



Chronic Conditions

Chronic Obstructive Pulmonary Disease (COPD)

Stage 2

Epidemiological Series Report # 2007-02

April 2007

Introduction

The following overview presents the prevalence and incidence of chronic obstructive pulmonary disease (COPD), including bronchitis and emphysema, among the participants of the North West Adelaide Health Study. In addition, the demographic and risk factors associated with COPD are presented. Stage 1 (baseline examination) was conducted between 2000 and 2003, and Stage 2 (second examination) was conducted from 2004 to 2006.

Measurement and definition of COPD

COPD was measured by spirometry according to the American Thoracic Society standards. People with COPD, based on the GOLD (Global Initiative for Obstructive Lung Disease) definition, were defined as those with a post bronchodilator FEV₁:FVC ratio of less than 70%¹.

Incidence of COPD

The annual incidence of COPD between Stage 1 and Stage 2 was 6.1 incident cases per 1000 in the adult population.

Prevalence of COPD – Stage 1 & Stage 2

The prevalence of undiagnosed COPD in Stage 2 (COPD defined by spirometry tests without self-reported doctor diagnosed COPD) was 3.4% (95% CI 2.8-4.1). The prevalence of diagnosed COPD (COPD defined by spirometry tests and self-reported doctor diagnosed COPD) was 1.4% (95% CI 1.0-1.9). The overall prevalence of COPD (diagnosed and undiagnosed) for both Stage 1 and Stage 2 is shown in Table 1. Overall, in Stage 1 **3.9%** (95% CI 3.3-4.5) and in Stage 2 **4.8%** (95% CI 4.1-5.6) of study participants had COPD.

Table 1: Prevalence of COPD

	Stage 1		Stage 2	
	n	%	n	%
No COPD	3861	96.1	3000	95.2
COPD	156	3.9	150	4.8
Total	4017*	100.0	3149*	100.0

* Note: (Stage 1) 43 participants and (Stage 2) 57 participants had insufficient FEV1 or FVC results and were excluded.

Transition to and from COPD

Overall, 1.9% (95% CI 1.5-2.5) of respondents went from having no COPD to COPD in Stage 2 and 2.8% (95% CI 2.3-3.4) had COPD in Stage 1 and Stage 2 (Table 2).

Table 2: Transition to and from COPD

Stage 1	Stage 2	n	%
No COPD	No COPD	2960	94.6
No COPD	COPD	60	1.9
COPD	COPD	88	2.8
COPD	No COPD	20	0.6
Total		3128	100.0

Some respondents that went from COPD to no COPD, or from no COPD to COPD, typically just qualified as having COPD, and could be added to the no COPD/no COPD group.

¹ Pauwels RA, Buist AS et al.. Global strategy for the diagnosis, management and prevention of chronic obstructive pulmonary disease. NHLBI/WHO Global Initiative for Chronic Obstructive Lung Disease (GOLD) Workshop Summary. *Am J Respir Crit Care Med* 2001; 163: 1256-1276.

The prevalence of COPD did not significantly increase between Stage 1 and Stage 2.

Overall, 1.9% developed COPD between Stage 1 and Stage 2.

Demographic profile of people with COPD

The prevalence of COPD was statistically significantly higher among those aged 50 years and over, adults living with a partner without children, adults living alone, or unrelated adults living together, widowed, or retired or undertaking home duties. The prevalence was statistically significantly lower among females, those never married, or those who had an education level of degree or higher and an income greater than \$40,000 (Table 3).

Table 3: Univariate Odds Ratios for demographic variables associated with COPD

Variable	n	%	OR	(95% CI)	p value
Sex					
Male	102/1558	6.5	1.00		
Female	48/1591	3.0	0.44	(0.31-0.63)	<0.001
Age group					
20 to 49 years	20/1831	1.1	1.00		
50 to 59 years	24/534	4.5	4.36	(2.39-7.98)	<0.001
60 years and over	106/785	13.5	14.37	(8.81-23.44)	<0.001
Highest education level obtained*					
Secondary	81/1388	5.9	1.00		
Trade/apprenticeship/cert/diploma	59/1154	5.1	0.87	(0.61-1.22)	0.42
Bachelor degree or higher	7/536	1.2	0.20	(0.09-0.44)	<0.001
Gross annual household income*					
Up to \$20,000	44/586	7.5	1.00		
\$20,001- 40,000	63/714	8.8	1.18	(0.79-1.77)	0.41
\$40,001- 60,000	17/680	2.5	0.32	(0.18-0.56)	<0.001
More than \$60,000	15/1024	1.5	0.19	(0.10-0.34)	<0.001
Family structure*					
Family & children, 2 biol/adop parents	22/1180	1.9	1.00		
Adult living with partner, no children	65/830	7.8	4.42	(2.70-7.21)	<0.001
Adult living alone	37/416	8.9	5.08	(2.97-8.71)	<0.001
Adults – reltd/unreltd, living together	16/331	4.9	2.66	(1.39-5.12)	0.003
Step/sole/shared parenting & other	7/330	2.1	1.10	(0.46-2.61)	0.84
Marital status*					
Married or living with partner	99/2087	4.7	1.00		
Separated/divorced	17/267	6.3	1.35	(0.79-2.30)	0.27
Widowed	22/203	10.8	2.44	(1.50-3.96)	<0.001
Never married	10/560	1.8	0.38	(0.20-0.72)	0.003
Work status*					
Full time employed	28/1418	2.0	1.00		
Part time/casual employed	15/521	2.8	1.45	0.77-2.75	0.25
Unemployed	1/76	1.2	0.61	0.07-4.95	0.64
Home duties/retired	100/952	10.5	5.84	3.80-8.95	<0.001
Student/other	4/149	2.7	1.38	0.48-3.97	0.55

