monitor the effects of treatment.

The MMSE is an efficient assessment tool, however the evaluation relies heavily on verbal skills and may not detect minor cognitive impairments.

Kitchen Task Assessment

(KTA)

Description:

The KTA is measurement tool pertaining to the level of cognitive support required by an individual with AD to complete a cooking task successfully. The occupational therapist observes the task performance and evaluates the motor and process skills during a functional task of making cooked pudding.

Observed Categories:

Initiation	Sequencing
Organizing	Judgment/Safety
Performance of steps	Completion

Composed Of:

A cooking task of making pudding

Scoring:

There are 4 levels of support scored for each observed category.

0=independent

1=verbal cues

2=physical assistance

3=totally incapable

Scoring ranges from 0-18

The >the score the more cognitively impaired

Additional Information:

The KTA is a reliable assessment utilized with AD individuals.

Allen's Cognitive Level Screen

(ACLS)

Description:

The ACLS is a hierarchal approach that includes 6 cognitive levels, with an additional 52 modes of performance in order to determine the individual's level of cognitive difficulty. The two main areas of focus include attention and memory. An estimation of the individual's ability is obtained by engaging the individual in the completion of a leather-lacing task. The occupational therapist demonstrates and instructs the individual in the leather lacing stitch. The individual attempts to complete two stitches. When the individual successfully completes the two stitches, the individual can attempt a complex stitch pattern. Once the individual has completed the leather-lacing task, the occupational therapist can determine the appropriate cognitive level. Further assessments that can be utilized within Allen's model include the ADM, RTI, and CPT.

Composed Of:

6 Cognitive Levels

Level 1=Automatic Actions

Level 4=Goal Directed Actions

Level 2=Postural Actions

Level 5=Exploratory Actions

Level 3=Manual Actions

Level 6=Planned Activities

52 Modes of Performance – Each cognitive level contains five modes in two point increments. Each mode defines a specific physical and/or cognitive action capability of an individual.

Scoring:

The individual is scored on the determined cognitive level 1 – 6 according to the completion of stitches.

Additional Information:

Utilizing this screening tool with an individual with dementia will enable the occupational therapist to assess and reassess, therefore determining any cognitive decline.

Allen Diagnostic Module

(ADM)

Description:

The ADM consists of 36 craft projects and is utilized for moderate to higher functioning individuals and to evaluate new learning in order to assess the individual's capacity to adapt to every environment. Specifically, the ADM addresses individuals with cognitive levels 3 to 6 (manual, goal directed, exploration, and planned actions). The main purpose of the ADM is to reconfirm the determined ACL level of an individual. This is completed by matching the craft project to the determined ACL level/mode.

Composed Of:

36 craft projects

Scoring:

Individual craft activities are chosen based on rating criteria from the determined ACL level/mode. The rating criteria range from 3.0 to 5.8.

Additional Information:

The length of the ADM varies with the complexity of the craft projects and time ranges anywhere from 15 minutes to several days.

Routine Task Inventory

(RTI)

Description:

The RTI consists of four main behavior disabilities, which is comprised of eight activities that are mainly important to individuals. The RTI helps verify the ACLS and ADM scores by implementing an activity analysis of ADL tasks.

Composed Of:

4 Categories if Disability Assessed

Self-awareness – consists of self-care

Situational – consists of home and community activities

Occupational Role – consists of planning and organizing

Social Role – consists of meeting social expectations

Scoring:

Score is based on the cognitive level of function rating on a 0.8 – 6.6 scale.

The RTI is scored per self-report, caregiver report, and observation of performance.

Cognitive Performance Test (CPT)

Description:

The CPT is utilized to examine an individual's cognitive operations while performing ADL's.

Composed Of:

7 Activities

Dressing	Telephoning
Shopping	Washing
Making toast	Traveling
Medication Management	

Scoring:

The scoring ranges from level 1 to level 6 for each activity. Total test score ranges from 6 – 33. In order to determine the average score, an occupational therapist divides the total by 6.

Additional Information:

The advantage in using the CPT is that practical activities will have more relevance to the individual than craft activities.

