Table S1. Tabular summary of studies that met the inclusion criteria.

Title and author	Year	Country	Time-frame	Type	Study Population	Health Outcome/s	Exposure variables	Statistical Analysis	Key findings	Assessed for interaction with socioeconomic or other risk factors?	Multi-pollutant models?	Controlled for indoor fuel use?
Acute respiratory symptoms associated with short term fluctuations in ambient pollutants among schoolchildren in Durban, South Africa; Mentz et al.	2017	Durban, South Africa	Not given	Longitudinal panel study of children from different schools followed over time	N = 423 school children, 44% African, 23% mixed race, 28% Indian, 6% white	Acute respiratory – cough, wheeze, shortness of breath, chest tightness/heaviness, any symptoms; outcomes ascertained with daily logs recorded bi-hourly	PM10, SO2, NO2, NO measured at 8 monitoring sites and at each school	GEE; 0 – 5 day lags; single lags and distributed lags	PM10 - ↑ cough, ↑ SOB, ↑ chest; SO2 - ↑ cough, ↑ SOB, ↑ chest; NO2 - ↑ cough, ↑ wheeze, ↑ SOB, ↑ chest; NO - ↑ cough, ↓ wheeze, ↑ SOB, ↑ chest	No	Yes, but bi-pollutant model results not presented due to problems from multi-colinearity	No
Ambient pollution and respiratory outcomes among schoolchildren in Durban, South Africa;	2013	Durban, South Africa	Not given	Cross-sectional study of children from different schools	N = 341 school children, 41% black, 22% coulured, 26% Indian, 11% white	Chronic – cough, phlegm, bronchitis, wheezing, wheezing + SOB, Stuffy/runny nose, watery/itchy eyes, asthma,	PM10, SO2, NO2, NO measured at 8 monitoring sites and at each school	Logistic regression	SO2 - ↑ airway hyperreactivity, No associations between pollutants and other outcomes	No	No	No

Naidoo et al.						airway hyperreactivity						
Ambient PM2.5 and Stroke Effect Modifiers and Population Attributable Risk in Six Low- and Middle-Income Countries; Lin et al.	2017	**South Africa, Ghana**, China, India, Mexico, Russia	2007-2010	Cross-sectional/household surveys	N = 45,625	Stroke – based on self-report over the past 12-months	PM2.5 – yearly averages derived from satellite-derived aerosol optical depth estimates	Logistic regression – 3-level multilevel model	PM2.5 - ↑ stroke in past 12 months	Yes – sex, age, smoking*, physical activity*, fruit* and vegetable* consumption	No	Yes
Exposure to air pollution and tobacco smoking and their combined effects on depression in six low- and middle-income countries. Lin et al.	2017	**South Africa, Ghana**, China, India, Mexico, Russia	2007-2010	Cross-sectional/household surveys	N = 41,785	Depression	PM2.5 – yearly averages derived from satellite-derived aerosol optical depth estimates	Logistic regression – 3-level multilevel model	PM2.5 - ↑ depression	Yes – smoking*	No	Yes
Exposure to ambient PM2.5 associated with overall and domain-specific	2017	**South Africa, Ghana**, China, India, Mexic	2007-2010	Cross-sectional/household surveys	N = 45,625	Disability Score	PM2.5 – yearly averages derived from satellite-derived	Linear regression – 3-level multilevel model	PM2.5 - ↑ Disability Score	No	No	Yes

disability among adults in six low- and middle-income countries; Lin et al.		o, Russia					aerosol optical depth estimates					
Ambient Air Pollution Exposure and Respiratory, Cardiovascular and Cerebrovascular Mortality in Cape Town, South Africa: 2001–2006; Wichmann & Voyi.	2012	Cape Town, South Africa	2001-2006	Case-crossover using mortality data from local municipal records	N = 149,667 (respiratory disease = 13,439; CVD = 21,569; CBD = 7,594	Mortality – respiratory disease (RD); cardiovascular disease (CVD); and cerebrovascular disease (CBD)	NO2, SO2, and PM10 measured daily at three government monitoring sites	Logistic regression; tested zero – 5-day lags	NO2 – ↑ CVD; SO2 – ↑ CVD; PM10 – ↑ CBD; NO2 - ↑ CBD; PM10 – ↑ RD (warm temps); NO2 – ↑ RD (warm temps); PM10 - ↑ CVD (warm temps); NO2 - ↑ CBD (warm temps)	Yes – seasonal temperatures, sex, age, distance from monitors*	No	No
The effects of air pollution on human mortality: does gender difference matter in African countries?; Aliyu & Ismail.	2016	35 African countries	1995-2011	Longitudinal, population-based panel study (ecological)	Not given	Mortality rate – stratified by male and female adults, infants, and under-5 mortality	PM10 and CO2 emissions per capita (source of these data were not well	Generalized method of moment regression	PM10 - ↑ male and female adult mortality and ↑ infant and under-5 mortality; CO2 - ↑ male and female	Yes – sex and government effectiveness	No	No