*Not stated category not reported

Those who were:

- male;
- in older age groups;
- adults living in a household without children;
- widowed;
- retired or undertaking home duties

were more likely to have COPD.

COPD was significantly more likely among those who were ex, moderate or heavy smokers.

Self-reported risk factor profile of people with and without COPD

The prevalence of COPD was statistically significantly higher among those who were moderate, heavy or ex-smokers (Table 4).

Table 4: Univariate Odds Ratios for self-reported risk factor variables associated with COPD

Variable	n	%	OR	(95% CI)	p value
Smoking*					
Non-smoker	32/1432	2.3	1.00		
Ex-smoker	82/1070	7.7	3.61	(2.38-5.47)	<0.001
Light smoker	13/307	4.2	1.89	(0.98-3.66)	0.06
Moderate smoker	11/184	5.8	2.66	(1.31-5.41)	0.007
Heavy smoker	11/100	10.8	5.25	(2.55-10.79)	<0.001

*Not stated category not reported

Measured risk factor profile of people with and without COPD

The prevalence of COPD was statistically significantly higher among those with a high waist hip ratio (Table 5).

Table 5: Univariate Odds Ratios for measured risk factor variables associated with COPD

Variable	n	%	OR	(95% CI)	p value
BMI					
Underweight/normal	53/1044	5.1	1.00		
Overweight	64/1182	5.4	1.07	(0.73-1.55)	0.74
Obese	33/916	3.6	0.70	(0.33-1.08)	0.11
Waist/hip ratio (>1.0 men, >0.85 women)					
No	98/2396	4.1	1.00		
Yes	51/721	7.0	1.77	(1.25-2.51)	0.001
High blood pressure (≥140/90mmHg)					
No	87/2317	3.8	1.00		
Yes	62/802	7.7	2.12	(1.52-2.93)	<0.001
High total cholesterol (≥5.5mmol/L)					
No	92/1857	5.0	1.00		
Yes	56/1271	4.4	0.86	(0.63-1.24)	0.48

Quality of life profile of people with COPD

The mean scores of the SF-36 subscales showed that people with COPD scored statistically significantly lower on Physical Functioning, Role Physical, General Health, Vitality and Social Functioning domains than people without COPD.

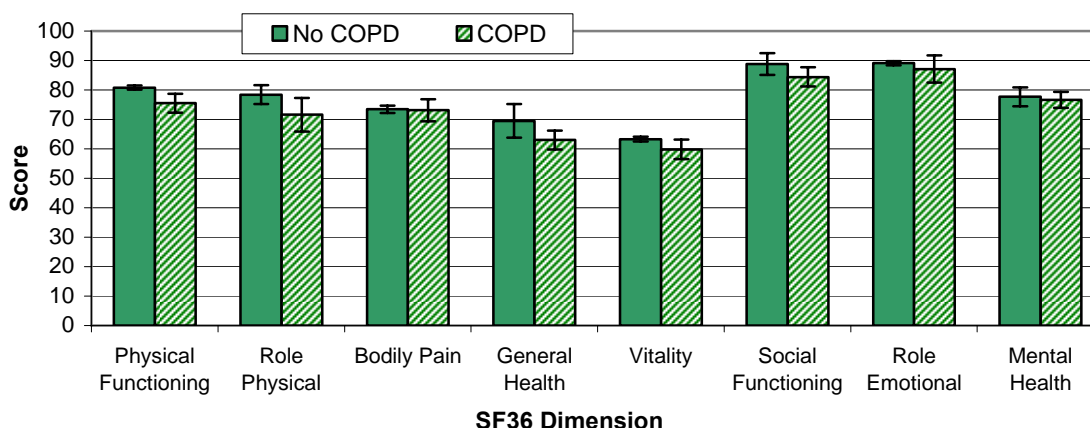


Figure 1: SF-36 mean scores for people who did and did not have COPD

This document is one of a series of reports concerning Stage 2 of the North West Adelaide Health Study. Please see website for other reports in the series - www.health.sa.gov.au/pros/

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COPD was significantly more likely among those with a high waist to hip ratio and high blood pressure.

People with COPD have significantly lower quality of life scores on several areas of the SF-36.