Do Māori and Pacific peoples present with dementia at a younger age?

Dr Susan Yates
Clinical Psychologist / Neuropsychologist / Research Fellow
Estimated Dementia in NZ

2016 estimates:

• 62,287 people in NZ have dementia, with 170,212 by 2050

• Total economic cost associated: $1.7 billion

• Total burden of disease cost associated: $5.0 billion

• Overseas research indicates 50 – 80% of cases are undiagnosed/undocumented
Estimated Dementia in NZ

Chart c: Prevalence projections by ethnicity, 2016 to 2038

Source: Deloitte Access Economics calculations
Real NZ Data

NZ DHB data
- CDHB Princess Margaret Hospital: Strong link between PWD and caregiver QoL; costs increase with dementia severity; increased carer distress with less support
- Data collection is poor or not routinely collected on dementia in most health settings

Other existing research
- ‘Dementia in Old age and the need for services’ (1983)
- LiLACS NZ Study: No difference between older Maori and non-Maori for dementia prevalence. ? Accuracy as only a screening and not a Maori-specific tool.
- Margaret Dudley: A Maori approach to the assessment and management of dementia (ongoing research)
CM Health (Counties Manukau DHB)

- Counties Manukau DHB includes the territorial authorities (TAs) of Auckland, Waikato District and Hauraki District.
- Population around 512,000 (11.5% of NZ population)
- Older adults (over 65s) = approximately 53,000 (10.5%)
- Ethnically and culturally diverse population
  - 16% Maori, 23% Pacific, 22% Asian, 38% Other
- 34% of population living in areas classed as the most socio-economically deprived; highest rare of illness related to overcrowding and poor quality housing; higher rates of avoidable mortality and hospitalisation rates
CM Health Memory Team

- Referral sources: primary and secondary care

- Patients seen at home with families (+/- interpreter)
- History & collateral history, tests of cognition and ADLs
- CT/MRI brain scan, blood tests

- Consensus diagnosis at MDT
- All clinical data entered into spreadsheet
CM Health Memory Team

- 1106 people referred in 4 years (2013-2016)
- Mean age = 74.6 years. 42% = male
- 40% NZ European, 26% Pacific peoples, 16% Māori, 5% Asian, 12% other/unknown (equivalent to CMDHB population)
- 785/1106 were assessed (remainder diverted or declined)
- 74 required an interpreter (mostly Pacific, n=65)
- 60% dementia (77% new), 13% MCI, 17% deferred due to medical or psychiatric illness, 10% no diagnosis.

- Our sample: 360 patients with a new diagnosis of dementia
### Univariate results

<table>
<thead>
<tr>
<th></th>
<th>NZ European</th>
<th>Pacific</th>
<th>Māori</th>
<th>Other</th>
<th>Total (n=360)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample size</strong></td>
<td>142 (39%)</td>
<td>126 (35%)</td>
<td>42 (12%)</td>
<td>49 (14%)</td>
<td>360 (100%)</td>
</tr>
<tr>
<td><strong>Mean age (SD)</strong></td>
<td>79.2 (7.4)</td>
<td>74.3 (7.6)</td>
<td>70.2 (7.6)</td>
<td>78.0 (8.5)</td>
<td>76.2 (8.3)</td>
</tr>
<tr>
<td><strong>Gender (n, % male)</strong></td>
<td>65 (46%)</td>
<td>44 (35%)</td>
<td>17 (40%)</td>
<td>25 (51%)</td>
<td>151 (42%)</td>
</tr>
<tr>
<td><strong>Dementia severity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild dementia</td>
<td>81 (57%)</td>
<td>56 (44%)</td>
<td>25 (58%)</td>
<td>25 (51%)</td>
<td>187 (52%)</td>
</tr>
<tr>
<td>Moderate to severe dementia</td>
<td>61 (43%)</td>
<td>70 (56%)</td>
<td>18 (42%)</td>
<td>24 (49%)</td>
<td>173 (48%)</td>
</tr>
<tr>
<td><strong>Dementia subtype</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alzheimer's disease</td>
<td>67 (47%)</td>
<td>51 (40%)</td>
<td>21 (49%)</td>
<td>23 (47%)</td>
<td>162 (45%)</td>
</tr>
<tr>
<td>Vascular dementia</td>
<td>23 (16%)</td>
<td>18 (14%)</td>
<td>10 (23%)</td>
<td>4 (8%)</td>
<td>55 (15%)</td>
</tr>
<tr>
<td>Mixed dementia</td>
<td>32 (23%)</td>
<td>38 (30%)</td>
<td>4 (9%)</td>
<td>8 (16%)</td>
<td>82 (23%)</td>
</tr>
<tr>
<td>Other dementias</td>
<td>20 (14%)</td>
<td>19 (16%)</td>
<td>8 (18%)</td>
<td>14 (29%)</td>
<td>61 (17%)</td>
</tr>
</tbody>
</table>
### Multivariate results: age, ethnicity and dementia subtype

<table>
<thead>
<tr>
<th></th>
<th>NZ European (n=142)</th>
<th>Pacific (n=126)</th>
<th>Maori (n=43)</th>
<th>Least squares mean age adjusted for ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AD</strong></td>
<td>78.3 (7.7) n=67</td>
<td>73.1 (6.7) n=51</td>
<td>70.2 (8.0) n=21</td>
<td>75.0 95% CI: 73.7-76.2</td>
</tr>
<tr>
<td><strong>VD</strong></td>
<td>79.6 (5.8) n=23</td>
<td>74.0 (8.0) n=18</td>
<td>72.5 (4.8) n=10</td>
<td>76.7 95% CI: 74.7-78.7</td>
</tr>
<tr>
<td><strong>Mixed</strong></td>
<td>83.6 (6.1) n=32</td>
<td>76.9 (6.9) n=38</td>
<td>73.8 (6.0) n=4</td>
<td>79.2 95% CI: 77.4-80.9</td>
</tr>
<tr>
<td><strong>Other dementia</strong></td>
<td>74.9 (6.8) n=20</td>
<td>72.8 (9.9) n=19</td>
<td>65.6 (11.3) n=8</td>
<td>72.2 95% CI: 70.3-74.2</td>
</tr>
</tbody>
</table>
So what does it mean?

Māori & Pacific peoples presenting at younger ages

**Possible reasons:**
- Selection bias – memory service sample but sample is representative of local population
- Clinician bias – dementia severity and subtype
- Confounding due to reduced life expectancy - but would expect reduced numbers also
- Chance – p values for age are <0.0001

**Or is it a real effect?**
- Similar findings in studies of indigenous populations Canada, Australia, United States, Guam and Brazil.
Possible mechanisms of action: is dementia onset brought forward?

Genetic risk factors: population differences in apoE4 genotypes?
Socioeconomic risk factors: education, deprivation
Medical risk factors: hypertension, diabetes, heart disease, stroke, diet, smoking, alcohol, TBI, hearing loss

To find out we need an NZ dementia prevalence study
LiDiA timeline

2018: Qualitative research in Māori, Pacific & Asian

2019: Translation & validity testing of 10/66 dementia protocol in Te Reo Maori, Samoan, Tongan, & Hindi

2019: Feasibility study for sampling methods

2020: NZ dementia prevalence study?
LiDiA research team leads:

Sarah Cullum (PI)
Margaret Dudley (Māori)
Fiva Fa’alau (Samoan)
Tony Kautoke (Tongan)
Rita Krishnamurthi (Indian)
Gary Cheung (Chinese)
Susan Yates
Ngaire Kerse

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References

- Dementia Economic Impact Report 2016