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Guo, M., Courtney, M. and Anderson, D. (2009). Examination of social demographic status, disease status, health behaviours and quality of life in older Australians using the Theory of Planned Behaviour Model. 8th National Conference for Emerging Researchers in Ageing. Rydges on Swanston, Melbourne, Victoria, Australia 22 - 23 Oct 2009. Melbourne, Victoria: Monash University.

Examination of Social Demographic Status, Disease Status, Health Behaviours and Quality of Life in older Australians using the Theory of Planned Behaviour Model

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Abstract

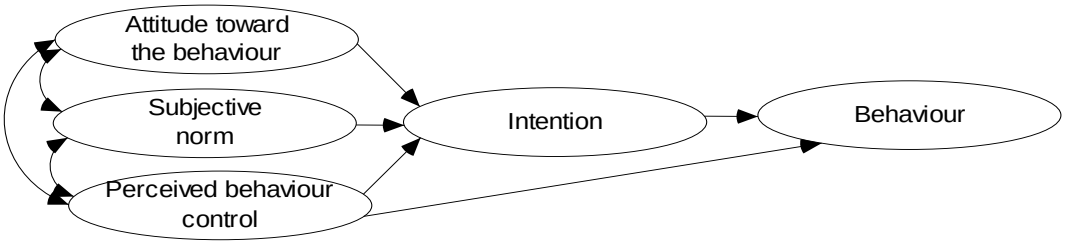
The increase of life expectancy worldwide during the last three decades has increased age-related disability leading to the risk of loss of quality of life. How to improve quality of life including physical health and mental health for older people and optimize their life potential has become an important health issue. This study used the Theory of Planned Behaviour Model to examine factors influencing health behaviours, and the relationship with quality of life. A cross-sectional mailed survey of 1300 Australians over 50 years was conducted at the beginning of 2009, with 730 completed questionnaires returned (response rate 63%). Preliminary analysis reveals that physiological changes of old age, especially increasing waist circumference and co morbidity was closely related to health status, especially worse physical health summary score. Physical activity was the least adherent behaviour among the respondents compared to eating healthy food and taking medication regularly as prescribed. Increasing number of older people living alone with co morbidity of disease may be the barriers that influence their attitude and self control toward physical activity. A multidisciplinary and integrated approach including hospital and non hospital care is required to provide appropriate services and facilities toward older people.

Research Question

Increasing age is related to long term health conditions and higher rates of chronic diseases, which can lead to severe disability, diminished quality of life and greatly increased health care costs. Some studies show disability can be postponed through healthier lifestyles (Dangour, Grundy, & Fletcher, 2007; Hubert, Bloch, Oehlert, & Fries, 2002; Lorig, Stewart, Ritter, Gonzalez, & Laurent, 1996). Theory of Planned Behaviour (TPB) Model (Figure1) has been recognized as a good model for understanding the process of health behaviour change and has been found to be applicable to diverse health behaviours (Ajzen, 1988; Armitage & Conner, 2001; Hwu & Chin-Ching, 2006). According to TPB, perceived behaviour control together with behaviour intention toward an interested behaviour, can be used directly to predict the behavioural achievement. Three conceptually independent determinants of intention include attitude toward the behaviour (positive or negative), subjective norm (social pressure to perform or not perform) and the degree of perceived behaviour control (perceived ease or difficulty). In general, the more favourable the attitude and subjective norm with respect to a behaviour, and the greater the perceived behaviour

control, the stronger individual's intention should be to perform the behaviour under consideration (Ajzen, 1991).

Figure 1. Theory of Planned Behavour Model (Icek Adjen, 1988)



This study aims to investigate factors that influence health behaviours, such as physical activity, healthy eating and medication adherence, and the relationship with quality of life using the Theory of Planned Behaviour Model.

Methods

A cross-sectional mailed survey of 1300 Australians over 50 years was conducted at the beginning of 2009 with totally 730 respondents completing the questionnaire. The total response rate was 63%. The survey included the areas of Theory of Planned Behaviour Model (Ajzen, 2002) including attitude (4 items), social support (3 items), perceived behaviour control (3 items), intention (4 items) and last week's behaviour (1 item) (undertaking physical activities for 30-40 min per day; eating low fat, low sugar, and high fibre food each meal and taking medication regularly as prescribed every day; Quality of Life (MOS SF-36, 36 items) (Ware, Snow, Kosinski, & Gandek, 1993, 2000); The Centre for Epidemiologic Studies Depression (CES-D) Scales (20 items) (Radloff, 1977); Chronic Disease Self-Efficacy Scales (33 items) (Lorig et al., 1996) and social demographic factors (age, gender, income, education, disease status, weight, height, waist circumference, living status). The two component summary scores from the SF-36 scales were the dependent variables including physical health component summary score (PCS) and mental health component summary score (MCS).

Analysis included descriptive statistics of respondents by three age groups and two component summary scores from the SF-36 scales by age groups, gender, waist circumference and disease co morbidity.

Results

A total of 730 cases aged from 52 to 80 years (mean ≈ median, 65 years) responded validly and this data was analysed. There were more females (55.4%) than male respondents. The percentages of respondents in age groups were: <65 years (48.8%), 65-74 years (41.4%) and ≥75 years (9.8%) (Table1). Only 16 percent of the respondents had not completed secondary education and 33.3 percent had tertiary qualifications. Over thirty two percent of respondents had average incomes of less than $30,000. The majority were married (62.2%) and living with spouse or partner. Nearly 28 percent of total respondents lived alone and 38 percent of those living alone were aged over 75 years. Less than 20% of respondents reported having no medical conditions and over 48 percent had at least two diseases. Nearly fifty six percent of

the oldest group had more than one disease. Over 70 percent of the respondents had a BMI over 25. Arthritis and hypertension were the most common diseases among the three age groups (Table 2).