Assessment Resources

AMPS

Available from: AMPS Intl., Inc.

PO Box 42

Hampton Falls, NH 03844

<http://www.ampsintl.com>

MMSE

Available from: Folstein, M., Folstein, S.E., & McHugh, P.R. (1975).

“Mini-Mental State” a Practical Method for Grading the Cognition of Patients for the Clinician. Journal of Psychiatric Research, 12 (3), 189 – 198.

KTA

Available: Published in: Baum, M. C., & Edwards, D. F. (1993). Cognitive performance in senile dementia of the Alzheimer type: A Kitchen Test Assessment. American Journal of Occupational Therapy, 47 (5), 431-436.

ACLS

Available from: S & S Worldwide

www.allen-cognitive-levels.com

For more information re: the Allen Model and

Application contact:

Allen Cognitive Advisors, LTd.

Debbie Olin

1923 Paso Roble Way

Madison, WI 53716

ADM

Available from: S & S Worldwide

www.allen-cognitive-levels.com

For more information re: the Allen Model and

Application contact:

Allen Cognitive Advisors, LTd.

Debbie Olin

1923 Paso Roble Way

Madison, WI 53716

RTI and CPT

Published in: Allen, C. K., Earhart, C. A., & Blue, T. (1992). Occupational therapy treatment goals for the physically and cognitively disabled.

Bethesda, MD: American Occupational Therapy Association, 54-68.

For more information contact: Theresa Burns, OTR

Grecc 11G

Veterans Affairs Medical Center

One Veteran's Drive

Minneapolis, MN 55417

Suggested Reading:

Katz, M. (1998). Cognition and occupation in rehabilitation: Cognitive models for intervention in occupational therapy. Bethesda, MD: The American Occupational Therapy Association, Inc.

Occupational Therapist Guidelines and Caregiver Education

Guidelines for Occupational Therapy

An occupational therapist should be aware of the following treatment guidelines for individuals with dementia: consider declining physical health, role loss, disengagement, reduced pleasure, decreased self-esteem, and conflicts with family. Declining physical health is known to affect future function. As individuals age, their roles may change creating a sense of loss, which may decrease self-esteem and create a loss of identity. Disengagement and/or reduced pleasure are common experiences with adults sixty-five and older. Conflicts with the family can occur due to role changes.

Individuals with dementia require safety education, physical care, decreased stress, and increase cognitive stimulation. Safety is one of the most important concerns with individuals with dementia. Physical care is a necessity in the later stages of AD, because they have a decrease in functional performance of ADLs. Individuals with dementia require decreased stress within their environment in order to maintain attention and complete specific tasks. An increase of cognitive stimulation is beneficial in activating the working memory.

When an occupational therapist engages individuals into group activities, it is imperative to place the individual according to their identified cognitive level in appropriate activities. A group experience can be adapted to maximize learning according to the purpose of the group and level of functioning with individuals with dementia. In the process of group activities the occupational therapist needs to allow enough time for individuals to process new information and organize materials/tools.

Suggested Readings

Levy, L. L. (2001, April). Memory processing and the older adult: What practitioners need to know. AOTA Continuing Education Article, CE, 1 - 8.

Occupational Therapy Guidelines

- ☀ Client-centered approach to meet each individual's needs
- ☀ Interventions need to focus on the individual's strengths to help maintain cognitive performance
- ☀ Identify ability to function through skilled and formal observations
- ☀ Understand the individual's coping abilities during treatment to help individuals achieve their goals
- ☀ Select the most appropriate treatment methods and goals in order to match their cognitive abilities
- ☀ Monitor and observe task performance to ensure maintenance of skill level

Compensatory Techniques

Memory Aids for Self-Care Activities

Note Reminders

- ☼ Label contents of drawers, closets, doors, and cabinets
- ☼ Create a daily routine list
- ☼ Personal reminder notes

Verbal Cueing

- ☼ Sequence of clothing
- ☼ Grooming and hygiene initiation
- ☼ Initiation/completion of eating meals

Physical Cueing

- ☼ Hand/place items in view
- ☼ Lead individual to activities as necessary
- ☼ Assist individuals in ADLs when required

Visual Cueing

- ☼ Color/texture to promote awareness

Recognition

- ☼ Place familiar toileting supplies in view
- ☼ Have individual choose appropriate seasonal clothing
- ☼ Recognizing meal times

Memory Enhancement Interventions

Memory enhancement activities are important for individuals with AD. By engaging in the recommended interventions, an individual with AD can maintain their cognitive functioning for a longer duration of time. Since there are a wide variety of memory enhancement activities to choose from, individuals can participate in those of interest.

