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

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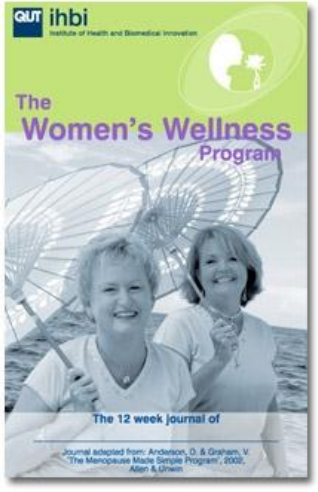
Introduction

- 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:

  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

3. Pender, 1982, 2006 4. Pender, 2006, p. 53






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]

5. Wilcox et al, 2002, 2003, 2005 6. Sawriker, 2010; Caperchione, 2011; Stewart & Do, 2003
7. Barnett, 2007 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]

9. Crane & McSweeney, 2003; Mosca et al, 1998; Perry et al., 2008
10. Crane & McSweeney, 2003; Pierce, 2005; Shin et al., 2006
11. Becker & Stuifbergen, 1991, 1994
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[13]
- Gestational diabetes – postpartum dietary behaviours
  - Confidence and skills in cooking healthy foods, family food preferences, time pressures[14]

13. Abbott et al, 2010

14. Zehle, 2008





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

15. Becker & Stuifbergen 1991, 1989, 2004




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

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





Results – Lifestyle variables

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





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[16] (33.5)
  - Adults with multiple sclerosis (33.54) and post-polio syndrome (33.12)[17]

16. Stuifbergen & Becker, 1994
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]

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

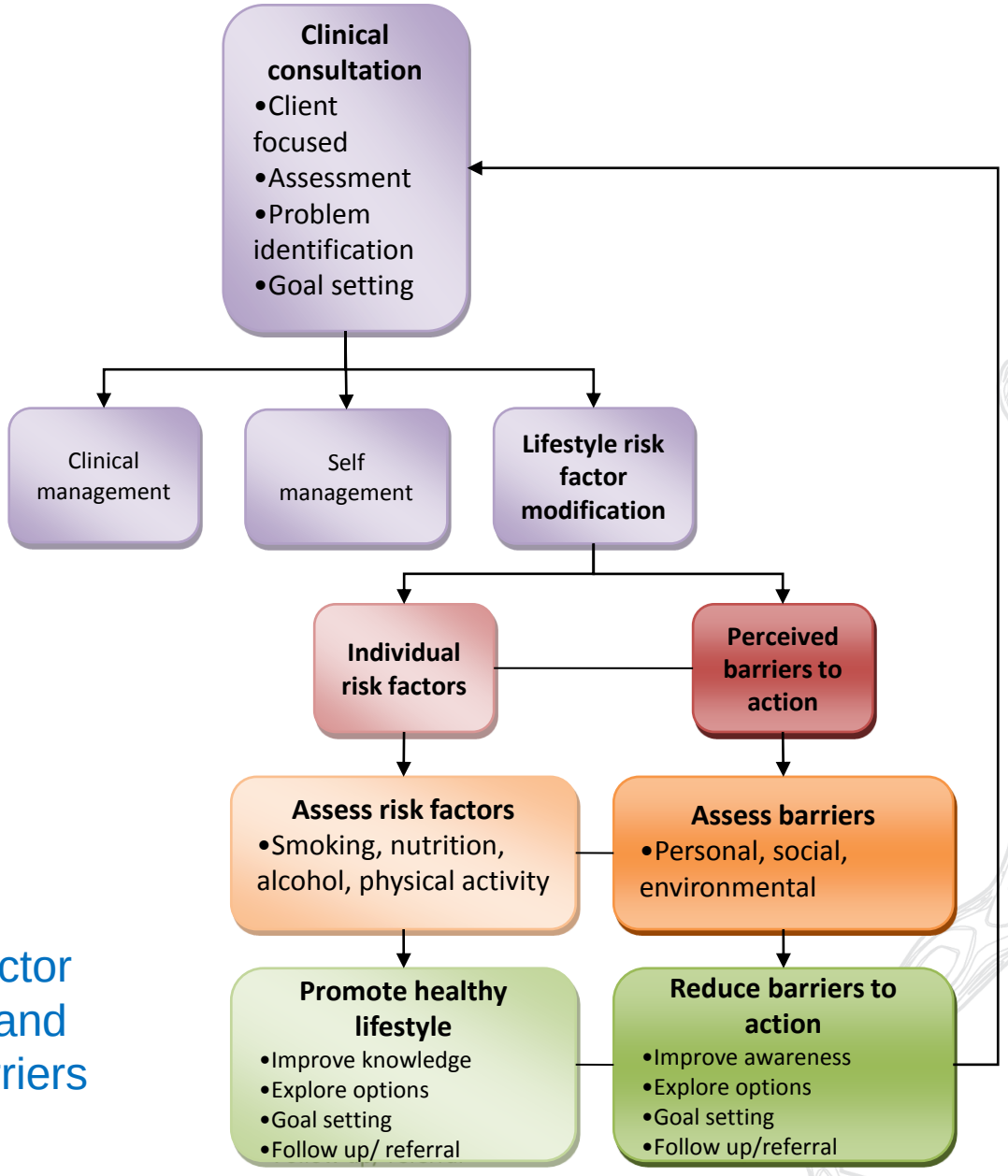
- Current focus of type 2 diabetes education - glycaemic control, prevention of complications and risk factor modification[20]
- Guidelines suggest
  - Provision of individualised information and education to promote self-management
  - Use of goal setting to achieve behaviour change to modify risk factors
- Identification of perceived barriers which prevent an individual from engaging in healthy lifestyle activities is not explicitly mentioned

20. Colagiuri et al., 2009, *National Evidence Based Guideline for Patient Education in Type 2 Diabetes*, Diabetes Australia and the NHMRC, Canberra.





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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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

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