Cognitive disorder

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Cognitive

Cognition is the brain's ability to process retain and use information. cognitive abilities include reasoning, judgment, perception, attention, comprehension, and memory. these cognitive abilities are essential for many important tasks, including making decisions, solving problems, interpreting the environment, and learning new information.

A cognitive disorder

A cognitive disorder is a disruption or impairment in these higher level functions of the brain. Cognitive disorders can have devastating effects on the ability to function in daily life. They can cause people to forget the names of immediate family members, be unable to perform daily household tasks, and neglect personal hygiene.

DSM-IV previously categorized adult cognitive disorders as dementia, delirium, and amnestic disorders.

Delirium

- **Delirium** is a syndrome that involves a disturbance of consciousness accompanied by a change in cognition. Delirium usually develops over a short period, sometimes a matter of hours, and fluctuates, or changes, throughout the course of the day.

- **Clients with delirium** have difficulty **paying attention**, are e**asily distracted** and **disoriented,** and may have **sensory disturbances** such as illusions, misinterpretations, or hallucinations.

Prevalence

- Elderly patients are the group most frequently diagnosed with delirium.
- An estimated **15% to 20%** of people admitted to the hospital for general medical conditions are delirious.
- Delirium is reported in **10% to15%** of general surgical patients, **30%** of open heart surgery patients, and more than **50%** of patients treated for fractured hips.
- Delirium develops **in 80%** of terminally ill patients.

Risk factor

- delirium include increased severity of physical illness, older age, hearing impairment, decreased food and fluid
- intake, medications, and baseline cognitive impairment such as that seen in dementia.
- Children may be more susceptible to delirium, especially that related to a febrile illness or certain medications such as anticholinergics

Cause

Delirium almost always results from an identifiable physiologic, metabolic, or cerebral disturbance or disease or from drug intoxication or withdrawal. The most common causes are listed in Box 24.1. Often, delirium results from multiple causes, and requires a careful and thorough physical examination and laboratory tests for identification.

- **Surgery or anesthesia :** postoperative delirium is common in older adults.
- Head injuries or stroke.
- Severe pain or emotional distress.
- Sleep deprivation.
- **Organ failure**: like liver or kidney failure.
- **Toxins:** carbon monoxide poisoning or heavy metal exposure.

- **Infections:** like urinary tract infections (UTIs), pneumonia, or sepsis.
- **Medications:** especially sedatives, opioids, anticholinergics, or drug interactions/withdrawals (like from alcohol or benzodiazepines).
- **Metabolic imbalances:** such as low sodium (hyponatremia), high calcium (hypercalcemia), or blood sugar fluctuations.
- Dehydration or malnutrition.

Psychopharmacology

- Clients with quiet, hypoactive delirium need no specific pharmacologic treatment aside from that indicated for the causative condition. Many clients with delirium, however, show persistent or intermittent psychomotor agitation, psychosis, and/or insomnia that can interfere with effective treatment or pose a risk to safety.

- **Sedation** to prevent inadvertent self-injury may be indicated.

- **An antipsychotic medication**, such as haloperidol (Haldol), may be used in doses of 0.5 to 1 mg to decrease agitation and psychotic symptoms, as well as to facilitate sleep.

- **Short- or intermediate-acting** benzodiazepines, such as lorazepam (Ativan), may be helpful for sleep, but sedatives and **long-acting** benzodiazepines are avoided because they may worsen delirium (Sadock etal., 2015).

- Clients with **impaired** liver or kidney function could have difficulty metabolizing or excreting **sedatives.**

- The exception is delirium induced by alcohol withdrawal, which usually is treated with benzodiazepines

Other Medical Treatment

While the underlying causes of delirium are being treated, clients also may need other supportive physical measures. Adequate nutritious food and fluid intake speed recovery. Intravenous fluids or even total parenteral nutrition may be necessary if a client's physical condition has deteriorated and he or she cannot eat and drink.

Nursing intervention

- **Promoting client's safety**

- Teach the client to request assistance for activities (getting out of bed, going to bathroom).

- Provide close supervision to ensure safety during these activities.

- Promptly respond to the client's call for assistance

➢ Managing client's confusion

- Speak to the client in a calm manner in a clear low voice; use simple sentences.
- Allow adequate time for the client to comprehend and respond.
- Allow the client to make decisions as much as he/she is able to.
- Provide orienting verbal cues when talking with the client. Use supportive touch if appropriate.

