Dementia, faith and the brain:
Clinical care through the eyes of faith
Part 1

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Acknowledgements

- Dr Rachael Birch
- Dr Carmela Salomon
- 3DN Staff
- Dementia Collaborative Research Centres
- Centre for Healthy Brain Ageing
Outline

- Dementia and faith: Why is this important?
- Key concepts:
  - Normal versus pathological ageing
  - Cognitive disorders in late life
- The brain and faith experiences
- Dementia, the brain and faith
- Important issues in the clinical context
  - Family carers
  - Pastoral care
  - Church community
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The Australian population is ageing

1971

(ABS 2008)
The Australian population is ageing

2060

(ABS 2008)
Estimated number of persons with dementia in Australia (2011-2020)

Adapted from: AIHW 2012. Dementia in Australia. Cat. no. AGE 70. Canberra: AIHW
Estimated number of persons with dementia in the world (2015-2050)

Why is dementia important?

• The global costs of dementia are increasing

Why is dementia important?

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  – US$ 818 billion in 2015

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  – US$ 818 billion in 2015
  – US$ 1 trillion in 2018

Why is dementia important?

• The global costs of dementia are increasing
  – US$ 818 billion in 2015
  – US$ 1 trillion in 2018
  – US$ 2 trillion in 2030

Why is dementia important?

- The global costs of dementia are increasing
  - US$ 818 billion in 2015
  - US$ 1 trillion in 2018
  - US$ 2 trillion in 2030

- Costs include:
  - Medical care (treatment of dementia related health conditions)
  - Social care (residential care and community care)
  - Informal care (unpaid care, e.g. family caregivers)

Why is dementia important for Australian Churches?
Demographic profile of Australian church attenders

- The proportion of church attenders aged over 60 years is greater than the proportion of that age group in the general population

Residency of persons with dementia in Australia (2010-2011)

Adapted from: Australian Institute of Health and Welfare 2012. Dementia in Australia. Cat. no. AGE 70. Canberra: AIHW.
Residency of persons with dementia in Australia (2010-2011)

The majority of care facilities (60%) were not for-profit, including religious and community organisations.

Adapted from: Australian Institute of Health and Welfare 2012. Dementia in Australia. Cat. no. AGE 70. Canberra: AIHW.
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## Normal and Abnormal Cognitive Ageing

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<thead>
<tr>
<th>Normal Cognitive Ageing</th>
<th>Abnormal Cognitive Ageing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occasional forgetfulness</td>
<td>Forgetting whole experiences</td>
</tr>
<tr>
<td>Some slowing down of thinking skills</td>
<td>All thinking skills affected</td>
</tr>
<tr>
<td>Decision making OK</td>
<td>Major trouble with decision making</td>
</tr>
<tr>
<td>Knows surroundings to usual extent</td>
<td>Not knowing familiar surroundings</td>
</tr>
<tr>
<td>Recognises loved ones and carers as usual</td>
<td>Lack of recognition of loved ones or familiar carers</td>
</tr>
<tr>
<td>Good mental health</td>
<td>Hearing voices, seeing things that aren’t there</td>
</tr>
<tr>
<td>If loss of skills, this mainly relates to health conditions</td>
<td>Loss of skills</td>
</tr>
</tbody>
</table>
A continuum of cognitive and functional abilities

- Normal Ageing
- Mild Cognitive Impairment (MCI)
- Dementia

Other ‘intermediate’ syndromes eg:
- Age associated memory impairment
- Minor neurocognitive disorder

Alzheimer’s disease
- Vascular
- Fronto-temporal
- Dementia with Lewy Bodies
- Other
What is Mild Cognitive Impairment (MCI)?

• Cognitive = (language, problem solving)

• MCI definition requires:
  – Subjective complaint about a problem with memory or other thinking skills ‘cognitive complaint’
  – Objective impairment on cognitive testing
  – But not sufficient to cause functional impairment

• MCI is not dementia but may be progress in severity to become dementia
What is dementia? It’s a syndrome:

• With several causes
• Usually progressive and irreversible
• Decline in some thinking skills
• Most often but not always affects memory early
• Decline in the person’s ability to function independently
• Can be younger (<65 years) or older (65+ years) onset

• It is not a normal part of ageing
How Common are Cognitive Syndromes in late life?

