



Chronic Conditions

Cardiovascular Disease

Stage 3

Epidemiological Series Report # 2011 - 03

December 2011



Introduction

The following overview presents information about cardiovascular disease (CVD) among the participants of the North West Adelaide Health Study, and the demographics, chronic conditions and risk factors associated with CVD. Stage 1 of the study was conducted between 2000 and 2003, with Stage 2 conducted from 2004 to 2006 and Stage 3 conducted from 2008 to 2010.

Measurement and definition of cardiovascular disease

The proportion of participants with CVD was based on data obtained from the telephone interview. Participants were asked if they had been told by a doctor that they had ever had a heart attack, a stroke or angina.

Proportion of those with cardiovascular disease – Stage 1, Stage 2 & Stage 3

The proportion of participants with cardiovascular disease for Stages 1, 2 and 3 is shown in Table 1. Overall, in Stage 1, **6.1%** (95% CI 5.4-6.9), in Stage 2, **5.7%** (95% CI 5.0-6.5) and in Stage 3, **5.5%** (95% CI 4.1-5.8) of study participants reported that they had cardiovascular disease.

Table 1: Proportion of those with cardiovascular disease

	Stage 1		Stage 2		Stage 3	
	n	%	n	%	n	%
No CVD	3803	93.9	3294	94.3	2560	94.5
CVD	249	6.1	198	5.7	148	5.5
Total	4052	100.0	3492	100.0	2709	100.0

* Note: The weighting of data can result in rounding discrepancies or totals not adding.

Explanation of statistical terms used in this report

Incident rate is a measure of risk of developing a condition or risk factor within a specified period of time, often one year but in this report per 1000 person years. This allows for different amounts of observation times among participants between the baseline and Stage 3 results (ranging from 2000-2003 to 2008-2010). The incident rates were calculated without adjusting for age in this report. *For example, in a population of 1000 people, if 28 people develop a disease over two years, this would be expressed as 14 incident cases over 1000 person years (28 cases per 1000 divided by 2 years).*

Hazard ratio (HR) is the ratio of the hazard rates corresponding to a chronic condition or risk factor developing in the different groups over time – in this case, the time since the baseline examination (between 2000 and 2003). This allows for different amounts of observation times among participants between the baseline and Stage 3 results (ranging from 2000-2003 to 2008-2010). *For example, looking at cardiovascular disease, a hazard ratio of 2 for overweight or obese people implies that twice as many people with this risk factor have developed cardiovascular disease in this time compared to the reference group (those who are underweight or who have a healthy weight with a hazard ratio of 1).*

Adjusting for age is a technique used to better allow populations to be compared when the age profiles of the populations are quite different.

Tables 2 and 3 present the incidence rate per 1000 person years and the hazard ratios among those participants who did not report having cardiovascular disease at baseline Stage 1 (108 incident cases).

Demographic profile of those with cardiovascular disease

The risk of developing cardiovascular disease among study participants without CVD at baseline was statistically significantly higher among those over 50 years of age, and significantly lower among females or those who were part-time/casual employed, undertaking home duties or retired (Table 2).

Table 2: Incident rate and hazard ratios for demographic variables associated with cardiovascular disease

