Advancing practice in the care of people with dementia

3rd Edition

Module 1:

Overview of dementia

Dementia Training Australia

Contents

Module 1: Overview of dementia

Introduction

This module presents an overview of dementia and will assist you to understand dementia within the context of what is known of population statistics, normal ageing, and illness. It aims to engage you in considering the scope and challenge of this condition through an exploration of dementia from the perspectives of normal age-related brain changes, definition, dementia type, accurate diagnosis and a discussion about how dementia is identified and diagnosed. The module also provides some insight into the impact of dementia on the individual with dementia, their family and carers, and the community as a whole.

Objectives

On successful completion of this module you will be able to:

- Differentiate between the effects of normal and pathological ageing on the brain
- Categorise dementia type based on aetiology
- Debate key issues related to diagnosis
- Highlight current controversies and issues relating to dementia

Module topics

Dementia in Australia

The brain cognition and normal age-related change

Defining dementia

Types of dementia

Impact of dementia

Current controversies and issues

Summary

References and resources

Suggested reading for this module

Burns, A., O'Brien, J., & Ames, D. (2005). *Dementia*. (3rd ed.). London: Hodder Arnold.

NATSEM, University of Canberra was commissioned by Alzheimer's Australia to provide up-to-date estimates and projections of prevalence and incidence for people with dementia in Australia:

Alzheimer's Australia. (February 2017). *Economic Cost of Dementia in Australia 2016-2056.* Canberra: NATSEM for the Institute for Governance and Policy Analysis, University of Canberra, February 2017.
https://www.fightdementia.org.au/publications/reports
https://www.fightdementia.org.au/files/NATIONAL/documents/The-economic-cost-of-dementia-in-Australia-2016-to-2056.pdf

Alzheimer's Australia. (2014). *Dementia Care in the Acute Hospital Setting: Issues and Strategies Paper 40: A report for Alzheimer's Australia*. Retrieved 22 August 2014 from http://www.fightdementia.org.au/common/files/NAT/Alzheimers_Australia_Numbered_Publication_40.pdf

Australian Government Department of Health and Ageing. (2010). *Dementia resource guide.* http://www.health.gov.au/internet/publications/publishing.nsf/Content/ageing-dementia-resource-guide-2009-toc.htm

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Whalley, L. J. (2002). Brain ageing and dementia: what makes the difference? (Editorial). *The British Journal of Psychiatry, 181,* 369–371. http://bjp.rcpsych.org/cgi/content/full/181/5/369

Information relating to understanding dementia contained at the Alzheimer's Australia website:
http://www.fightdementia.org.au/understanding-dementia

Statistics on dementia can also be found on the Alzheimer's Australia website:
https://www.fightdementia.org.au/statistics

Dementia in Australia

An estimate of people with dementia in Australia in 2016 was 400,800 projected to increase to 760,700 people by 2036, and 1,100,890 people by 2056. (Alzheimer's Australia, 2017, p. 6)

Over the next 20 years the number of Australians with dementia will almost double to an estimated 760,700 individuals by 2036 (349,500 male and 411,200 females) and by 2056 the number of people with dementia will be more than 2.5 times higher estimated at 1,100, 890 (508,147 males and 592,743 females). Women will account for about 55% of all of those with dementia (Alzheimer's Australia, 2017, p. 6).

Although the number of people with younger onset dementia is increasing and will continue to increase over the next 40 years (approximately 30% by 2036 and 66% by 2056) it is the older age groups where the highest growth in people with dementia will occur (Alzheimer's Australia 2017, p. 6)

Awareness of the prevalence of dementia within the community will probably be coloured by a person's working environment and personal experience. For people working in an aged care institutional setting it may appear that everyone over the age of 75 years has dementia and may mask other causes of memory loss. Conversely, health care workers in the community may be less alert to behaviours that in fact do indicate the early stages of dementia.