• Dementia:
  – 6%+ of people over 65 years
  – 20% of people over 80 years
  – 30% of people over 90 years

• Mild Cognitive impairment:
  – Much more common than dementia
  – Develops into AD at a rate of about 10-15% per year
Dementia sub-types have different clinical manifestations
Dementia subtypes: Alzheimer’s disease

- Most common form of dementia
- Progressive problems with memory, communication, and complex thinking skills
- Behavioural changes (agitation, depression)
- Brain shrinkage
- ‘Plaques’ and ‘tangles’
Dementia subtypes: Vascular dementia

- Second most common form of dementia
- Related to blood circulation problems to the brain
- Primary impairments in ‘executive abilities’ – planning, organising, making decisions
- Often ‘step-wise’ progression
- Depression and apathy are common
- Symptoms vary according to size and location of damage in the brain
Dementia subtypes: Frontotemporal dementia

- Usually has younger onset (<65 years). Almost as common as younger onset AD (but much less common than older onset AD)
-Behavioural variant:
  - Changes in personality and behaviour
-Primary progressive aphasia:
  - Progressive difficulties with speaking, writing, and comprehension
    - Semantic variant: Difficulties understanding and formulating words
    - Non-fluent variant: Speaking is laboured or ungrammatical
- Problems with motor function (ALS, CBS, PSP)
- Cell damage to frontal and temporal regions of the brain
Dementia subtypes: Dementia with Lewy Bodies

- Cognitive abilities fluctuate (go up and down)
- Visual hallucinations are common
- Motor symptoms (rigidity and other parkinsonian features)
- Abnormal clumps (lewy bodies) in the cortex of the brain
- Can co-occur with other dementia pathologies (AD and/or VaD) = mixed dementia
Dementia subtypes: other causes

• Traumatic brain injury (TBI)
  – Moderate/severe TBI in early life may increase risk for dementia in later life. Milder injuries, such as multiple concussions, may also increase risk (e.g. chronic traumatic encephalopathy)

• Alcohol abuse
  – Excessive consumption of alcohol can cause brain injury, affecting memory and thinking skills (e.g. Wernicke/Korsakoff). May be caused by a toxic effect of alcohol on the brain or nutritional problems (lack of thiamine).

• Other neurodegenerative disorders
  – E.g. Parkinson’s disease, Huntington’s disease

• Infective brain diseases
  – E.g. HIV, syphilis, lyme disease, variant Creutzfeldt-Jacob disease (“mad cow”)
Cognitive features by dementia subtype

<table>
<thead>
<tr>
<th>Cognitive domains affected:</th>
<th>Alzheimer's disease</th>
<th>Vascular dementia</th>
<th>Fronto-temporal dementia</th>
<th>Parkinson's disease dementia</th>
<th>Dementia with lewy bodies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning and memory</td>
<td>✓✓✓</td>
<td></td>
<td></td>
<td>✓✓✓</td>
<td>✓✓✓</td>
</tr>
<tr>
<td>Executive function</td>
<td>✓✓✓</td>
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<td>✓✓✓</td>
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<tr>
<td>Complex attention</td>
<td>✓✓✓</td>
<td>✓✓✓</td>
<td></td>
<td></td>
<td>✓✓✓</td>
</tr>
<tr>
<td>Social cognition</td>
<td>✓✓✓</td>
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Other features:

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<td>Depression and/or apathy</td>
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<td>Hallucinations or delusions</td>
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Dementia is a Journey with different ‘stages’

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<td>Severe decline in thinking skills</td>
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<td>May not know what day it is, may have problems communicating</td>
<td>May lose awareness of surroundings, may not recognise close family</td>
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<td>May feel worried or sad</td>
<td>Can get upset or agitated</td>
<td>Physical abilities decline, personality may change</td>
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<td>May be able to function independently (e.g. dressing, feeding)</td>
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Dementia is a Journey with different ‘stages’

**Mild**
- Noticeable problems with thinking skills
- May have problems recalling recent events, or difficulty concentrating
- May feel worried or sad
- May be able to function independently (e.g. dressing, feeding)

**Moderate**
- More pronounced thinking difficulties
- May not know what day it is, may have problems communicating
- Can get upset or agitated
- May have problems with daily tasks (e.g. bathing, preparing food)

**Severe**
- Severe decline in thinking skills
- May lose awareness of surroundings, may not recognise close family
- Physical abilities decline, personality may change
- Cannot function independently, need high levels of care
# Dementia is a Journey with different ‘stages’

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Faith ............

