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REVIEW ARTICLE

Dementia Seen from The Lens of An Educational Therapist

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ABSTRACT

Dementia is often seen as a multifaceted syndrome that is characterized by a progressive decline in cognitive function. Such a decline results in significantly impairing an individual's ability to perform daily activities like feeding, dressing, personal hygiene, moving around and toileting, thus affecting personal independence. Instead of looking at dementia as a specific disease, it is actually a collective term encompassing various symptoms affecting memory, thinking, and social abilities. Patients with dementia face substantial challenges like shouting, wandering, throwing objects and even repetitive talking. These challenges often affect patient's families and caregivers as well as impacting quality of life and posing significant socioeconomic burdens on healthcare systems worldwide. This article attempts to describe the role of an Educational Therapist in helping individuals with dementia.

Keywords: *Coping strategies, Dementia assessment, Dementia types*

1. INTRODUCTION

Dementia is defined as a complex syndrome characterized by a decline in cognitive function that impairs an individual's ability to perform daily activities. It is not a specific disease but rather a collective term for various symptoms affecting memory, thinking, and social abilities (American Psychiatric Association, 2013). The most common cause of dementia is neurodegenerative diseases. In such diseases, proteins clump together in a rather abnormal manner and they exist to damage the healthy neurons, causing the latter to malfunction and die (Klimaschewski, 2022), and thus starts to trigger the degenerative process. According to Farioli-Vecchioli et al., (2022), the brain starts as early as a decade or more before memory and other cognitive problems appear. The damage often begins in the hippocampus, which is the part of the brain essential in forming memories. When that happens, the patient experiences a loss of memory and fails to make new, long-term memories causing a rise of a condition called amnesia.

Dementia comes in different forms, each with its own unique etiologies, clinical presentations, and prognoses (Wolters & Ikram, 2019). It is very useful to understand the different types of dementia since accurate diagnosis, appropriate management will give rise to the different targeted interventions. This paper provides a comprehensive overview of the four primary types of dementia, namely Alzheimer's disease, vascular dementia, Lewy body dementia, and frontotemporal dementia, bring in each type of dementia its key characteristics and clinical manifestations.

2. TYPES OF DEMENTIA

2.1 Alzheimer's Disease

Alzheimer's disease is the most prevalent form of dementia, accounting for approximately 60-70% of all cases (Alzheimer's Association, 2021). It is most recognized as progressive accumulation of abnormal protein aggregates, including beta-amyloid plaques and tau tangles, in the brain (Herrup, 2015). These pathological changes are often the start of deterioration of neuronal function and connectivity, primarily affecting regions involved in memory, learning, and cognitive processing (Jakob-Roetne & Jacobsen, 2009). The hallmark symptoms of Alzheimer's disease include progressive memory loss, cognitive decline, language impairment, disorientation, and behavioral changes (Alzheimer's Association, 2021).

2.2 Vascular Dementia

Vascular dementia arises from impaired blood flow to the brain, typically due to stroke, small vessel disease, or other vascular pathologies (Gorelick et al., 2011). Unlike Alzheimer's disease, which exhibits a gradual onset and progression, vascular dementia often follows a stepwise decline pattern, with symptoms manifesting suddenly or progressing in a step-by-step manner following each vascular event (Pendlebury & Rothwell, 2019). The clinical presentation of vascular dementia varies depending on the location and extent of cerebrovascular damage but commonly includes executive dysfunction, attention deficits, gait disturbances, and urinary incontinence (Gorelick et al., 2011).

2.3 Lewy Body Dementia

Lewy body dementia is characterized by the presence of abnormal protein aggregates, known as Lewy bodies, in the brain's cortical and subcortical regions (McKeith et al., 2017). These proteins eventually disrupt neuronal function and neurotransmitter signaling, leading to a constellation of cognitive, motor, and psychiatric symptoms (McKeith et al., 2017). Key features of Lewy body dementia include fluctuating cognition, visual hallucinations, parkinsonism, and rapid eye movement (REM) sleep behavior disorder (McKeith et al., 2017). Additionally, individuals may experience autonomic dysfunction, such as orthostatic hypotension, constipation, and urinary retention (McKeith et al., 2017).