Journaling	Reminiscing	Rehearsal
Summarize Daily Activities Examples: 1) Morning activities 2) Afternoon activities 3) Evening activities	Reminiscing Magazines Examples: 1) Commercially produced 2) General	Repeat Key Information Examples: 1) Meal times 2) Social commitments
Thoughts and Feelings Examples: 1) How are you feeling today? 2) What occurred after feeling a certain way?	Story Telling Examples: 1) Childhood experiences 2) Significant events 3) Work history	Recite Stories Examples: 1) Newspaper story 2) Pre-printed story lines
Summarize Life Events Examples: 1) Write about past Events 2) Write down interests for play/leisure activities	Current/Past Events Examples: 1) Favorite past times 2) Favorite current activities 3) Favorite animals/people	Repeating Steps of Tasks Examples: 1) Recipe steps 2) Daily ADLs/IADLs 3) Craft activities

Purposeful and Meaningful Activities

When engaging individuals in meaningful activities, individuals can increase their self-esteem and self-concept. Placing individuals within group activities will maximize their cognitive function by interacting with others. Activities that can enhance an individual's performance are listed below. The following activities can address recognition, attention span, memory, sequencing, and problem solving.

Activities

<i>Card Games</i>	<i>UNO</i>	<i>Solitaire</i>	<i>Kings in the Corner</i>	<i>Go Fish</i>
<i>Word Puzzles</i>	<i>Crossword</i>	<i>Word Search</i>	<i>News Paper Jumbo</i>	<i>Word Scramble</i>
<i>Games</i>	<i>Bingo</i>	<i>Memory Games</i>	<i>Puzzles</i>	<i>Board Games</i>
<i>Crafts</i>	<i>Ceramics</i>	<i>Wreaths</i>	<i>Needlework</i>	<i>Placemats</i>
<i>Music</i>	<i>Singing</i>	<i>Dancing</i>	<i>Kazoo</i>	<i>Relaxation</i>
<i>Gardening</i>	<i>Plant</i>	<i>Water</i>	<i>Weed</i>	<i>Flower Arrangement</i>
<i>Woodworking</i>	<i>Birdhouses</i>	<i>Shelving</i>	<i>Decorative Boxes</i>	<i>Picture Frames</i>
<i>Exercising</i>	<i>Basic Stretching</i>	<i>Walking</i>	<i>Low Resistance Strengthening</i>	<i>Stationary Bike</i>

Suggested Readings

Colling, B. K. (1999). Passive behaviors in dementia: Clinical application of the need-driven dementia – compromised behavior model. Journal of Gerontological Nursing, 25 (9), 27-32.

Caregiver Education

When an individual first demonstrates symptoms of dementia they may physically appear normal; there are no outward signs as to the odd behaviors that are becoming overt. An individual with dementia is able to realize the changes taking place and in turn may feel lost and anxious. Once the early signs of dementia appear, caregivers can benefit from education regarding an individual's cognitive capabilities and performance. Therefore, caregivers can understand the individual's specific needs and be able to provide the appropriate support as needed. Relevant information provided to caregivers will alleviate stress and begin the therapeutic process in caring for individuals with dementia. Communication between the caregiver and the individual is vitally important to maintain overall functioning of the family system.

