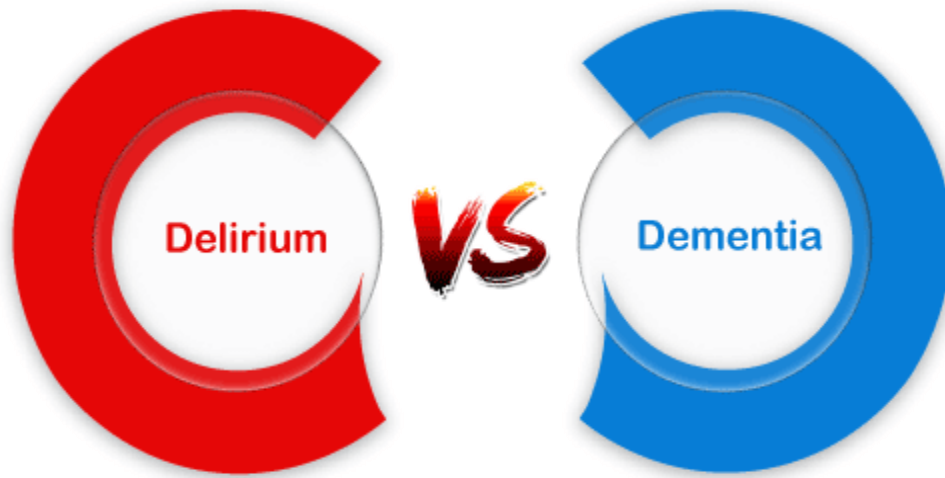


Summer Course



NUR: 220 psychology

Title: Dementia and Delirium

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Introduction

Dementia and delirium are two prevalent yet distinct neurocognitive disorders that significantly impact the elderly population. Although they share some overlapping features, particularly in their effects on cognitive functions, they differ markedly in their onset, course, and underlying causes.

Dementia is a chronic and progressive condition that results in the gradual deterioration of cognitive abilities, memory, and functioning. It encompasses various types, with Alzheimer's disease being the most common, followed by vascular dementia, Lewy body dementia, and frontotemporal dementia. Dementia is primarily associated with age-related changes in the brain, although genetic, environmental, and lifestyle factors also play critical roles.

In contrast, delirium is an acute and often reversible condition characterized by a sudden onset of confusion, disturbances in attention, and fluctuations in consciousness. It is commonly triggered by acute medical illnesses, surgical procedures, medications, or substance withdrawal. Delirium can occur at any age but is particularly prevalent among hospitalized elderly patients.

Both conditions pose significant challenges in healthcare due to their complex presentations and the need for differentiated approaches to management and care. Understanding the distinctions and interconnections between dementia and delirium is crucial for effective diagnosis, treatment, and support, especially given the aging global population and the rising prevalence of these disorders. This overview delves into the scientific aspects, causes, symptoms, complications, management strategies, and the essential role of nurses in the care of individuals affected by dementia and delirium.

Details

Dementia

Types of Dementia

1. Alzheimer's Disease

- Characteristics: Progressive memory loss, confusion, difficulty with language, and changes in mood and behavior. Later stages involve severe cognitive and functional decline.
- Pathophysiology: The accumulation of beta-amyloid plaques outside neurons and tau protein tangles inside neurons disrupts synaptic communication, leading to neuronal death and brain atrophy, particularly in the hippocampus and cortex.

2. Vascular Dementia

- Characteristics: Symptoms can vary depending on the brain areas affected by reduced blood flow, including memory loss, confusion, difficulty with attention and concentration, and changes in motor skills.
- Pathophysiology: Reduced blood flow due to strokes, small vessel disease, or other vascular conditions leads to brain damage. This can result from large infarcts (strokes) or multiple smaller infarcts (lacunar infarcts) that accumulate over time.

