# Ambient air pollution and cardiorespiratory outcomes amongst adults residing in four informal settlements in the western province of South Africa

**JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**

**ID** 4646533
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**Year** 2021
**Title** Ambient air pollution and cardiorespiratory outcomes amongst adults residing in four informal settlements in the western province of South Africa
**Journal** Int J Environ Res Public Health
**Volume** 18
**Number** 24
**Pages** / **Article-Number** 13306
**Keywords** Adult; *Air Pollutants/analysis/toxicity; *Air Pollution/analysis/statistics & numerical data; Cross-Sectional Studies; Environmental Exposure/statistics & numerical data; Female; Humans; Nitrogen Dioxide/analysis; Nutrition Surveys; Particulate Matter/analysis/toxicity; South Africa/epidemiology; *adults; *ambient air pollution; *cardiorespiratory outcomes; *chest pain; *informal settlements; *particulate matter
**Mesh terms** Adult; Air Pollutants, toxicity; Air Pollution, statistics & numerical data; Cross-Sectional Studies; Environmental Exposure, statistics & numerical data; Female; Humans; Nitrogen Dioxide, analysis; Nutrition Surveys; Particulate Matter, toxicity; South Africa, epidemiology
Few studies have investigated the relationship between ambient air pollution and cardiorespiratory outcomes in Africa. A cross-sectional study comprising of 572 adults from four informal settlements in the Western Cape, South Africa was conducted. Participants completed a questionnaire adapted from the European Community Respiratory Health Survey, and the National Health and Nutrition Examination Survey questionnaire. Exposure estimates were previously modelled using Land-Use Regression for Particulate Matter (PM2.5) and Nitrogen Dioxide (NO2) at participants' homes. The median age of the participants was 40.7 years, and 88.5% were female. The median annual NO2 level was 19.7 microg/m(3) (interquartile range [IQR: 9.6-23.7]) and the median annual PM2.5 level was 9.7 microg/m(3) (IQR: 7.3-12.4). Logistic regression analysis was used to assess associations between outcome variables and air pollutants. An interquartile range increase of 5.12 microg/m(3) in PM2.5 was significantly associated with an increased prevalence of self-reported chest-pain, [Odds ratio: 1.38 (95% CI: 1.06-1.80)], adjusting for NO2, and other covariates. The study found preliminary circumstantial evidence of an association between annual ambient PM2.5 exposure and self-reported chest-pain (a crude proxy of angina-related pain), even at levels below the South African National Ambient Air Quality Standards.
**ISSN/ISBN** 1660-4601 (Electronic)1660-4601 (Linking)
**URL** https://doi.org/10.3390/ijerph182413306
**edoc-URL** https://edoc.unibas.ch/88897/
**Full Text on edoc** Available;
**Digital Object Identifier DOI** 10.3390/ijerph182413306
**PubMed ID** http://www.ncbi.nlm.nih.gov/pubmed/34948913
**ISI-Number** WOS:000738590900001

**Document type (ISI)** Journal Article