• Hebrews 11:1
  – Now faith is the assurance of things hoped for, the conviction of things not seen

• Engages multiple complex and varied neuropsychological processes
  – such as thoughts ‘cognitions’
  – subjective feelings ‘emotions’
  – complex behaviours

• Responses include complex social and response aspects which are assisted by:
  – Intact social skills
  – Intact theory of mind
  – Ability to express empathy, demonstrate care, share understanding and engage in shared mission
Organisation of the brain

Frontal lobes

Parietal lobes

Temporal lobes

Occipital lobes
Functional neuroanatomical correlates of spiritual and religious experiences

• Religious and spiritual experiences are associated with:
  – Activation of prefrontal and temporal lobes
  – De-activation of parietal lobes

• Structural brain studies
  – Lesion
  – Surgical
  – Structural MRI

• Functional brain studies
  – Virtual lesions via stimulation eg TMS
    • ‘Turning off’ inferior parietal lobe associated with increased intensity of religious experience
    • ‘Turning on’ inferior parietal lobe reduces religious intensity of experience
The brain mediates our faith experiences

• In health (and sickness) our brain is one key mediator of our faith experiences
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How might dementia impact faith?

- Powerful interaction
- Multiple variables:
  - Christian journey
  - Personal attributes
  - Dementia type, stage
  - Care context
## Frontal lobes

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<tr>
<th>Lobes</th>
<th>Functions</th>
<th>Projected impact of dysfunction</th>
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| Frontal| • Planning  
         • Problem solving  
         • Judgement  
         • Attention  
         • Impulse control | • disorganisation, poorer concentration  
                               • trouble with more complex tasks and concepts;  
                               • impaired judgement; less discretion  
                               • inappropriate behaviour, etc |
| Temporal| • Memory, auditory processing  
            • New learning  
            • Language | |
| Parietal| • Receives information from senses (e.g. touch)  
            • Monitors body position in space | |
| Occipital| • Receives and interprets visual information | |
## Temporal lobes

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<tr>
<td>Temporal</td>
<td>• Memory, auditory processing</td>
<td>• Trouble remembering new things</td>
</tr>
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<td></td>
<td>• New learning</td>
<td>• Forgetting commitments, conversations</td>
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<tr>
<td></td>
<td>• Language</td>
<td>• Reduced comprehension/ expression</td>
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          • Problem solving  
          • Judgement  
          • Attention  
          • Impulse control |                                                                     |
| Temporal| • Memory, auditory processing  
          • New learning  
          • Language  |                                                                     |
| Parietal| • Receives information from senses (e.g. touch)  
          • Monitors body position in space | Misidentification; reduced capacity to sequence complex motor tasks, do calculations |
| Occipital| • Receives and interprets visual information |                                                                     |
## Occipital lobes

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<td>Occipital</td>
<td>• Receives and interprets visual information</td>
<td>• Misidentification; visual hallucinations</td>
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How might faith impact dementia?
Relationship between faith practices and mental health in older people

• Positive mental health
• Reduced stress
• Improved self esteem
• Coping behaviours
Faith and Dementia Risk

- Ageing
- Developmental factors
- Vascular risk factors: smoking, hypertension, diabetes, high cholesterol, obesity
- Toxins, trauma and infections:
  - Alcohol (and other drugs)
  - Head injuries
- Exercise
- Cognitive activity
- Social engagement
Relationship between faith practices and cognitive decline/dementia

• Brain volumes: a small number of studies suggest that religious practices and intimacy with God is associated with greater brain volumes at baseline, and/or slower rate of shrinkage in brain
  – Cross sectional studies
  – Longitudinal studies
  – However, some inconsistency in data

• Same observed with other practices eg Meditation
  – Lower rates of brain shrinkage with age
  – Likely impact on stress, cortisol, stimulation of neuronal growth and development
Faith and the dementia journey

“I know in my mind God’s promise: He will never leave me or forsake me and that nothing can separate me from His love. As my journey into Alzheimer’s progresses, my walk with the Lord grows more precious. I am frightened that the day will come when I no longer will be able to think of God’s everlasting promises. Then I will have to rely on my dear friends in Christ to keep me close to our Lord and to comfort and reassure me with simple Scripture passages and prayer.”