3. Lewy Body Dementia

- Characteristics: Cognitive decline, visual hallucinations, Parkinsonism (motor symptoms like tremors and rigidity), and fluctuations in alertness and attention. Sensitivity to antipsychotic medications is common.
- Pathophysiology: The presence of Lewy bodies, abnormal clumps of alpha-synuclein protein, disrupts neuronal function. These deposits are found in the brain's cortex and substantia nigra.

4. Frontotemporal Dementia (FTD)

- Characteristics: Changes in personality and behavior (disinhibition, apathy, compulsive behaviors) or language difficulties (progressive aphasia). Memory is often relatively preserved in the early stages.

Pathophysiology:

Degeneration of neurons in the frontal and temporal lobes due to abnormal protein deposits, including tau and TDP-43, leads to the characteristic symptoms.

Diagnosis and Management

- **Diagnosis:** Comprehensive clinical evaluation, cognitive testing (e.g., Mini-Mental State Examination, Montreal Cognitive Assessment), brain imaging (MRI, CT), and sometimes cerebrospinal fluid analysis or PET scans for specific biomarkers.
- **Management:** Focuses on symptom management and supportive care. Pharmacological treatments (e.g., cholinesterase inhibitors, memantine) and non-pharmacological interventions (cognitive therapy, behavioral strategies) are used to improve quality of life.

Delirium

Types of Delirium

1. Hyperactive Delirium

- **Characteristics:** Restlessness, agitation, rapid mood changes, hallucinations, and delusions. Patients may become aggressive or uncooperative.

2. Hypoactive Delirium

- **Characteristics:** Drowsiness, lethargy, decreased motor activity, and reduced alertness. Often misdiagnosed as depression or fatigue.

3. Mixed Delirium

- **Characteristics:** Features of both hyperactive and hypoactive delirium, with symptoms that fluctuate over time.

Pathophysiology

- **Neurotransmitter Imbalances:** Disruption in the balance of neurotransmitters like acetylcholine, dopamine, and gamma-aminobutyric acid (GABA) plays a significant role. Increased dopamine and decreased acetylcholine are particularly implicated.
- **Neuroinflammation:** Systemic inflammation (due to infection, surgery, etc.) can lead to increased cytokine levels that affect brain function.
- **Acute Medical Conditions:** Conditions like infections, metabolic imbalances, or organ failure can trigger delirium by altering brain function.
- **Drug Effects and Withdrawal:** Medications (especially anticholinergics, benzodiazepines, and opioids) and withdrawal from alcohol or sedatives can precipitate delirium.

Diagnosis and Management

- **Diagnosis:** Clinical assessment using tools like the Confusion Assessment Method (CAM) or Delirium Rating Scale. Identifying the underlying cause is crucial.
- **Management:** Addressing the underlying cause (e.g., treating infections, adjusting medications), ensuring a supportive environment (adequate lighting, reducing noise), and managing symptoms (using antipsychotics cautiously for severe agitation).

Aspect	Dementia	Delirium
Onset	Gradual, over months to years	Sudden, over hours to days
Course	Chronic, progressive	Acute, often reversible
Attention	Generally preserved until late stages	Impaired
Awareness	Generally consistent	Fluctuating
Reversibility	Usually irreversible	Often reversible with treatment
Primary Management	Symptom management, supportive care	Treat underlying cause, supportive care

Scientific Information

Dementia:

- **Prevalence:** Approximately 50 million people worldwide have dementia, with Alzheimer's disease accounting for 60-70% of cases.
- **Diagnosis:** Clinical assessment, neuropsychological tests, imaging (MRI, CT scans), and biomarkers (CSF analysis, PET scans) are used for diagnosis.
- **Prognosis:** Dementia is progressive and currently incurable, with patients eventually requiring full-time care.

Delirium:

- **Prevalence:** Affects 10-30% of hospitalized elderly patients, with higher rates in intensive care units and postoperative settings.
- **Diagnosis:** Clinical observation, confusion assessment method (CAM), and identifying underlying causes.
- **Prognosis:** Delirium can be reversible with timely treatment of underlying causes, but prolonged or untreated delirium may lead to long-term cognitive decline.