Table 1. *Characteristics of the Respondents*

Variable	Total No. (%) (N=725)	50-64.9 (n=354)	65-75 (n=300)	75-80 (n=71)
Gender (female)	402 (55.4)	207 (58.5)	160 (53.3)	34 (47.9)
BMI ≥25	482 (70.4%)	243 (73.2)	190 (66.7)	49 (72.1)
Waistcircumference (overweight+obese)	574 (79.6%)	278 (79.2)	236 (78.7%)	60 (85.7%)
Disease comorbidity (more than one disease)	347 (48.1)	157 (44.6)	151 (50.3)	39 (55.7)
Education, ≤12y	116 (16.0)	62 (18.5)	40 (13.3)	14 (19.7)
Income,≤ $ 30,000	223 (32.2)	79 (23.3)	115 (40.2)	29 (42.6)
Living alone (yes)	202 (27.9)	79 (22.3)	96 (32.1)	27 (38.0)

Table 2. *Prevalence of Health Conditions among Respondents*

Variable	Total (N=722)	Age Groups		
		50-64.9 (n=352)	65-74.9 (n=300)	75+ (n=70)
Diabetes	80 (11.1)	30	37	13
Heart disease	114 (15.8)	46	53	15
Hypertension	234 (32.4)	101	106	27
Arthritis	309 (42.8)	136	131	42
Asthma	95 (13.2)	51	36	8
Cancer	104 (14.4)	48	44	12
Others	210 (29.1)	112	75	23

Table 3 shows the Physical Health Summary Score (PCS) and Mental Health Summary Score (MCS) across respondents with varying age, BMI, waist circumference status, and number of health problems. There was a wide variation in the physical health summary score, which was clearly related to age, BMI, waist circumference, and number of health problems. With increasing age, number of health problems, BMI and waist circumference, physical functional status was poorer.

Respondents aged over 75 years had relatively worse PCS than the younger groups. There was a statistically significant difference between respondents aged over 75 and those less than 65 years ($p<0.05$). The obese group of people according to criteria of BMI or waist circumference has worse PCS than the overweight and normal weight people. Respondents with normal waist circumference had relatively higher PCS than

over weight or obese people with statistically significant difference ($p<0.05$). Respondents with non disease had significant higher PCS than those with one disease or ≥ two kinds of health problems ($p<0.01$).

For mental health, the respondents aged between 65 and 75 years old had better MCS than the oldest group and the youngest group. Those without disease had better MCS than those with two or more diseases. There was no statistically significant difference in PCS and MCS for males and females.

Table 3. *Age, Gender, Disease co morbidity, Waist Circumference and Quality of life*

		N	PCS	MCS
Observed cases		668	668	668
Mean Score		668	44.8	52.1
Standard deviation		668	9.9	9.9
Age group (years)	50-64.9	326	45.8 (10.1)	50.9 (10.3)
	65-74.9	278	44.4 (9.3)	53.7 (9.0)
	75+	60	40.9 (10.2)	51.5 (10.8)
Gender	Male	302	45.0 (9.3)	51.8 (9.9)
	Female	362	44.6 (10.3)	52.3 (9.9)
Number of Health Problem	None	126	51.7 (6.8)	54.4 (8.0)
	One	218	46.5 (8.7)	52.8 (9.4)
	Two or more	321	40.7 (9.8)	50.9 (10.5)
Waist Circumference	Normal	131	49.0 (8.7)	52.1 (9.6)
	Overweight	183	45.7 (9.5)	53.2 (8.7)
	Obese	347	42.8 (9.9)	51.6 (10.6)

For the three behaviours, 42.2% of the respondents did regular physical activities for 30-40 min/day for five days or over during last week and nearly 75 percent did three days or over during last week. For healthy eating behaviour, there were 59.6% of respondents who ate low fat, low sugar and high fibre food five days or more during last week. For taking medication regularly as prescribed, 81.7 percent of respondents took 7 days medication as prescribed. Thus the large majority of respondents took medication as prescribed everyday.

Discussion and Conclusion

Outcomes of the analysis indicated physiological changes of old age, especially increasing waist circumference and co morbidity, are closely related to health status, especially worse physical health component score. These were consistent with other researcher's findings (Han, Tijhuis, Lean, & Seidell, 1998; Mond & Baune, 2009). Also the number of participants who lived alone with a household income of less than $30,000 increased with age. The number of respondents who have arthritis (mainly osteoarthritis), cardiovascular diseases, diabetes and cancer increased with age.

Arthritis and hypertension are the most common diseases, these were consistent with report from Australian and American (AIHW, 1993,2005; CDC, 2002)

Compared to eating low fat, low sugar and high fiber food each meal and taking medication regularly as prescribed, doing regular physical activities for 30-40 min/day was the least adherent behaviour. According to TPB, factors influencing attitude, social support and perceived behaviour control toward physical activity will indirectly influence intention towards actual behaviour. Increasing number of older people living alone with co morbidity of diseases may be the barriers that influence their attitude, social support and self control toward physical activity. Older people should be informed and encouraged that regular physical activity is appropriate and desirable in old age. A multidisciplinary and integrated approach including hospital and non hospital care is required to provide appropriate services and facilities toward older people.

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