

## Applied Clinical Research/Implementation Science

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### The silent economic impact of chronic lung diseases in low-resource settings in Africa, Asia and Europe – a FRESH AIR study

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#### Applied Clinical Research/Implementation Science Results Abstract

**Aim:** Data on the socioeconomic impact of COPD/asthma are key to raising awareness and informing national action plans. These data are largely lacking for low-resource settings such as Uganda, Vietnam, Kyrgyzstan and rural Greece. Indirect costs, such as the impact of COPD/asthma on work productivity, are particularly unknown. We aimed to estimate the work productivity and activity impairment due to COPD/asthma in diverse lower-resource settings, and to identify predictors for a higher impairment.

**Method:** This cross-sectional, observational study is part of the FRESH AIR study. In Uganda (N=102), Vietnam (N=491), Kyrgyzstan (N=308), and rural Greece (N=100), we administered questionnaires to representative samples of patients with spirometry-confirmed COPD and/or asthma. Impairment was assessed using the validated work productivity and activity impairment (WPAI) questionnaire. We performed descriptive statistics and employed a multivariable logistic regression to identify predictors for the impairment. Predictors included demographics, disease severity (MRC breathlessness scale) and comorbidities.

**Results:** A total of 1001 patients were included, 47.8% was male, with a mean age of 59.4 (SD 24.5), and 36.9% was classified as working. 42.3% had COPD, 48.5% asthma, and the rest had both. Workers reported a median [IQR] of 0.0% [0.0-27.7] work time missed, 20.0% [0.0-40.0] productivity impairment while working, and an overall work impairment of 30% [0.0-60.0] due to asthma/COPD in the past seven days. The total group reported 40.0% [20.0-60.0] impairment on other activities. Disease severity (MRC) was a strong predictor for a higher activity impairment (OR 2.2; 95%CI 1.9-2.6), whereas age, gender, and the presence comorbidities were insignificant in the multivariable model.

**Conclusion:** Although in these low-resource settings generally not much work time is missed due to COPD/asthma, the disease-related productivity and activity impairment is substantial. Awareness of the extent of the problem and (un)associated factors could inform public health policies and ultimately serve national COPD/asthma strategies.

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#### References and Clinical Trial Registry Information

This study is registered under trial registration number: NTR5759.  
<http://www.trialregister.nl/trialreg/admin/rctsearch.asp?Term=23332>