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INTRODUCTION

The North West Adelaide Health Study (NWAHS) is a biomedical cohort study in the northwest suburbs of Adelaide, South Australia. It is recognised that people diagnosed with chronic obstructive pulmonary disease (COPD) are limited in their exercise capacity. The study provides an understanding of the population with and without a diagnosis of COPD using the NWAHS data collected by questionnaire and clinical assessment.

METHODS

The North West Adelaide Health Study (NWAHS) is a representative population sample with all households within the region, with a telephone connected and the telephone number listed in the Electronic White Pages, eligible for 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 clinic. Of those who were interviewed, n=4060 attended the clinic, resulting in a clinic participation rate of 69%.

Respondents to a self completed questionnaire provided information relating to the amount of walking, moderate level or vigorous level exercise over the past two weeks. Activity level was based on a score derived from the number of times activity was undertaken multiplied by the average time and intensity per session and classified into sedentary, low level, moderate level or high level of exercise. COPD was defined as an FEV1:FVC ratio less than the result of the formula $(87.21 - (0.18 * \text{age}) * 0.882)$ for males, and $(89.10 - (0.19 * \text{age}) * 0.893)$ for females. Those with undiagnosed COPD had COPD according to spirometry but did not report previous doctor diagnosis.

RESULTS

The overall prevalence of COPD was 3.5% (95% CI 2.9-4.1). The prevalence of diagnosed COPD was 0.7% (95% CI 0.5-1.0), and 2.8% (95% CI 2.3-3.3) were classified as undiagnosed. Overall, 28.1% (95% CI 26.7-29.6) of respondents were classified as sedentary and 71.9% (95% 70.4-73.4) undertook some level of exercise (low, moderate or vigorous). Table 1 shows the proportion of respondents with and without COPD undertaking exercise. Participants classified as having COPD (diagnosed or undiagnosed) were significantly more likely to be sedentary and less likely to undertake exercise than those without COPD. Figure 1 shows that those with undiagnosed COPD were significantly less likely to have walked in the past two weeks than those without COPD. There were no significant differences between COPD categories for moderate to vigorous exercise. Respondents with undiagnosed COPD were also significantly more likely to be sedentary or undertake a low level of exercise when comparing across all exercise categories (sedentary, low, moderate, high).

Table 1. Proportion within each activity category for respondents with and without COPD

| | COPD | No COPD |
|--|--------------|--------------|
| Sedentary | 44.8 ↑ | 27.6 ↓ |
| Undertakes some level of exercise (low/med/high) | 55.2 ↓ | 72.4 ↑ |
| Total | 100.0 | 100.0 |

↑ ↓ Statistically significant higher or lower (p<0.05) within exercise categories.

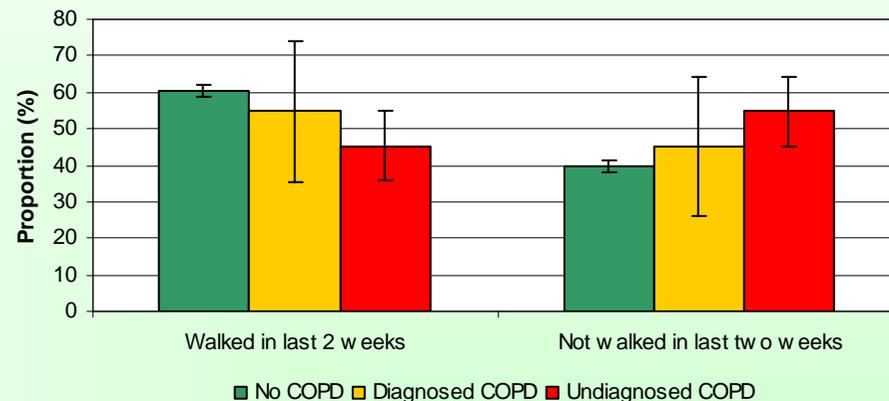


Figure 1. Prevalence of walking for no COPD, diagnosed and undiagnosed COPD

CONCLUSIONS

COPD has a significant effect on exercise level, with those with COPD significantly more likely to be sedentary. People with undiagnosed COPD in particular are also more likely to be sedentary or to have not walked within the past two weeks, indicating the influence that the undiagnosed condition may have in terms of reduced exercise capacity. Early identification will enable action to be taken to improve exercise tolerance which in turn may impact on disease progression.