The Australian Institute of Health and Welfare (AIHW, 2012) produced a document on the demographics of people with dementia in Australia. This document, listed as further reading for this module, has additional information on topics such as mortality due to dementia, the use of specialised mental health services, and hospitalisations for palliative care. Disability, rather than premature death, contributes most of the 'burden of disease' of dementia, indicating a need for planners to consider long-term care and support. Many people with mild dementia are well-supported in the community, so strategies that can be incorporated into care planning when ongoing care is being considered already exist (AIHW, 2012, p. 14).

However, a more recent document commissioned by Alzheimer's Australia and published in early 2017 by the National Centre for Social and Economic Modelling (NATSEM) at the Institute for Governance and Policy Analysis at the University of Canberra is referenced in this module to update the prevalence and incidence statistics on dementia in Australia.

Prevalence of dementia in Australia

Age is strongly related to dementia prevalence, with the greatest number of people with dementia in the 85+ years age bracket increasing from 138,834 in 2016 to 496,860 in 2056 (Alzheimer's Australia 2017, p. 7). It is projected that in 40 years time 45% of people living with dementia will be aged 85 years and older. This growth has major implications for health care costs and the carer burden of dementia in Australia (Alzheimer's Australia 2017, p. 6).

Table 1. Estimated number of Australians with dementia by age - 2016, 2017, 2036 and 2056

	2016	*2017*	*2036*	*2056*
30-64	25,400	25,938	32,450	42,252
65-69	44,536	44,552	59,893	80,152
70-74	47,085	50,614	75,324	100,902
75-79	69,643	72,514	136,024	165,934
80-84	75,334	77,632	160,778	214,790
85+	138,834	141,856	296,204	496,860
Total	400,833	413,106	760,672	1,100,890

NATSEM calculations using ABS populations projections (Alzheimer's Australia 2017, p. 7

In 2016 dementia was the second leading cause of burden of disease in men aged 85 and over and the leading cause of burden of disease in women aged 85 and over. The years of disability caused by dementia and the years of life lost contribute equally to the burden of disease from dementia (Alzheimer's Australia, 2017, p. ix).

These statistics highlight the significance of dementia as a major consideration in healthcare planning. The diagnosis of dementia is a life event which engenders fear and dread within communities that prize independent thought and action. However, by challenging this fear and understanding dementia as a process of slowly decreasing ability rather than absolute dependence, individuals, health professionals and family carers can be empowered to plan and contribute positively to health and emotional outcomes.

Table 2 shows dementia prevalence estimates from the Australian Bureau of Statistics nationally and by state and territory. The results are broadly representative of the population, with New South Wales projected to have the greatest number of people with dementia followed by Victoria and Queensland. However, the greatest percentage increase is expected to occur in the Northern Territory (Alzheimer's Australia 2017, p. 7 & p. 9).

Table 2: Estimated number of Australians with dementia by State and Territory, 2016, 2017, 2036 and 2056.

	2016	*2017*	*2036*	*2056*
NSW	135,093	138,721	240,171	326,108
Vic	101,682	104,622	190,632	280,241
Qld	74,871	77,633	154,339	233,298
WA	38,065	39,600	84,161	143,957
SA	34,105	34,916	58,559	74,091
Tas	10,279	10,582	18,232	21,220
ACT	5,162	5,369	10,849	16,313
NT	1,576	1,663	3,729	5,662
Australia	400,833	413,106	760,672	1,100,890

NATSEM calculations using ABS population projections (Alzheimer's Australia 2017, p. 9)

The statistics on prevalence of dementia amongst special needs groups is limited. However, there is an increasing awareness of the needs of different groups including their risk and understanding of dementia and related services (Alzheimer's Australia 2017, p. 8). Recent epidemiological studies on Aboriginal and Torres Strait Islanders suggest rates of dementia 3-5 times higher than in non-indigenous populations and that the onset occurs at younger ages (Alzheimer's Australia 2017, p. 11)

Incidence of dementia

The patterns of increase in the number of incident cases (new cases per year) follow those for prevalence. The number of males expected to develop dementia in 2017 rises to over 41,000 individuals and nearly 48,000 females. This represents 244 people developing dementia each day in Australia. In 40 years' time the incidence will be around 240,000 new cases per year which is equivalent to over 650 cases per day (Alzheimer's Australia 2017, p. 12).

