Population surveillance in North West Adelaide: The impact of diagnosed and undiagnosed chronic obstructive pulmonary disease (COPD) on quality of life

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INTRODUCTION

The North West Adelaide Health Study is a representative population cohort of adults living in the north western region of Adelaide, the capital of South Australia, designed to examine the prevalence of chronic conditions, including COPD. The effect of different stages of COPD (no COPD, undiagnosed COPD, and diagnosed COPD) on quality of life was assessed using the SF-36. The SF-36 is a generic measure of quality of life useful for comparing population groups.

METHODS

Data were obtained from the North West Adelaide Health Study (n=4060), a representative cohort study. All households within this region with a telephone connected and the telephone number listed in the Electronic White Pages were eligible for random selection. Within each household, the person who had their birthday last and was aged 18 years or older, was selected for interview and invited to attend the Study clinic for biomedical measurements to be taken. Of those interviewed, 69% participated in the clinic visit. Data was obtained from self-reported questionnaires and biomedical measurements.

People with COPD were defined as those with an FEV1:FVC ratio less than the result of the formula $(87.21–(0.18*age)*0.882)$ for males, and $(89.10–(0.19*age)*0.893)$ for females. Participants with undiagnosed COPD were those who had the condition according to the above criteria as measured at the Study clinic, but who did not report having been told by a doctor that they had COPD. The 36 items of the SF-36 were scored into 8 dimensions: Physical Functioning (PF), Role Physical (RP), Bodily Pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Emotional (RE) and Mental Health (MH).

RESULTS

The prevalence of diagnosed COPD was 0.7% (95% CI 0.5–1.0), and an additional 2.8% (95% CI 2.3–3.3) were undiagnosed. Table 1 shows the ratio of diagnosed to previously undiagnosed COPD.

Table 1. Ratio of diagnosed COPD to previously undiagnosed COPD.

	%	% of COPD	Ratio
Diagnosed COPD	0.7	20.0	1.0
Previously undiagnosed COPD	2.8	80.0	4.0
No COPD	96.5		
Total	**100.0**		

There were no significant differences in prevalence of stage of the COPD continuum between males and females. However, as stage of progression moved towards diagnosed disease, age also increased. Those without COPD were significantly younger (mean age 44 years) than those with undiagnosed COPD (mean age 55 years), who in turn were significantly younger than those with diagnosed COPD (mean age 68 years). Figure 1 shows the mean SF-36 scores for those without COPD, undiagnosed COPD, and diagnosed COPD, controlling for age and sex.
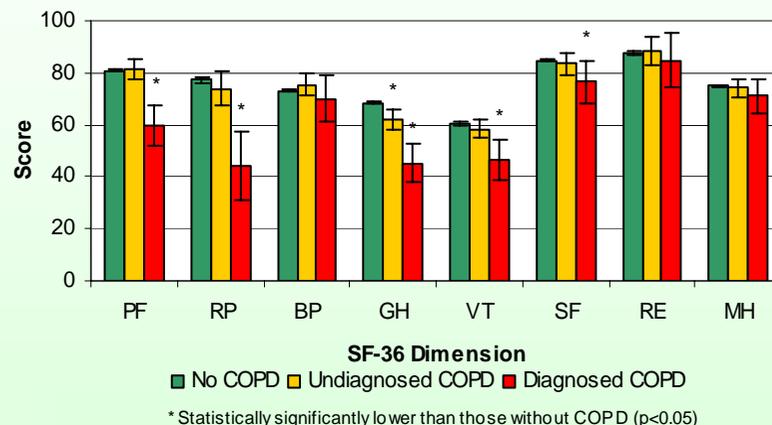

* Statistically significantly lower than those without COPD (p<0.05)

Figure 1. Mean SF-36 scores for those without COPD, undiagnosed COPD, and diagnosed COPD.

Compared to those without COPD, those with undiagnosed COPD scored significantly lower on the Physical Functioning, Role Physical, and General Health dimensions of the SF-36. Those with diagnosed COPD scored significantly lower on all dimensions except Role Emotional and Mental Health. When controlling for age and sex, those with undiagnosed COPD scored significantly lower on the General Health subscale, and those with diagnosed COPD scored significantly lower on the Physical Functioning, Role Physical, General Health, Vitality, and Social Functioning dimensions compared to those without COPD.

CONCLUSIONS

COPD, even in the undiagnosed state, has a significant effect on quality of life. This effect is in part moderated by age. These findings provide support for early identification of airflow limitation and COPD.