Perceived barriers to healthy lifestyle activities in midlife and older Australian women with type 2 diabetes.

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Introduction

- This study is part of a Master of Applied Science (Research) project
- Completed April 2011

- Master’s study linked to *Reducing chronic disease among adult Australian women* study (PI Debra Anderson) – a randomised multi-modal lifestyle intervention for risk factor reduction in midlife Australian women

- Australian Research Council linkage project
Study Aims

- **Primary aim** – to explore the level and type of perceived barriers to healthy lifestyle activities in midlife and older Australian women with type 2 diabetes

- **Secondary aim** – to explore the relationship of perceived barriers to smoking behaviour, fruit and vegetable intake, physical activity and body mass index
Background – Type 2 diabetes

- Type 2 diabetes is a significant health issue for the international and Australian community
- Prevalence increasing globally
- Predicted to be the leading cause of disease burden in Australia by 2023\(^1\)
- Priority area for prevention and management policies and strategies\(^2\)
- In women, prevalence increases markedly after the age of 45 years\(^1\)

1. Australian Institute for Health and Welfare, 2010
2. World Health Organization, 2008; Australian National Health Priority Action Council, 2006
Lifestyle risk factors

- **Modifiable risk factors** for type 2 diabetes - smoking, poor nutrition, physical inactivity and obesity

- **Primary prevention** - type 2 diabetes, preventable through healthy eating, regular exercise and avoidance of smoking

- **Secondary prevention** important to slow disease progression and reduce complications
Health Promotion Model\(^3\) (HPM)

- **Barriers to action** one of a number of social-cognitive factors which influence health promoting behaviour

- **Perceived barriers** are defined as:

\[
\text{real or imagined … perceptions concerning the unavailability, inconvenience, expense, difficulty or time consuming nature of a particular action … often viewed as mental blocks, hurdles, and personal costs of undertaking a given behaviour}^{4}
\]

- In 80% of studies using the HPM – perceived barriers were a significant determinant of health promoting behaviour

Perceived barriers – Well women

- **USA** – substantial body of research
  - African American, Latina and Native American women - time, fatigue, lack of energy, role responsibilities and motivation commonly reported\(^5\)

- **Australia**
  - Ethnic minority women – cultural and language barriers\(^6\)
  - Post-menopausal women, tropical QLD – self-efficacy, weather, transport\(^7\)
  - Older women – health issues, cost, family support, social acceptability, injury, poor health\(^8\)
  - Barriers to weight control – socio-economic status\(^9\)

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6. Sawriker, 2010; Caperchione, 2011; Stewart & Do, 2003  
8. Lee 1993; Booth, 1997; Newson & Kemps, 2007  
9. Siu et al., 2011
Perceived barriers – Women with a chronic disease

- Similar barriers to well women
  - Time, cost, lack of energy, safety, social support\(^9\)

- Disease specific barriers - osteoarthritis, MS, CVD
  - Pain, fear of falling, cardiac symptoms\(^{10}\)

- Becker and colleagues
  - Development of BHADP scale\(^{11}\)

- Women with MS, polio, post-polio syndrome and fibromyalgia
  - Perceived barriers a significant predictor of health promoting behaviour\(^{12}\)

10. Crane & McSweeney, 2003; Pierce, 2005; Shin et al., 2006
12. Beal et al., 2009; Becker & Stuifbergen, 2004, Stuifbergen et al., 2003
Barriers - Australian women with diabetes

- Dietary behaviour change in Aboriginal adults attending a diabetes cooking course
  - Lack of family support, social isolation caused by dietary change, poor oral health, depression, cost of food, generational food preferences

- Gestational diabetes – postpartum dietary behaviours
  - Confidence and skills in cooking healthy foods, family food preferences, time pressures