Variable	n	New Cases (N) [†]	Incidence rate (1000 person yrs) [†]	HR (95%CI)**	p value**
Sex					
Male	1516	73	7.2	1	
Female	1595	35	3.2	0.37 (0.25-0.55)	<0.001
Age group					
Up to 49 years	1906	24	1.9	1	
50 to 59 years	508	24	6.5	3.67 (1.99-6.77)	<0.001
60 years and over	697	60	13.4	7.32 (4.29-12.50)	<0.001
Highest education level obtained*					
Secondary	1315	52	5.9	1	
Trade/apprenticeship/cert/diploma	1283	46	5.2	1.02 (0.68-1.53)	0.932
Bachelor degree or higher	386	7	3.0	0.84 (0.36-0.93)	0.678
Gross annual household income*					
Up to \$20,000	628	40	9.6	1	
\$20,001- 40,000	775	30	5.6	1.24 (0.78-1.97)	0.367
\$40,001- 60,000	724	15	3.1	0.97 (0.48-1.98)	0.973
More than \$60,000	823	14	2.6	0.96 (0.46-1.99)	0.908
Family structure*					
Family & children, two biological/ adoptive parents	1063	13	1.8	1	
Adult living with partner, no children	792	47	8.4	1.85 (0.88-3.93)	0.107
Adult living alone	382	27	10.7	1.65 (0.71-3.82)	0.246
Adults – related/unrelated, living together	288	10	5.6	1.67 (0.66-4.20)	0.279
Step/sole/shared parenting & other	291	7	3.4	1.71 (0.57-5.14)	0.340
Marital status*					
Married or living with partner	2052	74	5.2	1	
Separated/divorced	252	14	8.2	1.63 (0.98-2.71)	0.060
Widowed	166	13	12.1	0.72 (0.42-1.24)	0.234
Never married	625	7	1.8	1.25 (0.53-2.91)	0.612
Work status*					
Full time employed	1269	36	4.1	1	
Part time/casual employed	537	8	2.2	0.48 (0.24-0.99)	0.045
Unemployed	120	1	#	#	#
Home duties/retired	918	59	9.8	0.51 (0.29-0.89)	0.019
Student/other	229	3	#	#	#

* Don't know/ refused/ not stated category not reported

** All variables adjusted for age (except for age group) to calculate hazard ratio

† Not adjusted for age

Insufficient new cases (N<5) for statistical analysis

Chronic condition and risk factor profile of those with cardiovascular disease

The risk of developing cardiovascular disease among study participants without CVD at baseline was statistically significantly higher among those who had diabetes, those who were current smokers or obese, or those with high blood pressure, and significantly lower among those who had a low alcohol risk, than those without these risk factors (Table 3).

Table 3: Incident rate and hazard ratios for chronic conditions and risk factors associated with cardiovascular disease

Variable	n	New Cases (N) [†]	Incidence rate (1000 person yrs) [†]	HR (95%CI) ^{**}	p value ^{**}
Diabetes					
No	2932	90	4.5	1	
Yes	178	17	15.3	1.98 (1.21-3.22)	0.007
Current mental health condition					
No	2705	98	5.4	1	
Yes	390	9	3.5	0.72 (0.40-1.29)	0.272
Smoking*					
Non-smoker	1481	43	4.3	1	
Ex-smoker	911	42	6.8	1.49 (0.98-2.29)	0.065
Current smoker	706	22	4.6	2.11 (1.21-3.69)	0.008
Alcohol risk					
Non-drinker/ No risk	1617	79	7.4	1	
Low Risk	1274	25	2.8	0.44 (0.28-0.71)	0.001
Intermediate to High Risk	201	3	#	#	#
Physical activity					
Sedentary	810	33	6.1	1	
Undertakes some exercise	2055	62	4.5	0.75 (0.49-1.16)	0.191
BMI[^]					
Underweight/Normal (under 25)	1110	20	2.6	1	
Overweight (25 to 29.9)	1158	48	6.2	1.61 (0.94-2.75)	0.083
Obese (30 and over)	839	40	7.0	2.08 (1.23-3.51)	0.006
High waist circumference (≥95cm men, ≥80cm women)[^]					
No	1375	24	2.6	1	
Yes	1735	83	7.1	1.58 (0.97-2.57)	0.066
High blood pressure (≥140/90mmHg)[^]					
No	2226	42	2.7	1	
Yes	885	66	11.2	1.98 (1.21-3.24)	0.007
High total cholesterol (≥5.5mmol/L)[^]					
No	1901	57	4.5	1	
Yes	1171	50	6.2	1.05 (0.70-1.55)	0.821

* Don't know/ refused/ not stated category not reported

** All variables adjusted for age (except for age group) to calculate hazard ratio

† Not adjusted for age

Insufficient new cases (N<5) for statistical analysis

[^] Biomedical measurement

This document is one of a series of reports concerning Stage 3 of the North West Adelaide Health Study. Please see the website for other reports in the series - www.health.adelaide.edu.au/pros/data/nwahs/.

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