Causes

Dementia:

1. **Genetics:** Family history, specific genetic mutations (e.g., APOE ϵ 4 allele for Alzheimer's).
2. **Age:** Increasing age is the most significant risk factor.
3. **Medical Conditions:** Cardiovascular disease, diabetes, and hypertension.
4. **Lifestyle Factors:** Smoking, alcohol use, poor diet, and lack of physical activity.

Delirium:

1. **Infections:** Urinary tract infections, pneumonia, sepsis.
 2. **Medications:** Anticholinergics, benzodiazepines, opioids.
 3. **Metabolic Imbalances:** Dehydration, electrolyte disturbances, renal failure.
 4. **Substance Withdrawal:** Alcohol, sedative-hypnotics.
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Signs and Symptoms

Dementia:

Early Stages:

- **Memory Loss:** Difficulty recalling recent events or information, repeatedly asking the same questions, forgetting appointments or conversations.
- **Language Problems:** Difficulty finding the right words, calling things by the wrong name, struggling with vocabulary.
- **Misplacing Items:** Placing items in unusual locations and being unable to retrace steps to find them.
- **Judgment and Decision-Making:** Poor judgment, difficulty with planning and organizing, making poor financial decisions.
- **Mood Changes:** Increased irritability, anxiety, depression, or apathy.
- **Orientation Issues:** Getting lost in familiar places, losing track of dates and time.

Moderate Stages:

- **Increased Confusion:** Greater difficulty with thinking and understanding, more frequent memory lapses.
- **Disorientation:** Confusion about time, place, and personal identity.
- **Difficulty with Daily Activities:** Trouble performing complex tasks (e.g., managing finances, cooking), needing help with dressing, bathing, and grooming.
- **Changes in Sleep Patterns:** Restlessness at night, increased daytime napping.
- **Behavioral Changes:** Agitation, aggression, wandering, sundowning (increased confusion and agitation in the late afternoon or evening).
- **Speech and Language Issues:** Difficulty following conversations, increased reliance on gestures.

Late Stages:

- **Severe Memory Loss:** Inability to recognize close family and friends, forgetting personal history.
- **Loss of Physical Abilities:** Difficulty walking, sitting, swallowing, incontinence.
- **Full-Time Care Needs:** Dependence on others for all daily activities, including eating, toileting, and hygiene.
- **Communication Difficulties:** Limited verbal communication, reliance on non-verbal cues, eventual loss of speech.
- **Personality and Behavior Changes:** Severe agitation, aggression, paranoia, hallucinations, delusions.

Delirium:

Attention Deficits:

- **Difficulty Focusing:** Trouble maintaining attention, being easily distracted.
- **Short Attention Span:** Inability to stay on task, quickly losing track of what is being said or done.
- **Reduced Awareness:** Lack of awareness of surroundings, inattentiveness to external stimuli.

Disorganized Thinking:

- **Incoherent Speech:** Rambling, disjointed, or nonsensical speech, switching from one topic to another without coherence.
- **Disorientation:** Difficulty understanding or processing information, inability to stay on topic.
- **Poor Memory:** Trouble recalling recent events, confusion about recent happenings.

Altered Consciousness:

- **Hyperalertness:** Increased sensitivity to the environment, restlessness, agitation, or aggressive behavior.
- **Hypoalertness:** Drowsiness, lethargy, appearing sluggish or slow to respond.
- **Fluctuating Levels:** Shifting between states of hyperalertness and hypoalertness, changes in consciousness throughout the day.

Perceptual Disturbances:

- **Hallucinations:** Seeing, hearing, or feeling things that are not present, often vivid and frightening.
- **Illusions:** Misinterpreting real objects as something else, such as seeing a coat on a chair and thinking it's a person.
- **Misinterpretations:** Incorrectly understanding sensory information, believing in the presence of threats or dangers that are not real.