2.4 Frontotemporal Dementia

Frontotemporal dementia encompasses a group of neurodegenerative disorders characterized by progressive degeneration of the frontal and temporal lobes of the brain (Rascovsky et al., 2011). Unlike Alzheimer's disease, which primarily affects memory and cognitive function, frontotemporal dementia predominantly impairs behavior, personality, and language abilities (Rascovsky et al., 2011). There are three main subtypes of frontotemporal dementia: behavioral variant frontotemporal dementia, semantic variant primary progressive aphasia, and non-fluent variant primary progressive aphasia (Rascovsky et al., 2011). Individuals with Frontotemporal Dementia may exhibit disinhibition, apathy, compulsive behaviors, social withdrawal, and changes in dietary preferences (Rascovsky et al., 2011).

In summary, dementia is actually a diverse spectrum of neurological disorders, each with its unique etiology, clinical manifestations, and prognostic implications. Accurate diagnosis and management of dementia require a comprehensive understanding of its various subtypes, facilitating personalized treatment approaches and optimizing patient outcomes. On the other hand, it is worth noting that not all symptoms associated with lapses of memory, challenges in paying attention, regulating emotions or difficulty in organizing are dementia related. Contrary to this, there is also another neurodegenerative disorder called Pseudodementia which is a condition in which individuals experience cognitive impairment that mimics the symptoms of true dementia, such as Alzheimer's disease. It is often associated with mood disorders, particularly depression. Core symptoms include memory loss, difficulty concentrating, and impaired judgment. Correlated symptoms involve emotional and psychological aspects, like apathy and sadness. Secondary symptoms may include physical complaints or changes in appetite and sleep patterns. Artifactual symptoms can arise from factors like stress or medication side effects. It is crucial to consult with a healthcare professional for a proper diagnosis and to differentiate pseudodementia from other cognitive disorders. It is not the intention of this paper to delve into this area but instead it is to raise self-awareness and that emphasize on the importance of proper assessment and diagnosis.

3. IDENTIFICATION OF EARLY SIGNS OF DEMENTIA

Early Intervention services are always important so as to better meet children's needs from an early age and throughout their lives. Likewise, in the case of dementia, early diagnosis allows individual family members to be able to take a proactive role in both decision making and planning for interaction with people with dementia. Any changes in memory and thinking abilities can be very worrying since in some cases, it can expediate at a very fast rate without warning (Alzheimer's Association, 2012). However, recognizing the early signs of dementia can be challenging, as symptoms often overlap with normal aging or other medical conditions. Certain cognitive, behavioral, and functional changes may serve as red flags for the need for further assessment and evaluation that covers namely memory loss, challenges in planning and problem-solving, difficulty completing familiar tasks, confusion with time or place, and changes in mood and personality, highlighting their significance in the diagnostic process serve as very useful information in order to detect early signs of dementia.

3.1 Memory Loss that Disrupts of Daily Life

Memory loss is often associated with dementia, especially so in the early stages of Alzheimer's disease. Memory loss in dementia refers to the persistent memory problems that disrupt daily activities may indicate underlying cognitive impairment (Alzheimer's Association, 2021). Examples of such cognitive impairments include the inability to recall recent events, appointments, or conversations, relying on notes or reminders to compensate for memory deficits. In addition, people with dementia may repeatedly ask the same questions or rely on others to provide information they previously knew, leading to frustration and embarrassment (Alzheimer's Association, 2021). Caregivers and family members may notice subtle changes in memory function, such as misplacing items, forgetting names of familiar individuals, or getting lost in familiar surroundings (Mace & Rabins, 2021).

3.2 Challenges with Executive Functioning

Executive Functioning refers to the capacity to plan ahead and meet goals, regulate self-control, follow multiple-step directions even when interrupted and ability to stay focused despite distractions (Barnes, 2021). Dementia can impair executive function, affecting an individual's ability to plan, organize, and execute tasks effectively. Early-stage dementia may manifest as difficulties in planning daily activities, managing finances, or following instructions (Smith & D'Amico, 2020; Yang et al., 2021). Complex problem-solving abilities, such as navigating unfamiliar routes or troubleshooting technological devices, may also decline, leading to increased reliance on external assistance (Smith & D'Amico, 2020; Yang et al., 2021). Changes in executive function can impact occupational performance, social interactions,

and independent living skills, prompting concerns from family members and caregivers (Smith & D'Amico, 2020; Yang et al., 2021). The inability to have strong executive functioning skills may impact an individual's functional independence.