The increasing incidence of dementia as a result of our ageing population indicates that gains made in relation to care and management of dementia will prove beneficial for many of us currently instrumental in healthcare decision-making.

In 2016, approximately 94,910 persons with dementia were living in aged care accommodation, 94% of whom were residents of residential aged care facilities (RACF). People with dementia represent just over half of all residents in RACF's and they tend to have much higher care needs than residents who do not have dementia (Alzheimer's Australia 2017, p. 15).

In 2017, an estimated 94,672 paid carers will be looking after people with dementia in the residential aged care setting and 196,491 carers in the community, the majority of whom are informal carers (Alzheimer's Australia 2017, p. 15).

The brain, cognition and normal age-related change

Despite the high rates of dementia in older people and the common myth that dementia is a normal part of growing old, dementia actually results from pathological changes in the brain and not normal age-related changes. As with all other organs, however, a number of age-related structural changes which do occur in the brain must be recognised in order to differentiate between 'normal' and pathological change, although Whalley (2002) suggests there are not clear boundaries between the normal ageing brain and that of dementia.

Activity

Consider what these normal age-related changes might be.

These normal age-related changes to the brain include:

- Reduced volume
- Some neuronal cell death
- Deterioration of myelin sheath
- Greater symmetrical activation of regional areas of the brain
- Dysregulation of neurotransmitter levels, hormones and other substances.

(Peters, 2006)

It must be noted that none of these changes impact significantly on cognitive ability. However, there are some normal age-related changes to cognition that can be distinguished from pathological ones.

Ageing and the brain, the article by Ruth Peters listed as suggested reading, provides a succinct overview of the effects of normal ageing on the brain and offers an overview of some of the limiting factors in current knowledge.

What is cognition?

Unsworth (1999) defined cognition as:

> *The abilities that enable us to think, which includes the ability to concentrate (pay attention), remember and learn*

and

> *includes executive functions such as the ability to plan, manipulate information, initiate and terminate activities and recognise errors.* (p.6)

Although there is no evidence to substantiate normal age-related deterioration in cognitive function, a general perception exists that declining cognition is inevitable as we age (Ebersole & Hess, 1998). Indeed, commonly used terminology refers to episodes of forgetfulness as 'senior moments'. Normal age-related changes to cognition do not significantly impact on social or occupational functioning.

Normal changes to cognition include:

- A generalised decline in speed of processing of information but accuracy of response is not affected
- Slower and more cue-dependent memory performance – a need to make lists
- A decrease in learning speed and recall, but if given extra time to complete the task, intellectual functioning is adequate.

However, there is no:

- Alteration to insight
- Change to language and praxis
- Impairment to learning capacity; contrary to popular belief you can teach an old dog new tricks.

Dementia explained

Defining Dementia

In 2013 the American Psychiatric Association (APA) released the fifth edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-5) in which the term "dementia" has been replaced with major neurocognitive disorder and minor neurocognitive disorder (DSM-5). It is said this is an attempt to reduce the stigma associated with the word "dementia", which has its roots in the Latin words for mad or insane. Despite this new terminology it is accepted that the word "dementia" will remain in common use except perhaps by specialist health professionals (APA, 2013).

Dementia is a clinical diagnosis of a syndrome that is based on a collection of symptoms affecting the brain. Dementia causes functional decline that interferes with daily activities and causes loss of intellectual abilities. See Module 3: *Diagnosing Dementia* for more information regarding diagnostic criteria.

Types of Dementia

Dementia is a term used to label cognitive impairment based on the above criteria. There are many sub-types of dementia, each with its own aetiology and risk factors. There are around 100 different conditions or diseases that cause dementia, of which Alzheimer's is just one.

The major sub-types of dementia include:

1. Alzheimer's Disease (AD), which accounts for 50–70% of all types of dementias. Approximately 50% of these are 'pure' Alzheimer's Disease.
2. Vascular Dementia (VaD), which accounts for 18% of all types of dementias, 20% of which are 'pure' vascular dementia.
3. Dementia with Lewy Bodies (DLB) accounts for 15% of all dementia cases.
4. Mixed Dementia – co-existence of AD and VaD (prevalence and incidence data unavailable).