Complications

Dementia:

Behavioral Changes:

- **Aggression and Agitation:** These can be responses to confusion, frustration, or environmental triggers. Behavioral changes can manifest as physical or verbal aggression, restlessness, and resistance to care.
- **Wandering:** Individuals may wander and get lost, which poses safety risks. This behavior often stems from confusion and a need for stimulation or a sense of purpose.
- **Sleep Disturbances:** Changes in sleep patterns, including insomnia and sleep-wake cycle reversal, can worsen cognitive symptoms and increase caregiver stress.

Psychiatric Symptoms:

- **Depression and Anxiety:** Mood disorders are common and can exacerbate cognitive decline. They may manifest as persistent sadness, loss of interest in activities, excessive worry, and agitation.

- **Hallucinations and Delusions:** False perceptions (hallucinations) and strongly held false beliefs (delusions) can occur, leading to further confusion and distress for the patient and their caregivers.

Physical Health Decline:

- **Malnutrition:** Difficulty eating due to forgetting to eat, losing interest in food, or physical difficulties (such as swallowing problems) can lead to weight loss and nutritional deficiencies.
- **Infections:** Increased risk of infections, particularly urinary tract infections and pneumonia, due to decreased mobility, incontinence, and compromised immune function.
- **Reduced Mobility:** Physical decline can lead to muscle weakness, joint problems, and increased risk of falls and fractures.

Caregiver Burden:

- **Emotional Stress:** Caregivers often experience significant emotional strain, leading to feelings of guilt, frustration, and burnout.
- **Physical Stress:** The physical demands of caregiving, including assisting with mobility and personal care, can lead to physical exhaustion and health problems for the caregiver.
- **Financial Stress:** The cost of care, including medical expenses, home modifications, and potential loss of income, can create significant financial burdens for families.

Delirium:

Prolonged Hospitalization:

- **Longer Stays:** Patients with delirium often require extended hospital stays due to the need for additional medical and supportive care, which increases healthcare costs.

- **Complicated Recovery:** Delirium can complicate the recovery process from surgery or acute illness, leading to slower overall recovery and increased risk of complications.

Functional Decline:

- **Loss of Independence:** Delirium can result in a decline in the ability to perform daily activities (ADLs), such as dressing, bathing, and eating, leading to increased dependence on caregivers or the need for long-term care facilities.
- **Deconditioning:** Prolonged periods of inactivity or bed rest during delirium can lead to muscle weakness and decreased physical function.

Increased Mortality:

- **Higher Risk of Death:** Delirium is associated with a higher mortality rate, particularly among critically ill or elderly patients. The risk persists even after the delirium has resolved.
- **Underlying Conditions:** The presence of delirium often indicates severe underlying medical conditions, contributing to the increased risk of death.

Long-term Cognitive Impairment:

- **Persistent Deficits:** Some patients may experience lasting cognitive impairments even after the resolution of delirium. This can affect memory, attention, and executive function.
 - **Increased Risk of Dementia:** Delirium can accelerate cognitive decline and increase the risk of developing dementia, particularly in older adults.
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Management

Dementia:

Medications

1. Cholinesterase Inhibitors:

- **Donepezil (Aricept):** Used for all stages of Alzheimer's disease. It helps increase the levels of acetylcholine in the brain, improving communication between nerve cells.
- **Rivastigmine (Exelon):** Available as a pill or a skin patch, used for mild to moderate Alzheimer's disease and Parkinson's disease dementia. It works by preventing the breakdown of acetylcholine.
- **Galantamine (Razadyne):** Used for mild to moderate Alzheimer's disease, it enhances the action of acetylcholine and may also have neuroprotective effects.

2. NMDA Receptor Antagonists:

- **Memantine (Namenda):** Used for moderate to severe Alzheimer's disease. It works by regulating the activity of glutamate, a neurotransmitter involved in learning and memory.