3.3 Difficulty Doing Familiar Tasks

Individuals may struggle to perform familiar activities of daily living, such as cooking, driving, or managing household chores (Ceci & Purkis, 2021). Simple tasks, such as following recipes or operating household appliances, may become increasingly challenging, resulting in errors or accidents. Additionally, individuals may exhibit slowed processing speed and decreased efficiency in task completion, leading to frustration and loss of confidence (Agrawal et al., 2021). In addition, changes in the individual's ability to maintain personal hygiene can also pose a challenge. Monitoring functional decline and identifying deviations from baseline performance can be a good start in early detection and start appropriate intervention strategies.

3.4 Confusion with Time or Place

Early symptoms of dementia often show signs of disorientation and confusion with regard to time or place, particularly in vascular dementia and Lewy body dementia. For example, losing track of dates, seasons, or the passage of time, leading to missed appointments or scheduling errors. They may struggle to follow sequential events or maintain a coherent daily routine, experiencing increased anxiety and disorientation (Zimmermann, 2020). Apart from the above, individuals may become lost in familiar environments or facing challenges in navigating spatial relationships, increasing the risk of wandering and safety concerns (Zimmermann, 2020). Some coping mechanisms to overcome this challenge is increased reliance on external cues, such as calendars, clocks, or GPS devices, in order to compensate for temporal and spatial disorientation.

3.5 Changes in Mood and Personality

Dementia can significantly impact an individual's mood, behavior, and personality, often preceding cognitive decline and functional impairment. Early-stage dementia may present with subtle changes in mood, such as increased irritability, apathy, or agitation (Davis & Price, 2024). With this changes in moods, people with dementia may withdraw from social activities, hobbies, or previously enjoyed interests, exhibiting decreased initiative and motivation (Davis & Price, 2024). Moreover, personality changes, such as disinhibition, impulsivity, or emotional lability, may emerge, disrupting interpersonal relationships and social interactions (Davis & Price, 2024). Monitoring mood fluctuations and assessing changes in personality traits can provide valuable insights into the early stages of dementia and inform appropriate psychosocial interventions and support services.

4. ASSESSMENT INSTRUMENTS FOR DEMENTIA

Dementia as a progressive neurological disorder is an indication of cognitive decline, functional impairment and behavioral changes (Hermann & Zerr, 2022). Early detection and accurate diagnosis are always vital for timely interventions, treatment planning as well as the provision of support. There are many instruments and assessment tools ranging from screening measures for early detection to comprehensive assessments for assessing cognitive function, functional abilities and behavioral symptoms in later stages of the disease. The following are some of the instruments for consideration:

4.1 Screening Instruments for Early Detection

Screening instruments are brief, easy-to-administer tools that are often used to assess people who are at risk for dementia. The following instruments are commonly used in primary care settings or community settings in order to assess cognitive functions and find out potential cognitive impairment.

- A) Clock Drawing Test (CDT): The CDT is a simple and quick screening tool that assesses cognitive impairment.
- B) Mini-Mental State Examination (MMSE): The MMSE is used to assess global cognitive function which includes assessing cognitive domains like orientation, memory, attention, language and visuospatial skills.
- C) Montreal Cognitive Assessment (MoCA): The MoCA is used to evaluate memory, attention, executive functions, language, visuospatial skills and orientation.

4.2 Comprehensive Assessment Instruments

Comprehensive testing instruments are the more extensive evaluation tools that cover broader aspects to give information on cognitive function as well as behavioral symptoms that help to confirm the presence of dementia. These tests give detailed coverage on an individual's cognitive profile, differential diagnosis, treatment planning and also monitor the disease progression. The following instruments are the commonly used instruments for dementia assessment.

- A) Alzheimer's Disease Assessment Scale - Cognitive Subscale (ADAS-Cog): This test assesses on memory, language, praxis, attention, and other cognitive domains.
- B) Clinical Dementia Rating (CDR): This test assesses the level of severity of dementia and its impact on adaptive daily functioning. It evaluates cognitive performance, functional abilities, and behavioral symptoms across many domains like memory, orientation, judgement, and community matters.
- C) Neuropsychological Test Battery: This test consists of a set of standardized components which include cognitive domains like memory, attention, language, executive function, and visuospatial skills.