- **Controlling environment to reduce sensory overload**

- Keep environmental noise to minimum (television, radio).
- Monitor the client's response to visitors; explain to family and friends that the client may need to visit quietly one on one.
- Validate the client's anxiety and fears, but do not reinforce misperceptions.

➢ **Promoting sleep and proper nutrition**

- Monitor sleep and elimination patterns.
- Monitor food and fluid intake; provide prompts or assistance to eat and drink adequate amounts of food and fluids.
- Provide periodic assistance to bathroom if the client does not make requests.
- Discourage daytime napping to help sleep at night.
- Encourage some exercise during day like sitting in a chair, walking in hall, or other activities the client can manage.

Dementia

Dementia refers to a disease process marked by progressive cognitive impairment with no change in the level of consciousness. It involves multiple cognitive deficits, initially, memory impairment, and later, the following cognitive disturbances may be seen

- **Aphasia** which is deterioration of language function
- **Apraxia** which is impaired ability to execute motor functions despite intact motor abilities
- **Agnosia** which is inability to recognize or name objects despite intact sensory abilities
- **Disturbance in executive functioning** which is the ability to think abstractly and to plan, initiate, sequence, monitor, and stop complex behavior

Dementia must be **distinguished** from delirium; if the two diagnoses coexist, the symptoms of dementia remain even when the delirium has cleared. **Table 24.1** compares delirium and dementia. Memory impairment is the prominent early sign of dementia. Clients have difficulty learning new material and forget previously learned material. Initially, recent memory is impaired—for example, forgetting where certain objects were placed or that food is cooking on the stove. In later stages, dementia affects remote memory; clients forget the names of adult children, their lifelong occupations, and even their names.

Mild: Forgetfulness is the hallmark of beginning, mild dementia. It exceeds the normal, occasional forgetfulness experienced as part of the aging process. The person has difficulty finding words, frequently loses objects, and begins to experience anxiety about these losses. Occupational and social settings are less enjoyable, and the person may avoid them. Most people remain in the community during this stage

Moderate: Confusion is apparent, along with progressive memory loss. The person no longer can perform complex tasks but remains oriented to person and place. He or she still recognizes familiar people. Toward the end of this stage, the person loses the ability to live independently and requires assistance because of disorientation to time and loss of information, such as **address and telephone** number. The person may **remain in the community** if adequate caregiver support is available, but some people move to supervised living situations

Severe: Personality and emotional changes occur. The person may be delusional, wander at night, forget the names of his or her spouse and children, and require assistance with ADLs. Most people live in nursing facilities when they reach this stage, unless extraordinary community support is available

Cause of dementia

Alzheimer's disease is a progressive brain disorder that has a gradual onset but causes an increasing decline in functioning, including loss of speech, loss of motor function, and profound personality and behavioral changes such as paranoia, delusions, hallucinations, inattention to hygiene, and belligerence. It is evidenced by atrophy of cerebral neurons, senile plaque deposits, and enlargement of the third and fourth ventricles of the brain. **Risk for Alzheimer's disease** increases with age, and average duration from onset of symptoms to death is 8 to 10 years. Dementia of the Alzheimer's type, especially with late onset (after 65 years of age), may have a genetic component. Research has shown linkages to chromosomes 21, 14, and 19.

Lewy body dementia, is a disorder that involves progressive cognitive impairment and extensive neuropsychiatric symptoms as well as motor symptoms. Delusions and visual hallucinations are common. Functional impairments may initially be more pronounced than cognitive deficits. Several risk genes have been identified, and it can occur in families, though that is less common than no family history

Vascular dementia

- Caused by **reduced blood flow to the brain** — often from strokes, small vessel disease, or other cardiovascular issues.
- Symptoms depend on the areas of the brain affected but may include problem-solving difficulties and slowed thinking.

Frontotemporal lobar degeneration (originally called **Pick's disease**) is a degenerative brain disease that particularly affects the **frontal and temporal lobes** and results in a clinical picture similar to that **of Alzheimer's disease**. Early signs include **personality changes**, **loss of social skills and inhibitions, emotional blunting, and language abnormalities**. **Onset** is most commonly 50 to 60 years of age; **death** occurs in 2 to 5 years. There is a strong genetic component and it tends to run in families

Prion diseases — also known as **transmissible spongiform encephalopathies (TSEs)** — are a rare group of **progressive, fatal neurodegenerative disorders** caused by **abnormal prion proteins**. These prions misfold and trigger a chain reaction, causing normal proteins in the brain to also misfold, leading to **brain damage** and a characteristic **spongy appearance** on histology.

