

Online supplement to

Productivity losses in chronic obstructive pulmonary disease – a population-based survey.

Running head: Productivity losses in COPD.

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EconCOPD study population

The EconCOPD study population consisted of ever-smokers (defined as at least 2.5 pack years of smoking) that were at least 40 years old. There were three groups of participants – population based COPD-cases, population based participants without COPD (controls) and hospital-recruited COPD cases. COPD was defined as a ratio of post-bronchodilator forced expiratory volume in one second (FEV1) to forced vital capacity (FVC) of less than 0.7, as well as FEV1 less than 80% of predicted. Participants were recruited from two different sources.

Subjects without COPD (controls) were recruited from the 2003-2004 follow-up of the Hordaland County Respiratory Health Survey (HCRHS) (1). HCRHS is a population-based cohort study which first was examined in 1985 (2). For the EconCOPD main study we selected 149 control subjects from the HCRHS by randomisation. Of these, 132 completed the one-year follow-up, and 107 were between 40 and 67 years of age (3). Also from the 2003-2004 HCRHS follow-up, we invited all subjects that had post-bronchodilator COPD with a forced expiratory volume in one second (FEV1) less than 80% of predicted. COPD was defined according to the global initiative of obstructive lung disease (GOLD).

Patients with COPD were also recruited from the hospital registers of Haukeland University Hospital. Potential COPD patients were identified by discharge diagnoses and screened by spirometry in a study parallel to the HCRHS in 2003-2004 (1). For EconCOPD 500 patients with post-bronchodilator COPD were randomly selected, and 312 of these received an invitation to participate. Of the 256 included COPD patients

from the hospital register, 205 completed the one-year follow-up, and of these 102 were between 40 and 67 years of age.

References

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E-table 1: Prevalence of self-reported comorbid conditions and respiratory symptoms in hospital-recruited COPD cases and population-recruited COPD cases and copntrols.

	Hospital-recruited COPD cases	Population-recruited COPD cases	Population-recruited controls
N	102	53	107
Hypertension, N (%)	20 (20%)	14 (26%)	20 (19%)
Myocardial infarction, N (%)	9 (9%)	2 (4%)	1 (1%)
Heart failure, N (%)	5 (5%)	1 (2%)	0
Diabetes, N (%)	6 (6%)	1 (2%)	4 (4%)
Depression, N (%)	11 (11%)	4 (8%)	3 (3%)
Chronic cough, N (%)	56 (55%)	20 (38%)	9 (8%)
Dyspnea, 2 flights of stairs, N (%)	75 (74%)	23 (43%)	13 (12%)
Dyspnea walking on level ground	46 (45%)	6 (11%)	0
Attacks of dyspnea	65 (63%)	17 (32%)	7 (6%)

COPD – chronic obstructive pulmonary disease, here defined by FEV₁/FVC<0.7 post-bronchodilation & FEV₁<80% of predicted values.

E-table 2: Regression coefficients for annual days of lost productivity in a general population and in a hospital population, showing the effect of including FEV1 in percent predicted. Quantile median regression.

Covariate	Coefficient (95% CI). Population-recruited COPD cases and controls (N=160).	Coefficient (95% CI). Hospital recruited COPD patients and population-recruited controls (N=209).
COPD status		
No COPD	Ref	Ref
COPD, FEV1 < 80% of predicted	-1.74 (-11.7 to 8.2)	284.3 (267.4 to 301.2)
FEV1 % predicted, 10% increase	-3.3 (-6.0 to -0.6)	-8.0 (-10.9 to -5.0)
Sex		
Male	Ref	Ref
Female	12.3 (7.0 to 17.6)	11.4 (3.4 to 19.4)
Age, pr year	0.25 (-0.2 to 0.7)	0.73 (0.04 to 1.4)
Smoking habit		
Current smoker	Ref	Ref
Ex-smoker	-2.3 (-8.0 to 3.4)	-1.5 (-10.1 to 7.1)
Education		
University	Ref	Ref
Secondary	2.4 (-3.8 to 8.7)	7.0 (-3.2 to 17.2)
Primary	5.25 (-2.1 to 12.6)	18.2 (6.3 to 30.0)
Constant	18.40 (-13.8 to 50.6)	35.1 (-8.5 to 78.6)

95% CI – 95% confidence interval. FEV₁ – forced expiratory volume in 1 second. COPD – chronic obstructive pulmonary disease, here defined by FEV₁/FVC < 0.7 post-bronchodilation & FEV₁ < 80% of predicted values.

E-table 3: Regression coefficients for annual days of lost productivity in a general population and in a hospital population, with adjustments for FEV₁ in percent predicted as well as comorbidities and exacerbations of respiratory symptoms. Quantile median regression.

Covariate	Coefficient (95% CI). Population-recruited COPD cases and controls (N=160).	Coefficient (95% CI). Hospital recruited COPD patients and population-recruited controls (N=209).
COPD status		
No COPD		
COPD, FEV ₁ < 80% of predicted	-8.1 (-18.6 to 2.3)	204.47 (165.86 to 243.09)
FEV ₁ % predicted, 10% increase	-4.40 (-7.26 to -1.55)	-16.70 (-23.33 to -10.07)
Per added comorbidity	3.48 (0.50 to 6.45)	14.78 (8.11 to 21.45)
Per added exacerbation of respiratory symptoms	6.46 (6.04 to 6.88)	-1.28 (-3.17 to 0.61)
Sex		
Male		
Female	10.98 (5.41 to 16.55)	15.44 (-2.84 to 33.71)
Age, pr year	0.01 (-0.44 to 0.46)	1.05 (-0.48 to 2.58)
Smoking habit		
Current smoker		
Ex-smoker	-0.79 (-6.68 to 5.11)	-6.50 (-25.53 to 12.54)
Education		
University	Ref	Ref
Secondary	3.84 (-2.75 to 10.43)	5.43 (-17.99 to 28.86)
Primary	6.84 (-0.83 to 14.51)	18.99 (-7.15 to 45.14)
Constant	35.97 (1.63 to 70.31)	99.09 (-0.57 to 198.74)

95% CI – 95% confidence interval. FEV₁ – forced expiratory volume in 1 second. COPD – chronic obstructive pulmonary disease, here defined by FEV₁/FVC<0.7 post-bronchodilation & FEV₁<80% of predicted values.