4.3 Behavioral and Functional Assessment Instruments

Behavioral and Functional Assessment Instruments are often used to assess the behavioral symptoms and the functional abilities of those individuals with dementia. These instruments cover mainly on areas like daily adaptive activities which serve as critical information for treatment planning and caregiving support. The instruments are listed as follow.

- A) Neuropsychiatric Inventory (NPI): A care-giver based assessment tool that is used to evaluate those neuropsychiatric symptoms in individuals with dementia. It covers in areas like agitation, depression, anxiety, hallucinations and delusions.
- B) Activities of Daily Living Scale (ADL): This instrument covers an individual's ability to do basic activities of daily living e.g. bathing, dressing, grooming, toileting, meal preparation, medication and money management skills. The scales provide useful information about the level of impairment and level of assistance required for daily activities.

5. ACTIVITIES TO HELP SLOW DOWN COGNITIVE DECLINE

Cognitive decline is a multifaceted process influenced by various factors, including age, genetics, lifestyle, and underlying health conditions (Randväli & Šteinmiller, 2024). While cognitive decline is a natural part of aging, certain strategies and interventions have been proposed to mitigate its progression and preserve cognitive function.

Educational Therapy can play an important and useful role in dementia care. Specifically, the Educational Therapist can implement tailored interventions that help to address cognitive, emotional as well as behavioral challenges. By creating sensory-stimulating learning opportunities to engage individuals with dementia in meaningful tasks, educational therapists help to facilitate cognitive stimulation and emotional regulation, bringing a sense of calm and contentment. The following are activities that an Educational Therapist can use to help remediate cognitive decline.

A) Sensory Learning Experiences

Sensory stimulation activities involve the deliberate engagement of sensory modalities, such as sight, hearing, touch, taste, and smell, to provide meaningful and therapeutic experiences for individuals with cognitive impairments (Smith & D'Amico, 2020; Yang et al., 2021). The following are examples of sensory-rich experiences and multisensory activities that offer opportunities for sensory exploration, arousal regulation, and emotional expression, promoting cognitive engagement and sensory integration in individuals with dementia:

1. **Tactile Stimulation:** Provide textual materials for learning experiences so that the individuals with dementia can experience the sense of touch. Materials like textured fabrics, sensory balls and bins filled with rice or dried beans, textured puzzle pieces provide sensory engagement.
2. **Multisensory Learning Opportunities:** The use of soft lighting, soothing music, visually stimulating colorful artwork and images do help to reinforce individuals with dementia learning process. Multisensory activities also may include painting or collage-making and exploring emotions for each individual with dementia can take place simultaneously.
3. **Playing music that triggers nostalgia:** Singing to old tunes, playing musical instruments help to provide that auditory exposure that can trigger memories and emotions that are often associated with past events or specific experiences.
4. **Reminiscence Therapy:** Photographs, objects, recorded messages, familiar stories, help to evoke memories for the individuals with dementia. Such therapy promotes cognitive stimulation and emotional well-being.

B) Adaptive Behavior Training

Educational Therapy play an important role in helping individuals with dementia in developing adaptive behaviors and strategies so as to manage daily tasks and challenges. By emphasizing on functioning skills training and structuring environmental modifications, Educational Therapists can empower individual with dementia to maintain independence and autonomy. Educational Therapist can assist individuals with dementia in developing adaptive behaviors in the following ways:

1. **Task Sequencing:** In order to achieve better chances of success in doing any task, an Educational Therapist can help by breaking down complex tasks into smaller, manageable steps. Using a step-by-step approach to prepare a packing up activity or completing a simple meal, it can help the individuals with dementia to understand, manage and doing the task independently in daily living activities.
2. **Coping Strategies for Stress Management:** Although such skills are easy to follow and do, individuals with dementia need to be taught explicitly on relaxation techniques, deep breathing exercises, progressive muscle relaxation or mindfulness meditation. These techniques help to better manage stress with anxiety. Guiding individuals with dementia with outdoor activities, organizing yoga or tai chi classes can help promote relaxation and well-being.