Other sub-types of dementia that are likely to require specialist input include:

- Parkinson's-related dementia (accounting for 3–4% of all dementia cases)
- Fronto-temporal dementia (accounting for 5% of all dementia cases).

(Pridmore, 2009; DoHA,2007)

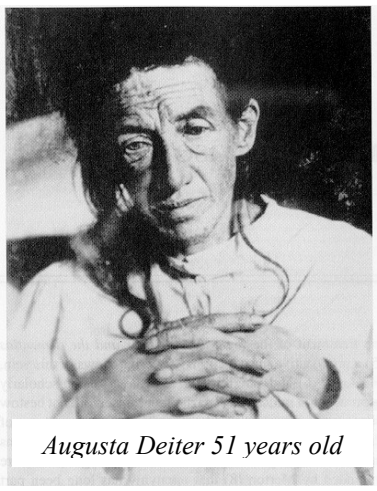
These sub-types make up a small but important proportion of dementia. It is essential that these specific diagnoses are made, as treatment options vary according to the type of dementia and because significant harm may occur if people with these sub-types are treated in the same way as those with Alzheimer's disease.

Differential diagnosis of the type of dementia is important so as to:

- Explain to the person with dementia and their family
- Understand the biological basis of the disease in relationship to behavioural change
- Appreciate the range of therapeutic interventions possible
- Formulate a differential diagnosis
- Understand settings where diagnosis can be made; that is, limitations of making diagnosis in general practice
- Contribute to demographic and research data.

Alzheimer's Disease

Alzheimer's disease was first described in 1907 by Dr Aloysius Alzheimer and is the most common form of dementia. The changes in the brain resulting from this disease were identified by post-mortem examination of 51-year-old Augusta Deiter.



Augusta Deiter 51 years old

Changes identified in Augusta's brain were:

- Thinning of the cerebral cortex (atrophy)
- A cellular protein (amyloid) in the brain is handled in an abnormal fashion leading to
  - Extracellular neuritic plaques
  - Intracellular neurofibrillary tangles
- Synaptic and neuronal loss, especially
  - cholinergic neurons
  - hippocampus and basal nuclei

Diagnostic features of probable Alzheimer's disease include:

- History
- Insidious onset with progressive memory decline, initially impaired new learning and short-term memory
- Gradual progression involving long-term memory and other functions, such as language, praxis, perception and executive function
- Cognitive loss documented by neuropsychological tests (rapid forgetting)
- No physical signs/laboratory evidence of other causes of dementia
- Reduced functioning on ADLs.

Alzheimer's Disease Pathology

Normal brain *Alzheimer's disease*

Alzheimer's disease is categorised into three relatively distinct stages, ranging from mild through to severe dementia.

Mild or early	Deficits are evident in a number of areas (such as memory and personal care) but the person can still function with minimal assistance. Symptoms include: moderate memory loss especially for recent events, some disorientation in time, moderate difficulties with problem solving, reduced interest in hobbies, and the need for prompting regarding personal care tasks.
Moderate or middle	Deficits become more obvious and severe, and increasing levels of assistance are required to help the person maintain their functioning in the home and community. Symptoms include: severe memory loss, considerable difficulty orienting to time and place, obvious difficulties in finding words, severe impairment of judgement and problem solving, need for assistance with personal care tasks, and emergence of behavioural difficulties (for example, wandering, aggression, sleep disturbance and disinhibited behaviour).
Severe or late	Characterised by almost total dependence on the care and supervision by others. Symptoms include: very severe memory loss, very limited language skills, unable to make judgements or solve problems, regularly not recognising familiar people, frequent incontinence, requires substantial assistance with personal care, and increased behavioural difficulties. By this stage the majority of people with dementia are in residential care.