A Christian Australian woman with Alzheimer’s disease

Faith and the Dementia Journey

• Studies support a link between rate of cognitive decline and religious practices:
  – Engagement with religion/spirituality generally associated with slower cognitive decline
  – More rapid decline in cognition and behaviour associated with lower religiosity at baseline

• Carer stress higher in those with lower religiosity

• In those with dementia, religious practice including meditation and mindfulness appears to improve QoL

• In formal studies, people with dementia report enhancement of ability to remain positive
Why would faith help?

- Cognitive stimulation: reading, prayer, church community
- Reduced stress levels, lower cortisol
- God is in control:
  - Meaning and a context for the experience
  - Less worry about ‘unknown’ and ‘uncertain’ and ‘uncontrollable’ future
  - Hope in the face of adversity - diagnosis of dementia
- Church community
  - Communal and individual prayer
  - Maintenance of social networks
  - Social supports for carer and person with dementia
  - A buffer against psychological stress and depression
  - An outward focus, and participation and contribution to the greatest extent possible
Behavioural and Psychological Manifestations of Dementia (BPSD): challenges in a faith context

- Agitation and aggression
- Changes in responses
  - Irritability
  - Disinhibition (sexual)
  - Swearing
  - Apathy
- Changes in motivation
  - Apathy
- Psychotic experiences:
  - Delusions
  - Hallucinations
- Mood changes:
  - Depression
  - Elation/euphoria
- Anxiety
- Other
  - Calling out
  - Screaming
  - Wandering
  - Sleep disturbance & nocturnal agitation
BPSD: importance in a faith context

• The person
• The carer & stress
• The residential care setting
  – Staff
  – Residents
  – budget
• Limited studies
• Religion/spirituality associated with lower BPSD
BPSD management: importance in a faith context

• Management of BPSD: ‘Restrictive practices’:
  – Physical restraint
  – Chemical restraints
  – Shifts in expectations

  • Australian Law Reform Commission see

  • UN Committee on the Rights of Person with Disabilities 2013:
    “The Committee recommends that the State party take immediate steps to end such practices, including by establishing an independent national preventive mechanism to monitor places of detention—such as mental health facilities, special schools, hospitals, disability justice centres and prisons—in order to ensure that persons with disabilities, including psychosocial disabilities, are not subjected to intrusive medical interventions.”
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Important issues for families and carers

• A holistic approach
• Clear benefits of nurturing faith and supporting engagement
• Impact of dementia will be very much determined by the type and the stage
Important issues in pastoral care

• Dementia equipped:
  – Churches
  – Members
  – pastors (the person, family, others)

• How do we support engagement and fellowship to the greatest extent possible
Important issues for organisations

• Churches:
  – Dementia and cognitive decline as a developmental life stage
  – we equip our youth prospective couples, married couples, singles…..what about our elderly

• Dementia care settings
  – supporting continued engagement with the person’s church community
  – Nurturing faith in a residential care setting
  – Supporting families
Summary

• Demographic changes in society demand attention
• An understanding of dementia and its types is an important precursor to supporting faith in clinical care
• Dementia affects brain regions and functions, which have an impact on faith and worship
• Supporting faith assist in the support of people with dementia
• Participation of people with dementia in God’s community should be a priority in pastoral care and church communities
• Broader principles and approaches are relevant for people with a range of cognitive disabilities
Research, Clinical and Carer Resources

• For a relatively recent review:

• Dementia Collaborative Research Centres

• Centre for Healthy Brain Ageing
  – https://cheba.unsw.edu.au/

• Alzheimer’s Australia