3. Behavior Management Techniques: Individuals with dementia can be challenging to deal with their changing behaviors at times (Yates, 2021). An Educational Therapist can help to manage such behaviors by using the distraction methods (so as to distract attention on a particular task), redirection (so as to get focus on another issue to talk about), reinforcement on positive behaviors. All these are done with the aim of promoting a calm and easier to manage behavior.

C) Social and Emotional Learning

Educational Therapy helps to enhance social and emotional needs skills by creating platforms so as to create social engagement, fostering meaningful connections, promote emotional well-being. There are many activities that an Educational Therapist can do in this area.

1. Formation of Peer Support Networks: Setting up either buddy systems or peer support groups to provide opportunities for social interaction and companionship help to foster meaningful connections and promote emotional well-being. In addition, through such social interaction, individuals with dementia find a sense of belonging, interconnectedness, ways to manage loneliness, anxiety and depression. Hence, it helps to enhance overall quality of life.
2. Formation of Social Clubs and Interest Groups: Such a group gets people of the same interest based on common hobbies, interests, activities another avenue for individuals with dementia to engage in meaningful social interactions and pursue shared interests. Such a group can bring benefits like a greater sense of community, purpose and enjoyment.

D) Executive Functioning

Feuerstein et al., (2010) emphasized on the principles of structured interactions, scaffolding, and feedback in order to promote cognitive growth and adaptation. Following along those mentioned principles, an Educational Therapist can design activities to stimulate various cognitive functions like attention, memory as well as problem solving. Activities include puzzles, matching games, categorization tasks, and sequential ordering exercises that are meant to stimulate the individual's cognitive abilities. Further to that, other activities like switching between different tasks, solving problems with multiple solutions, and generate alternative strategies are ideas to develop cognitive flexibility (Feuerstein et al., 2010). Memory training activities that focus on improving encoding, storage, and retrieval processes through repetition, association, visualization, and mnemonic strategies (Bahar-Fuchs et al., 2019) can also be useful. Attention training exercises aim to enhance sustained, selective, and divided attention through attentional control exercises, focused attention tasks, and mindfulness-based interventions are recommended as well (Olazaran et al., 2021). Interactive board games where active participation involves strategic thinking, crossword puzzles and memory games are alternative approaches to provide very targeted remediation strategies to improve reasoning, memory planning, visual-motor skills and attention. Thus, enhancing cognitive engagement, functional independence and improving better quality of life.

An Educational Therapist has the expertise to help remediate for individuals with dementia addressing the sensory, adaptive, cognitive, emotional and social needs; thereby aligning itself very well to the practices of gerontology. In the realm of aging, lifespan development and age-related challenges, Educational Therapy can help to remediate and transit seamlessly for himself or the professionals within the field of gerontology. Thus, widening the potential for educational therapists to contribute far and wide to successful aging, dementia care and enhancing the quality of life in older adults.

6. CONCLUSION

Dementia is a complex condition where it impacts on cognitive function, memory, language, emotions as well as the adaptive ability of the individual. Often, the professionals involve in helping the individuals

with dementia include doctors, nurses, occupational therapists and speech therapists. However, this paper has brought the educational therapists into the profession in order to play a valuable role in supporting the individuals with dementia. The Educational Therapist specializes in addressing learning difficulties, cognitive challenges and behavioral issues through the many interventions and strategies. This complements the efforts of the other healthcare providers. From the theoretical perspective, an Educational Therapist brings expertise in understanding the learning process, cognitive developments, behavior modifications. By designing personalized intervention plans, they help to optimize learning outcomes for the individuals with dementia. From the practical perspective, an Educational Therapist's contribution to dementia intervention include cognitive stimulation activities, functional skills training, communication enhancement, caregiver education and support as well as liaison with other healthcare professionals. In linking the role of an Educational Therapist to dementia care, there is a great scope for the Educational Therapist to collaborate and work in a interdisciplinary team so as to provide comprehensive and holistic support for the individuals with dementia. Through this collaboration and great desire to help, Educational Therapist is capable to play an important role to the advancement of dementia care and promoting dignity and well-being for all those affected dementia.

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8. COMPETING INTERESTS

The author has declared that no competing interests exist.

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