AIHW. (2012), p. 3. Draper, B. (2011). Retrieved July 2014 from: http://www.agedcareguide.com.au/files/products-services/37293_Draper_sample.pdf

The information in the above table should be regarded as a general guide only as the course of the condition may vary in individual people. A three-stage model of Alzheimer's disease is often used because it is generally easier to understand. Even proponents of the seven-stage model refer to early, mid- and late stage Alzheimer's disease. http://www.alz.org/alzheimers_disease_stages_of_alzheimers.asp

Research knowledge is constantly evolving and aetiology is still being elucidated. Changes in understanding can be expected in the near future. See the Alzheimer's Association of Australia's Help Sheet on Alzheimer's disease, including progression of dementia at: http://www.fightdementia.org.au/understanding-dementia/section-1-about-dementia.aspx

Alzheimer's Disease general presentation

The presenting features of Alzheimer's disease are:

Memory

- Progressive decline
- Inability to recall recently presented material or events, appointments etc.
- Misplace objects, forget to do things
- Repetitious, need constant reminding
- Recent and remote memory loss becomes more pervasive as disease progresses

Language

- Word finding and naming difficulties initially
- Receptive problems may also occur, usually later
- Language disorders may dominate clinical picture

Spatial problems and dyspraxia

- Become lost in familiar surroundings, including own home
- Unable to carry out well-learned tasks initially complex (driving) then progressively more basic (dressing)
- Reduced ability to attend to aspects of self-care as the disease progresses
- Executive functioning is increasingly impaired and evidenced by deficits in:
    - Goal-directed, motivating behaviours
    - Difficulty planning and organising tasks
    - Altered judgement
    - Verbal reasoning affected by involvement of pre-frontal structures
    - Reduction in performance of tasks requiring higher cognitive abilities; for example, numeracy and literacy skills, managing finances or declining work performance in younger onset AD

Behavioural and psychological symptoms of dementia (BPSD)

- Lack of initiative or impulsivity (abulia) also common
- Behaviour may be worse in the evening, "sun downing" with disorientation and agitation
- May become resistive to care, aggressive, wandering – purposefully or aimlessly, become intrusive, or disinhibited
- Sleep–wake cycle disturbance (not easily treated)

Other behaviours

- Depression: up to 40% of people with Alzheimer's disease develop symptoms of depression that can be difficult to distinguish from frontal behaviours
- Psychotic features, delusions: belief that objects are stolen (up to 50%), hallucinations – usually visual (up to 25%)

Personality

- Profound changes – exaggeration or general decay

Vascular Dementia

Aetiology

Vascular dementia (VaD) is due to any damage or disease process that involves the cerebral vasculature. Dementia occurs across a broad spectrum of disorders, from major strokes leading to neuronal loss and disruption of neural transmission to cerebral hypo-perfusion from any cause.

Vascular dementia has the following sub-types

- Multiple sub-cortical infarctions
- Single/multiple cortical infarctions
- Strategically placed infarction
- Binswanger type (white matter lesions)
- Multiple haemorrhagic lesions

Dementia may often consist of elements of both vascular sub-types and Alzheimer's disease.

The traditional view that diagnosis of vascular dementia results only from step-wise progression or a distinct vascular event has been broadened to include gradual onset with subclinical progression, such as cerebral hypo perfusion with widespread white matter ischaemia. The absence of step-wise decline does not exclude a diagnosis
of VaD.

Importance of diagnosis

- Vascular disease is a common cause of morbidity and mortality
- Early treatment of vascular disease and the associated factors that lead to vascular disease such as diabetes and hypertension will reduce the risk of end organ damage, which includes dementia
- Primary and secondary prevention strategies can be put in place
- Vascular dementia is under-appreciated; attention is usually focused on Alzheimer's disease and or on the physical deficits related to strokes
- May be a sentinel marker of familial risk; for example, a person with vascular dementia may have an underlying familial dyslipidemia that requires family screening

  See also the Alzheimer's Association of Australia's information on vascular dementia (16. Vascular Dementia).
  http://www.fightdementia.org.au/understanding-dementia/section-1-about-dementia.aspx
  http://www.fightdementia.org.au/common/files/NAT/20130912_NAT_HS_AboutDementiaHelpSheet_16.pdf

Vascular dementia clinical features

- Early deficits involve attention, executive function, though insight often preserved
- Memory often only mildly affected
- Often early disturbance of gait
- Over-active bladder (OAB): a common and early symptom
- Some patients have a vascular cognitive syndrome but not VaD
- The Mini-mental state examination (MMSE) is a poor screening tool for VaD

Normal pressure hydrocephalus is an important differential diagnosis to consider

Vascular Dementia diagnosis

- Cognitive loss (memory and two other domains)
- Presence of cerebrovascular lesions on imaging (or focal neurological signs)
- Onset of dementia within three months of a symptomatic stroke (classically a history of step-wise decline)

Vascular Dementia prevention

Prevention of vascular dementia involves treating the risk factors and using the same preventative measures as for the avoidance of heart attacks and strokes.