13. Abbott et al, 2010
Method

- Cross sectional descriptive study
- Self-report questionnaire
- Convenience sample $N = 41$
- Inclusion criteria
  - Adult women, 45 years or older, type 2 diabetes, attending community health clinics in Brisbane, Australia
- Exclusion criteria
  - Unable to read or understand English, receiving palliative care, other contra-indications
- Ethical review and clearance obtained
- Informed consent
Data collection

- **Self-report questionnaire** at baseline and 12 weeks
- **Socio-demographic information** – baseline
- Height and weight – **BMI** calculated (Ht m$^2$/wt kg)
- **Exercise**
  - Weekly aerobic exercise frequency 5 categories
  - Level of physical activity – visual analogue scale 0 – 10
- **Fruit and vegetable intake** – serves per day
- **Smoking** – cigarettes per day
- **Barriers scale** – Barriers to health promotion among disabled persons scale (BHADP)$^{15}$
  - 18 items, Likert type scale, 4 response categories

Data analysis

- SPSS version 18
- Data cleaning and data checking
- **Missing data** - 7 questionnaires some missing BHADP scale items
  - Where at least 50% items scored, average item score calculated and value substituted for missing items
- Total barriers score (TBS) calculated
- Descriptive and inferential statistics used in analysis
### Results – Socio-demographic characteristics N = 41

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (mean, SD)</strong></td>
<td>66.03 (SD = 8.45)</td>
</tr>
<tr>
<td></td>
<td>Range 51 - 84</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>21 (51.2%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>9 (22.0%)</td>
</tr>
<tr>
<td>Single, divorced, separated</td>
<td>11 (26.8%)</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td></td>
</tr>
<tr>
<td>Primary school</td>
<td>6 (14.6%)</td>
</tr>
<tr>
<td>Junior high school</td>
<td>13 (31.7%)</td>
</tr>
<tr>
<td>Senior school</td>
<td>6 (14.6%)</td>
</tr>
<tr>
<td>Trade, technical certificate</td>
<td>12 (29.3%)</td>
</tr>
<tr>
<td>University or college degree</td>
<td>4 (9.8%)</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
</tr>
<tr>
<td>Full time/part-time</td>
<td>8 (19.4%)</td>
</tr>
<tr>
<td>Retired</td>
<td>27 (65.9%)</td>
</tr>
<tr>
<td>Home duties/unable to work</td>
<td>6 (14.7%)</td>
</tr>
<tr>
<td><strong>Household income AUS$$</strong></td>
<td></td>
</tr>
<tr>
<td>&lt; $20 000</td>
<td>18 (43.9%)</td>
</tr>
<tr>
<td>$20 000 - $60 000</td>
<td>13 (31.7%)</td>
</tr>
<tr>
<td>&gt; $60 000</td>
<td>8 (19.6%)</td>
</tr>
</tbody>
</table>
## Results – Lifestyle variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMI (mean, SD)</strong></td>
<td>34.4 (SD = 6.8)</td>
</tr>
<tr>
<td><strong>BMI categories</strong></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>2 (4.9%)</td>
</tr>
<tr>
<td>Overweight</td>
<td>7 (17.1%)</td>
</tr>
<tr>
<td>Obese</td>
<td>30 (73.2%)</td>
</tr>
<tr>
<td><strong>Weekly aerobic exercise</strong></td>
<td></td>
</tr>
<tr>
<td>Daily</td>
<td>5 (12.2%)</td>
</tr>
<tr>
<td>5-6 times per week</td>
<td>4 (9.8%)</td>
</tr>
<tr>
<td>3-4 times per week</td>
<td>8 (19.5%)</td>
</tr>
<tr>
<td>1-2 times per week</td>
<td>6 (14.6%)</td>
</tr>
<tr>
<td>None</td>
<td>18 (43.9%)</td>
</tr>
<tr>
<td>Physical activity scale 0 -10</td>
<td>Mean 3.7 (SD = 2.1)</td>
</tr>
<tr>
<td><strong>Fruit and vegetable intake</strong></td>
<td></td>
</tr>
<tr>
<td>Daily consumption – yes</td>
<td>38 (92.7%)</td>
</tr>
<tr>
<td>Daily consumption – no</td>
<td>3 (7.3%)</td>
</tr>
<tr>
<td>Average serves per day</td>
<td>Mean 4.1 (SD = 1.9)</td>
</tr>
<tr>
<td><strong>Current smoker</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1 (2.4%)</td>
</tr>
<tr>
<td>No</td>
<td>40 (97.6%)</td>
</tr>
</tbody>
</table>
Results – Level and type of barriers