Non-Pharmacological Interventions

1. Cognitive Stimulation:

- **Activities:** Structured group activities that involve discussion, word games, puzzles, and reminiscence therapy to stimulate thinking skills.
- **Music and Art Therapy:** Engaging in music, art, and other creative activities can enhance mood and cognitive function.

2. Physical Exercise:

- **Regular Activity:** Walking, swimming, tai chi, or other exercises that improve cardiovascular health and overall physical fitness.
- **Strength and Balance Training:** Exercises to improve muscle strength and balance, reducing the risk of falls.

3. Social Engagement:

- **Social Activities:** Encouraging participation in social activities, such as group outings, community centers, and family gatherings.
- **Volunteering and Hobbies:** Engaging in meaningful activities and hobbies to maintain a sense of purpose and connection.

Supportive Care

1. Safety Modifications:

- **Home Environment:** Making the home safer by installing grab bars, reducing tripping hazards, and using locks or alarms on doors to prevent wandering.
- **Assistive Devices:** Using devices like GPS trackers, medical alert systems, and memory aids to enhance safety and independence.

2. Support Groups:

- **Caregiver Support Groups:** Providing a space for caregivers to share experiences, receive emotional support, and access resources.
- **Patient Support Groups:** Offering social interaction and mutual support for individuals with dementia.

3. Caregiver Education and Support:

- **Training:** Educating caregivers on effective communication strategies, behavior management, and daily care techniques.
- **Respite Care:** Providing temporary relief for caregivers through respite services, allowing them to take breaks and reduce burnout.

Delirium:

Identify and Treat Underlying Causes

1. **Infections:** Prompt treatment of urinary tract infections, pneumonia, and other infections with appropriate antibiotics.
2. **Dehydration:** Ensuring adequate fluid intake and monitoring for signs of dehydration, using intravenous fluids if necessary.
3. **Electrolyte Imbalances:** Correcting imbalances in electrolytes like sodium, potassium, and calcium through dietary adjustments or intravenous supplements.

4. **Medication Review:** Evaluating and adjusting medications that may contribute to delirium, including minimizing the use of sedatives and anticholinergic drugs.

Environmental Modifications

1. **Quiet, Well-Lit Rooms:** Reducing noise and providing adequate lighting to help patients remain oriented and calm.
2. **Clocks and Calendars:** Using large, easy-to-read clocks and calendars to help patients keep track of time and date.
3. **Familiar Objects:** Keeping familiar objects and photographs in the room to provide comfort and reassurance.

Medications

1. **Antipsychotics:**
 - **Haloperidol:** Used to manage severe agitation and psychotic symptoms, but with caution due to potential side effects like extrapyramidal symptoms and QT prolongation.
 - **Atypical Antipsychotics:** Medications like quetiapine or olanzapine may be used, although they also carry risks and should be used judiciously.
2. **Benzodiazepines:** Generally avoided due to the risk of worsening delirium, but may be used in cases of alcohol or benzodiazepine withdrawal delirium.

Supportive Care

1. **Adequate Hydration and Nutrition:**
 - **Fluid Intake:** Ensuring regular fluid intake, using oral hydration solutions or intravenous fluids if needed.
 - **Balanced Diet:** Providing a nutritious diet to support overall health and recovery.
2. **Promoting Regular Sleep Patterns:**
 - **Sleep Hygiene:** Creating a comfortable sleep environment, maintaining a regular sleep schedule, and minimizing disruptions at night.
 - **Non-Pharmacological Sleep Aids:** Using relaxation techniques, melatonin, or other non-drug methods to promote sleep.
3. **Mobility and Rehabilitation:**
 - **Physical Therapy:** Encouraging early mobilization and physical therapy to prevent deconditioning and improve physical function.