Recommendations for Caregivers:

- ☀ Gain knowledge on dementia
- ☀ Share concerns with the individual
- ☀ Take one day at a time approach
- ☀ Rest
- ☀ Maintain a sense of humor
- ☀ Provide routines that are predictable
- ☀ Keep conversations calm and positive
- ☀ Limit activity to avoid frustration, negative behaviors, and fatigue
- ☀ Limit the amount of assistance provided; otherwise the individual may have a decrease in cognitive abilities and their independence
- ☀ Accept the individual's cognitive skills that are lost
- ☀ Simplify activities
- ☀ Be aware of safety precautions

SAFETY

Create a safe environment by preventing accidents ☺

Prevent Falls

- √ Remove throw rugs from all areas of the environment
- √ Remove stairwell clutter
- √ Never stand on an unstable object
- √ Use adequate lighting and night light
- √ Use non-skid bathmat
- √ Place items most often used within reaching distance
- √ Install grab bars in bathrooms
- √ Secure railings
- √ Remove tripping hazards such as electrical cords
- √ Wear shoes that are safe
- √ Seek medical help for vision/hearing loss
- √ Monitor medication use that may cause confusion/dizziness
- √ Use an emergency alarm system to alert others of falls

Remove potentially dangerous items

- √ Sharp or dangerous items
- √ Outside equipment that may be dangerous such as power-operated equipment
- √ Lock up poisons or guns
- √ Alcohol/drugs
- √ Small objects that might be eaten such as pins or buttons

Prevent Fires

- √ Keep flammable items away from stove/oven
- √ Obtain smoke alarm
- √ Limit amount of cooking
- √ Use timer when cooking

Specific issues

- √ Make a list of emergency phone numbers to be placed in every room
- √ Obtain medication organizer
- √ Contact neighbor or friend on a daily basis
- √ Call primary physician when there are questions concerning medications or general health issues

The intended purpose of the manual serves as a resource on dementia information, assessments, guidelines for occupational therapists and caregiver education, along with interventions. Occupational therapists who work with individuals with dementia have the educational background in order to successfully treat this population. The cognitive rehabilitation material offers direction in a concise manner to address a few of the issues and deficits affecting individuals with dementia. The manual does not cover all the impairments in functional performance. However, the material and resources provided will guide occupational therapists throughout the treatment process in caring for individuals with dementia.

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Chapter 5

Conclusion/Summary

Throughout the literature review, it is apparent that dementia can significantly impact an individual's overall functioning. A general overview of dementia is provided in order to understand the affects of the disease and how impairments affect an individual's daily living performance. By providing cognitive rehabilitation interventions an individual with AD can maintain cognitive functioning for a longer duration of time.

Occupational therapists play a key role in promoting maximum levels of occupational performance with individuals who have cognitive impairments. Occupational therapists are uniquely prepared to provide an appropriate and beneficial care plan; it is recommended that individuals with dementia receive occupational therapy services. Occupational therapists provide genuine care and warmth to individuals with dementia. A client-centered approach is important to occupational therapists because goals are identified by the individual in order to meet their needs. The emphasis is on engaging individuals with purposeful and meaningful activities in order to maintain self-esteem and overall life satisfaction.

The theoretical perspectives: Cognitive Rehabilitation Model and Allen's Cognitive Disabilities Model are the foundation for occupational therapy services when implementing a treatment plan with individuals with dementia. Research identified the following cognitive assessments to be the most appropriate; the AMPS, MMSE, KTA and the ACLS. Specific education and guidelines were emphasized for the therapist and caregiver to implement with individuals with dementia.

Limitations of this research project did not address behavior components that occur with AD and/or other physical medical conditions that may affect an individual's cognition. Detailed descriptions of methods used to select members of cognitive level-specific groups, necessary adaptations to the activities to accommodate cognitive levels, or the full scope of ADM activities/goals were not addressed.

Further research is needed in order to address all the needs of the elderly that may affect their daily functional performance. Research on behavioral characteristics associated with dementia and interventions is needed in order to assist occupational therapists and caregivers when caring for an individual with dementia.

The intent of this manual is to provide a treatment intervention tool for occupational therapists to utilize when treating individuals with dementia in the community setting. Community facilities could include: long term care, Alzheimer's units, home health, and adult day care centers.

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