🧠Types of prion diseases:

1.Creutzfeldt-Jakob disease (CJD)

1. The most common human prion disease.
2. Symptoms: **Rapidly progressing dementia**, **myoclonus (muscle jerks)**, **ataxia (loss of coordination)**, and **visual disturbances**.

Parkinson's disease is a slowly progressive neurologic condition characterized by tremor, rigidity, bradykinesia, and postural instability. It results from loss of neurons of the basal ganglia. Dementia has been reported in approximately 25% (mild NCD) to as many as 75% (major NCD) of people with Parkinson's disease, and is characterized by cognitive and motor slowing, impaired memory, and impaired executive functioning.

Huntington's disease is an inherited, dominant gene disease that primarily involves cerebral atrophy, demyelination, and enlargement of the brain ventricles. Initially, there are choreiform movements that are continuous during waking hours and involve facial contortions, twisting, turning, and tongue movements. Personality changes are the initial psychosocial manifestations, followed by memory loss, decreased intellectual functioning, and other signs of dementia. The disease begins in the late 30s or early 40s and may last 10 to 20 years or more before death

Related disorder

Substance- or medication-induced mild or major NCD is characterized by neurocognitive impairment that persists beyond intoxication or withdrawal. Long-term use of alcohol that results in dementia is called Korsakoff's syndrome or dementia. It was previously known as an amnestic disorder since amnesia and confabulation are common.

Mild or major NCD due to another medical condition are caused by diseases such as brain tumor, brain metastasis, subdural hematoma, arteritis, renal or hepatic failure, seizures, or multiple sclerosis.

Unspecified neurocognitive disorder is characterized by neurocognitive symptoms that cause the person distress or impairment, but do not meet the criteria for any other NCD.

Prevalence

Prevalence rises with age estimated. prevalence of moderate-to-severe dementia in people older than 65 years is about 5% and 20% to 40% of the general population older than 85 years have dementia.

Dementia of the Alzheimer's type is the most common type in North America (60% of all dementias), Scandinavia, and Europe;

vascular dementia is more prevalent in Russia and Japan.

Dementia of the Alzheimer's type is more common in women; vascular dementia is more common in men

Treatment

Name	Dosage Range and Route	Nursing Considerations
Donepezil (Aricept)	5–10 mg orally per day	Monitor for nausea, diarrhea, and insomnia. Test stools periodically for gastrointestinal bleeding.
Rivastigmine (Exelon)	3–12 mg orally per day divided into two doses	Monitor for nausea, vomiting, abdominal pain, and loss of appetite.
Galantamine (Reminyl, Razadyne, Nivalin)	16–32 mg orally per day divided into two doses	Monitor for nausea, vomiting, loss of appetite, dizziness, and syncope.
Memantine (Namenda)	10–20 mg/day divided into two doses	Monitor for hypertension, pain, headache, vomiting, constipation, and fatigue.

Nursing intervention

Promoting client's safety and protecting from injury

Offer unobtrusive assistance with or supervision of cooking, bathing, or self-care activities.

Identify environmental triggers to help the client avoid them.

Promoting adequate sleep, proper nutrition and hygiene, and activity

- Prepare desirable foods and foods the client can self-feed; sit with the client while eating. Monitor bowel elimination patterns; intervene with fluids and fiber or prompts.
- Remind the client to urinate; provide pads or diapers as needed, checking and changing them frequently to avoid infection, skin irritation, and unpleasant odors.
- Encourage mild physical activity such as walking.

Structuring environment and routine

- Encourage the client to follow regular routine and habits of bathing and dressing rather than imposing new ones.
- Monitor amount of environmental stimulation, and adjust when needed.

Providing emotional support

- Be kind, respectful, calm, and reassuring; pay attention to the client.
- Use supportive touch when appropriate.

Promoting interaction and involvement

- Plan activities geared to the client's interests and abilities.
- Reminisce with the client about the past.
- If the client is nonverbal, remain alert to nonverbal behavior.
- Employ techniques of distraction, time away, going along, or reframing to calm clients who are agitated, suspicious, or confused.


Thank You