							described)		adult mortality and ↑ infant and under-5 mortality			
Traffic Air Pollution and Other Risk Factors for Respiratory Illness in Schoolchildren in the Niger-Delta Region of Nigeria; Mustapha et al.	2011	Nigeria municipalities: Warri, Ebrumede, Effurun, jeddo, Ubeji, Otor-Udu, Owhrode, Ovu, Udu, and Edu	March – June 2004	Cross-sectional survey study	N = 1,397 schoolchildren (7 – 14 years)	Wheeze (past 12 months); Night cough (past 12 months); Phlegm; Rhinitis; Asthma (ever diagnosed)	PM (of various size fractions) and CO. Note: exposure metric based on a principal component analysis that combined air measurements with traffic indicators	Logistic regression	Component 1 (traffic pollution) - ↑ phlegm; Component 3 (fine particulates /trucks) - ↑ phlegm	No	Yes – use of PCA may constitute a multi-pollutant framework	Yes
Outdoor respirable particulate matter and the lung function status	2014	Ibadan, Nigeria	January – March 2008	Cross-sectional study	N = 140, ages 15-65 years	FEV1 observed and % predicted FEV1 as determined by observed FEV1/predicted FEV1	PM10	Spearman rank correlation test	PM10 - ↑ FEV1 (observed)	No	No	No

of residents of selected communities in Ibadan, Nigeria; Gree et al.												
The Associations between Types of Ambient PM2.5 and Under-Five and Maternal Mortality in Africa; Owili et al.	2017	All African countries	2000-2015	Ecological study	Not given	Under-five mortality and Maternal mortality	Annual PM2.5 pollution type (biomass, anthropogenic, dust, mixture) as derived from monthly spectral aerosol optical depth satellite data to estimate concentrations for African sub-region	Generalized Linear and Additive Mixed-Effect models with Poisson link function	Biomass PM2.5 – ↑ Under-5 deaths and Maternal deaths; Anthropogenic PM2.5 - ↑ Under-5 deaths and Maternal deaths; Dust PM2.5 - ↓ Under-5 deaths and Maternal deaths; Mixture PM2.5 - ↓ Under-5 deaths and Maternal deaths	No	No	No
Outdoor Air Pollution, Preterm Birth, and Low Birth	2014	Democratic Republic of Congo	Sept. 2004 – Marc	Cross-sectional health facility study	N=192,900 with n=35,125 from SSA	Low birth weight and Preterm birth	Seasonally adjusted long-term	Generalized estimating equatio	PM2.5 - ↑ low birth weight	No	No	No

Weight: Analysis of the World Health Organization Global Survey on Maternal and Perinatal Health; Fleischer et al.		, Kenya, Niger, Nigeria	h 2005		countries		average PM2.5 estimates estimated around study clinics (50-km buffers). Estimates derived from satellite data.	ns accounting for clinic correlation in birth outcomes			
Interaction between ambient pollutant exposure, CD14 (-159) polymorphism and respiratory outcomes among children in Kwazulu-Natal, Durban; Makamure et al.	2017	Durban, South Africa	3-weeks during differed seasons	Prospective cohort at schools with questionnaire	N=71, Children ages 7 – 9 recruited from 7 different schools	Repeated measures of within-day variability in Lung function (FEV1)	Daily concentrations of NO2, NO, SO2, and PM from continuous air monitoring: NO and NO2 measured at 7 monitoring sites; SO2 at 16 sites	Linear multivariate generalized estimated equations to account for correlation of FEV1 within participant	No overall associations between pollutants and within-day lung function; Significant gene-environment interaction (CD14 polymorphisms) for NO and NO2 on within-day lung function;	Yes – By CD14 polymorphism genotype	No	No

							(including all 7 schools); PM10 at 12 sites (and each school)					