- Total barriers score (TBS) possible range 18 - 72
- Mean TBS 32.12 (SD = 8.7)
- Range in this sample 18 – 53
- Top ranked items
  - Not interested
  - Concern about safety
  - Too tired
  - Lack of money
  - Feeling what I do doesn’t help
  - Lack of time
Results – Barriers and lifestyle variables

- No significant relationship between TBS and BMI, physical activity and fruit and vegetable intake
- No significant relationship between TBS and socio-demographic variables
Discussion – Level of barriers

- Average level of barriers in this sample of women (32.12) similar to the level reported in other studies using the BHADP scale
  - Adults with a range of disabilities\textsuperscript{16} (33.5)
  - Adults with multiple sclerosis (33.54) and post-polio syndrome (33.12)\textsuperscript{17}

\textsuperscript{16} Stuifbergen & Becker, 1994
\textsuperscript{17} Becker & Stuifbergen, 2004
Leading barriers

- Leading barriers items also similar to barriers reported in other studies, particularly studies of women over age 65 years old
  - Lack of interest
  - Concern about safety
  - Fatigue
  - Lack of money
  - Feeling what I do doesn’t help
  - Lack of time
Contrast with other studies

- Unlike other studies of women\(^{18}\), *other responsibilities* was ranked among the lowest barriers in this study.
- Other studies have found a relationship between obesity, current level of exercise, healthy eating, smoking behaviour and perceived barriers\(^{19}\).

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18. Ansari & Lovell, 2009; Eyler et al., 2002; Juarbe et al., 2002; Wilcox et al., 2004, 2005

19. Ball et al., 2000; Osuji et al., 2006; Hall et al., 2003; Thanavaro, 2005; Ussher et al. 2006
Practice implications

- **Current focus of type 2 diabetes education** - glycaemic control, prevention of complications and risk factor modification\(^{20}\)

- **Guidelines suggest**
  - Provision of individualised information and education to promote self-management
  - Use of goal setting to achieve behaviour change to modify risk factors

- **Identification of perceived barriers** which prevent an individual from engaging in healthy lifestyle activities is not explicitly mentioned

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Clinical consultation
- Client focused
- Assessment
- Problem identification
- Goal setting

Clinical management

Self management

Lifestyle risk factor modification

Individual risk factors

Perceived barriers to action

Assess risk factors
- Smoking, nutrition, alcohol, physical activity

Assess barriers
- Personal, social, environmental

Promote healthy lifestyle
- Improve knowledge
- Explore options
- Goal setting
- Follow up/referral

Reduce barriers to action
- Improve awareness
- Explore options
- Goal setting
- Follow up/referral

Lifestyle Risk Factor Modification and Perceived Barriers Model
Limitations

- Small sample size
- Recruitment affected by time constraints
- Homogenous characteristics of sample
- Self report questionnaire – response bias possible
Significance

- This study provides evidence of the level and type of perceived barriers to healthy lifestyle behaviours that midlife and older Australian women with type 2 diabetes experience.

- This evidence can inform health promotion policy and practice for risk factor reduction in type 2 diabetes.

- Study suggests that in policy and practice greater emphasis be placed on identification and goal setting to address perceived barriers.
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- Institute of Health & Biomedical Innovation, QUT
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from worlds apart
from different directions
paths cross
minds merge
new connections are made
thoughts arise
anything can happen
solutions are found
nothing is set in stone