Increased medication use is associated with poorer health-related quality of life among people with diabetes independent of glycaemia

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The North West Adelaide Health Study

- Biomedical cohort study
- Established in 2000
- Collaboration between The Queen Elizabeth Hospital, Lyell McEwin Health Service, South Australian Department of Health, University of Adelaide, University of South Australia
- Designed to assess prevalence of priority conditions, risk factors and determinants across continuum, and progression over time

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Background

- People with diabetes experience impaired quality of life compared to those without diabetes
- Quality of life is impaired before diabetes has developed
- Diagnosis of diabetes is associated with reduced quality of life
- Poor glucose control is associated with impaired quality of life among people with diabetes

Aim

- To examine the relationship between medication use and health related quality of life among people with diabetes, controlling for HbA1c, using longitudinal data from the North West Adelaide Health Study.
Methods

- Households randomly selected from Electronic White Pages
- Approach letter sent to households
- CATI
- Person last to have birthday, aged 18+ years, selected
- Appointment made to attend clinic
- Information pack sent including questionnaire

Clinic assessment

- Fasting blood test (glucose, lipids, glycated haemoglobin, creatinine)
- Blood pressure
- Height and weight
- Waist and hip circumference
- Lung function spirometry
- Skin allergies
- Comprehensive list of medications currently being taken


- Initial sample
  - n=10096
- Eligible sample
  - n=8213
- Interviewed
  - n=5850
- Attended clinic
  - n=4060
- Ineligible
  - n=1883
- Non-contacts
  - n=215
- Refused interview
  - n=2148
- Refused clinic
  - n=1790

Attended clinic / interviewed = 69.4% participation rate
Attended clinic / eligible sample = 49.4% response rate

Response rate - Stage 2 (2004-2006)

- Initial sample
  - n=4060
- Eligible sample
  - n=3957 (97.5%)
- Information obtained
  - n=3564 (90.1%)
- Questionnaire
  - n=3145 (81.2%)
- Deceased
  - n=100
- Duplicate IDs
  - n=3
- Non-contacts
  - n=233 (5.9%)
- No information obtained
  - n=160 (4.0%)
- Attended clinic
  - n=3206 (81.0%)
- Telephone interview
  - n=3485 (88.1%)

Quality of life

Short Form 36 (SF-36)

8 scales
- Physical functioning
- Role physical
- Bodily pain
- General health
- Vitality
- Social functioning
- Role emotional
- Mental health
Diabetes

- Diabetes information was collected as part of the self-complete questionnaire
- "Have you ever been told by a doctor that you have diabetes?"
- Fasting plasma glucose and HbA1c measured at clinic visit
- Determined diagnosed and undiagnosed diabetes

Medication Use

- Medications data collected at clinic assessment
- Participants asked to bring in all medications currently being taken
- Both prescribed and complementary/alternative

Diabetes continuum

<table>
<thead>
<tr>
<th>No diabetes</th>
<th>IFG ≥ 6.1 mmol/L</th>
<th>Diabetes (≥ 7.0 mmol/L or self-reported)</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAGE 1</td>
<td>89.1%</td>
<td>4.3%</td>
</tr>
</tbody>
</table>

STAGE 1 (n=4060)

89.1% 4.3% 6.6%

STAGE 2 (n=3180)

84.8% 8.0% 7.2%

Annual incidence of diabetes: 6.8 cases per 1000 population

Mean SF-36 scores across the diabetes continuum

* Significantly different to normal glucose (p<0.01) (adjusted for age, sex, cardiovascular disease)

Development of diabetes and quality of life at Stage 2

* Significantly different to "Did not develop diabetes" (p<0.01) (adjusted for age and sex)
**Mean SF-36 scores for people with and without diabetes**

* Significantly different to No Diabetes (p<0.01)
* Significantly different to Diabetes with good glycaemic control (p<0.01)
(adjusted for age, sex, cardiovascular disease)

**Quality of Life & Medication Use**

* Significantly different to “Diabetes and taking <= 2 medications” (p<0.05)
(adjusted for age, sex, metabolic control (HbA1c))

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**Conclusions**

- The number of medications being taken by people with diabetes is associated with impaired quality of life, even after adjusting for metabolic control.
- Initiation of additional medications among people with diabetes should consider health-related quality of life.

**Contact details**

- North West Adelaide Health Study
  [www.nwadelaidehealthstudy.org](http://www.nwadelaidehealthstudy.org)
- Population Research & Outcome Studies Unit (SA Department of Health)