- Modify cardiovascular risk factors:
  - Cease smoking
  - Anti-platelet therapy
  - Correct hypertension
- Improve diabetes management

Although other treatments for vascular dementia seem promising, currently they remain unproven (Kirschner, 2009).

Vascular Dementia treatment

Cholinesterase inhibitors and memantine produce small benefits in cognition of uncertain clinical significance in patients with mild to moderate vascular dementia. Data are insufficient to support widespread use of these drugs in vascular dementia. Individual patient analyses are needed to identify sub-groups of patients with vascular dementia who might benefit (Kavirajan et al., 2007)

Fronto-temporal Dementia

Aetiology

Fronto-temporal dementia is a diverse group of dementias with no single underlying pathological factor.
The group includes:

- Semantic dementia
  - Impaired object identity and/or word meaning
- Primary progressive aphasia
  - Disorder of expressive language

Importance of diagnosis

- The second most common cause, after AD, of dementia in people under 65
- Approximately 30% of people diagnosed have a family history
- Some association with Motor Neurone Disease

See also Alzheimer's Australia's information on fronto-temporal dementia
(17. Fronto-temporal dementia)
http://www.fightdementia.org.au/understanding-dementia/section-1-about-dementia.aspx
http://www.fightdementia.org.au/common/files/NAT/20130912_NAT_HS_AboutDementiaHelpSheet_17.pdf

Fronto-temporal Dementia clinical features

- Personality and social conduct impaired
- Impairment of drive, motivation ,attention and planning
- Memory often relatively preserved
- May be disinhibited/over-active or passive/withdrawn

Dementia with Lewy bodies (DLB)

Aetiology

Like Alzheimer's Disease this form of dementia has a myloid protein but much fewer neurofibrillary tangles. The key difference is the presence of Lewy bodies.

- Lewy bodies are intra-neuronal eosinophilic spherical inclusions (stain forubiquitin)
- These are located in the brainstem, subcortex and cortex with relative preservation of medial temporal lobes
- In DLB there are some cases of clear genetic inheritance and a suggestion that genetic factors may account for a significant percentage of cases. It is still to be determined if DLB may be a single disease entity or several with the Lewy body marker.

See the National Institute of Neurological Disorders and Stroke for information on DLB.
http://www.ninds.nih.gov/disorders/dementiawithlewybodies/dementiawithlewybodies.htm

Importance of diagnosis

- This form of dementia accounts for 15% of all dementias
- It should be considered as a diagnosis
- Criteria for diagnosis have high specificity (80%) but low/variable sensitivity (25–80%). See Module 3: *Diagnosing dementia* for further information regarding diagnostic criteria
- It is critical to know this dementia exists because specific treatment options are available
- This dementia can be worsened substantially with neuroleptic medications; therefore these should not be prescribed
- This is a rapidly progressive disease (Barker et al., 2002)

See also Alzheimer's Australia's information on Dementia with Lewy bodies. Lewy Bodies disease) at:
http://www.fightdementia.org.au/understanding-dementia/section-1-about-dementia.aspx
http://www.fightdementia.org.au/common/files/NAT/20130912_NAT_HS_AboutDementiaHelpSheet_20.pdf

Dementia with Lewy bodies (DLB) – diagnostic criteria

- Progressive cognitive impairment
- Impaired memory
- Deficits in attention, executive function, visio-spatial ability

Core features include:

- Fluctuating cognition, attention, alertness
- Recurrent visual hallucinations
- Spontaneous motor parkinsonism

Supportive features include:

- Recurrent falls
- Syncope
- Transient loss of consciousness
- Neuroleptic sensitivity
- Systematised delusions

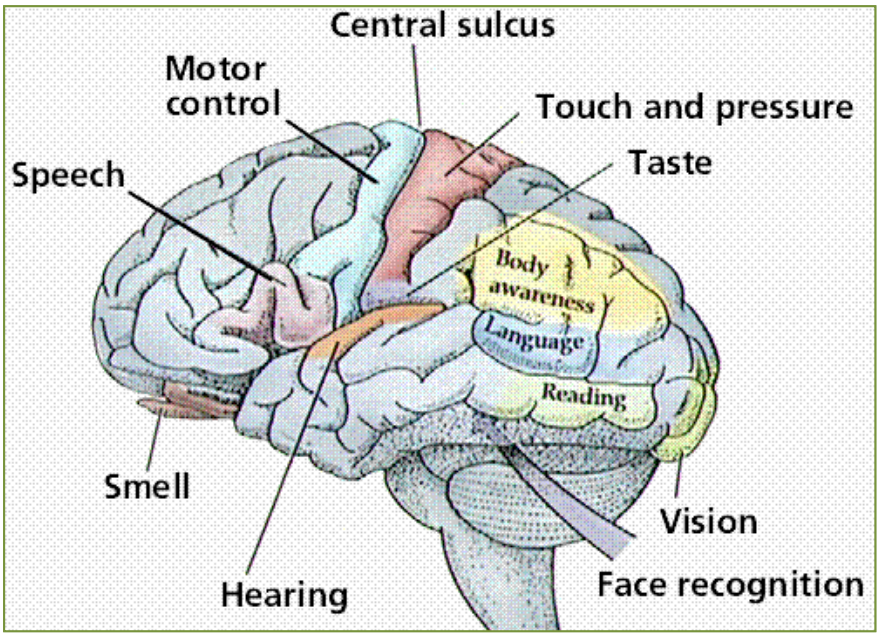
Activity

List six key points from the sections What is dementia and Types of dementia.

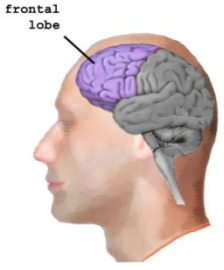
Manifestation of dementia

Functional areas of the brain

The diagram below shows the areas within the brain which control functional activities



Frontal Lobe



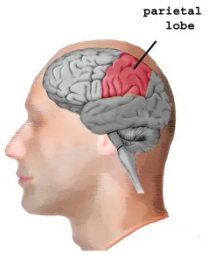
The so-called executive lobe, and site of self

- Judgment
- Inhibition and emotional response
- Initiation
- Personality and sense of self
- Memory of motor habits or plans

Damage to the frontal lobe causes:

- Impaired planning and problem-solving
- Distractibility with inability to task focus
- Behaviour disorders
- Difficulty in learning new information
- Lack of inhibition
- Contralateral hemiplegia, hemiparesis
- Expressive difficulties/motor aphasia

Parietal Lobe

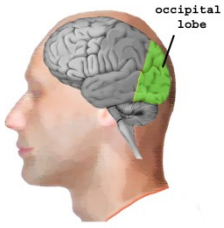


- Visual and tactile perception
- Processing and integration of sensory input
- Body orientation

Damage to the parietal lobe causes:

- Difficulties with writing, reading and naming objects
- Inability to discriminate between sensory stimuli
- Inability to locate and recognise parts of the body (neglect)
- Reduced awareness of environment space

Occipital Lobe



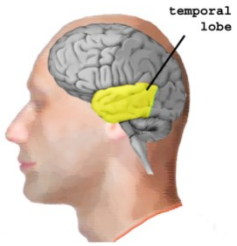
Visual perception

- Primary visual perception and association areas

Damage to the occipital lobe causes:

- Visual defects – reduction in opposite visual field
- Loss of ability to recognise objects in opposite field

Temporal Lobe



- Primary organisation of sensory input (auditory perception)
- Language – receptive speech
- Memory – short- and long-term information retrieval