- **Occupational Therapy:** Supporting the patient in regaining daily living skills and promoting independence.
- 4. **Orientation and Cognitive Support:**
 - **Frequent Reorientation:** Regularly reorienting the patient to time, place, and person to reduce confusion.
 - **Cognitive Activities:** Engaging in simple cognitive activities, like puzzles or reading, to stimulate mental function.

Role of the Nurse

1. Assessment

Continuous Monitoring:

- **Cognitive Assessments:** Using tools like the Mini-Mental State Examination (MMSE) or the Montreal Cognitive Assessment (MoCA) to monitor cognitive function regularly.
- **Behavioral Observation:** Watching for changes in behavior, mood, and daily functioning that might indicate worsening of dementia or onset of delirium.
- **Physical Health Monitoring:** Keeping track of vital signs, nutritional status, hydration levels, and overall physical health to detect any changes that might contribute to cognitive decline.

Early Detection of Symptoms:

- **Identifying Delirium:** Using tools like the Confusion Assessment Method (CAM) to quickly identify signs of delirium and differentiate it from dementia.
- **Noting Subtle Changes:** Being vigilant for early signs of cognitive decline or delirium, such as increased confusion, disorientation, or sudden changes in behavior.

2. Education

Teaching Patients and Caregivers:

- **Disease Information:** Providing comprehensive information about the specific type of dementia or delirium, including symptoms, progression, and potential complications.

- **Management Strategies:** Educating on practical strategies to manage symptoms, such as creating a structured daily routine, using memory aids, and implementing safety measures.
- **Medication Education:** Explaining the purpose, dosage, and potential side effects of medications, ensuring understanding and adherence.

Disease Progression:

- **Stages of Dementia:** Educating caregivers about the different stages of dementia, what to expect, and how to prepare for future care needs.
- **Signs of Delirium:** Teaching caregivers how to recognize the signs of delirium and the importance of prompt medical attention.

3. Advocacy

Ensuring Appropriate Care:

- **Patient-Centered Care:** Advocating for individualized care plans that meet the unique needs of each patient.
- **Access to Resources:** Helping patients and families access resources, such as support groups, counseling services, and financial assistance programs.

Protecting Patient Rights:

- **Informed Consent:** Ensuring that patients and their families are fully informed and involved in decisions about their care.
- **Ethical Care:** Advocating for ethical treatment, including the right to dignity, respect, and autonomy.

4. Coordination of Care

Collaborating with Multidisciplinary Teams:

- **Interdisciplinary Meetings:** Participating in regular meetings with doctors, social workers, physical therapists, and other healthcare professionals to discuss patient care.
- **Care Planning:** Contributing to the development and implementation of comprehensive care plans that address medical, psychological, and social needs.

Managing Care Transitions:

- **Hospital to Home:** Coordinating the transition from hospital to home or other care settings, ensuring that patients have the necessary support and resources.
- **Continuity of Care:** Facilitating communication between different healthcare providers to maintain continuity of care and prevent gaps in treatment.

5. Symptom Management

Administering Medications:

- **Medication Administration:** Ensuring timely and accurate administration of prescribed medications, monitoring for therapeutic effects and side effects.
- **Pain Management:** Managing pain effectively, using both pharmacological and non-pharmacological methods.

Non-Pharmacological Interventions:

- **Behavioral Strategies:** Implementing strategies to manage behavioral symptoms, such as redirection, environmental modifications, and structured activities.
- **Comfort Measures:** Providing comfort measures, such as maintaining a calm environment, using therapeutic touch, and ensuring basic needs are met.

6. Support

Emotional and Psychological Support:

- **Listening and Counseling:** Offering a listening ear, providing empathy and understanding, and counseling patients and families through difficult times.
- **Stress Reduction:** Helping patients and caregivers manage stress through relaxation techniques, mindfulness, and other coping strategies.

Addressing Concerns and Needs:

- **Individualized Support:** Tailoring support to meet the specific needs and preferences of patients and families.

- **Crisis Intervention:** Providing immediate support and intervention during crises, such as severe agitation or a sudden health decline.

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