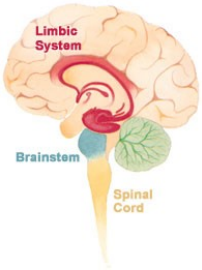
Damage to the temporal lobe causes:

- Memory – difficulties in retrieval of information
- Receptive/sensory aphasia (e.g. Wernicke's)
- Impaired concentration
- Aggression, agitation and irritability including altered sexual interest

Limbic system and hippocampus

Limbic system

- Above the brainstem and within the cerebrum
- Connects areas responsible for high and low functions
- Group of structures controlling
  - Emotions
  - Memories
  - Arousal (stimulation)



Hippocampus

- Part of the limbic system
- Storage and retrieval of memories

Damage to the limbic system causes:

- Memory impairment
- Emotional disturbances
- Behavioural disturbances

Impact of dementia on the person with dementia

Impact of dementia

The impact of dementia on the person concerned involves gradually progressing changes in:

- Memory – memory loss; short then long term
- Emotions – emotional disturbance
- Language – difficulty finding words
- Insight and motivation – gradual deterioration
- Planning – impact on abstract thought and judgement
- Orientation – confusion of time, place, person
- Function – impact on washing, dressing, planning and recognition
- Behaviour – aggression, withdrawal, wandering, sleep disturbance
- Incontinence – loss of bladder and bowel control
- Malnutrition – through poor oral intake
- Immobility and loss of function
- Death

Impact on carers

Although it is important to note that carers find the experience rewarding in many ways, carers of people with dementia often shoulder a physical, social, emotional, psychological and financial burden of caring (Carers Victoria). The impact of caring for a person with dementia is discussed further in Module 10: *Carer health*.

Impact on the community

According to the Alzheimer's Australia's summary of statistics on dementia (Alzheimer's Australia 2017, p. 15)

- By 2056, carers for people with dementia in aged care facilities will need to increase to 250,400 and 525,540 in the community.
- More than 50% of residents in Australian Government-subsidised aged care facilities have dementia.
- Approximately 83% of males with dementia and 71% of females with dementia live in the community.
- The main carers of a person with dementia living in the community is the individual's spouse or partner (approximately 35%), a daughter or son (41%) and other family members (15%).

A report prepared for Alzheimer's Australia by the National Centre for Social and Economic Modelling at the University of Canberra (2017) stated that the total direct costs of dementia at a national level would grow by 29% every ten years. In 2016 the estimated total direct cost is $8.8 billion rising to $24.1 billion in 2056 (Alzheimer's Australia 2017, p. 26).

The report also highlighted the social costs of dementia in stating that:

- In 2016 it was estimated there were around 400,800 adults living with dementia in Australia.
- Over the next 40 years the number of Australians with probable dementia is projected to increase to 1,100,890 in 2056.
- There are an estimated 25,938 individuals currently living in Australia with younger onset dementia (aged less than 65 years). This is expected to rise to around 42,250 persons by 2056.
- Around 244 individuals are developing dementia each day in Australia. By 2056, each day over 650 people will be joining the dementia population.
- Dementia is now the second leading cause of death of Australians contributing as an underlying cause of death to 7.9% of all deaths each year. However, the underlying cause of death on death certificates only represents 15% of all deaths of males with dementia and 22% of all deaths of females with dementia (Alzheimer's Australia, 2017, p. 6).

Thus, the impact on the community is extensive in terms of financial burden and social costs.

Summary

Dementia is an increasingly common cause of disability in our ageing community.

This module has provided an overview of dementia and has identified a number of important facts in relation to dementia. These include:

- Dementia is a progressive clinical syndrome of which there are many sub-types; the most common being Alzheimer's disease
- Accurate diagnosis is vital
- Early diagnosis is possible and controversial
- Dementia must be differentiated from Mild Cognitive Impairment, delirium and depression
- Diagnosis is a complex and multifaceted process
- Dementia impacts on social and occupational functioning
- Dementia impacts on the individual and their family and carers.

Evidence supports the fact that early diagnosis with appropriate person-specific management and support has potential to reduce the disability and burden to both the person and their carer.

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