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Supplementary appendix

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APPENDIX

Global, regional and national prevalence and risk factors for chronic obstructive pulmonary disease (COPD) in 2019: a systematic review and modelling analysis

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Appendix 1. Search strategy to identify studies reporting the prevalence of COPD in the general population

Medline (n=2054)	
1	*pulmonary disease, chronic obstructive/ or *bronchitis, chronic/ or
2	*pulmonary emphysema/
3	*morbidity/ or exp prevalence/ or *mortality/
4	*risk factors/
5	(burden adj3 disease).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
6	2 or 3 or 4
7	1 and 5
8	limit 6 to (humans and yr="1990 -Current")
EMBASE (n= 1817)	
1	*pulmonary disease, chronic obstructive/ or *bronchitis, chronic/ or
2	*pulmonary emphysema/
3	*morbidity/ or exp prevalence/ or *mortality/
4	*risk factors/
5	(burden adj3 disease).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
6	2 or 3 or 4
7	1 and 5
8	limit 6 to (humans and yr="1990 -Current")
Global Health (n=1641)	
1	exp epidemiology/ or exp morbidity/
2	exp risk factors/
3	(burden adj3 disease).mp. [mp=abstract, title, original title, broad terms, heading words, identifiers, cabicodes]
4	copd.mp.
5	chronic obstructive airway disease.mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
6	1 or 2 or 3
7	4 or 5
8	6 and 7
9	limit 8 to yr="1990 -Current"
CINAHL (n=2285)	
((MH "Pulmonary Disease, Chronic Obstructive+") OR (AB chronic obstructive airway disease* OR AB chronic bronchitis* OR AB emphysema* OR AB COPD)) AND ((MM "Prevalence") OR (MM "Epidemiology") OR (MH "Morbidity+") OR (MH "Mortality+"))	
Limiters: Publication Year: 1990-2019	

Appendix 2. eMethods: Detailed description of global and regional estimation of COPD prevalence

This section is a supplement to the Methods part in the main text.

Modelling the global prevalence of GOLD-COPD and LLN-COPD

Using the extracted prevalence data points from all included articles, we first explored the crude effect of age and age-adjusted effects of several cluster-level variables, namely female proportion, setting (rural and urban), year of investigation and WHO region.

We ensured at least 20 data points for a variable to be considered in our regression models. We controlled the effects of multiple data points from the same investigation and from the same country by adding a random effect (study identification and country identification). We constructed four different models for HICs and LMICs based on GOLD and LLN criteria.

Category	Model for constructing the prevalence
GOLD-COPD in HICs	$\frac{e^{(12.6158+0.0546*age-0.6987*female\ proportion-0.0087*Investigation\ year+u_i)}}{1 + e^{(12.6158+0.0546*age-0.6987*female\ proportion-0.0087*Investigation\ year+u_i)}}$
GOLD-COPD in LMICs	$\frac{e^{(7.4258+0.0541*age-1.0156*female\ proportion-0.0059*Investigation\ year+u_i)}}{1 + e^{(7.4258+0.0541*age-1.0156*female\ proportion-0.0059*Investigation\ year+u_i)}}$
LLN-COPD in HICs	$\frac{e^{(-2.9728+0.0159*age-0.3277*female\ proportion+u_i)}}{1 + e^{(-2.9728+0.0159*age-0.3277*female\ proportion+u_i)}}$
LLN-COPD in LMICs	$\frac{e^{(-4.9855+0.0471*age+0.0080*female\ proportion+u_i)}}{1 + e^{(-4.9855+0.0471*age+0.0080*female\ proportion+u_i)}}$

Note: u_i = variance of the study-level random effect

Based on the above models, we estimated the age- and sex-specific prevalence of GOLD-COPD and LLN-COPD respectively for the year 2019. We restricted to the age span to 30-79 years because relatively few data points were available in younger (<30 years) and older (>80 years) age groups. Then the numbers of people aged 30-79 years that were affected by GOLD-COPD and LLN-COPD in 2019 were calculated by applying the age- and sex-specific prevalence estimates to the corresponding age- and sex-specific demographic data. The numbers of people affected by GOLD-COPD in HICs and LMICs were treated as the “GOLD-COPD HIC envelope” and “GOLD-COPD LMIC envelope” and provided the basis for our regional estimation of COPD cases.

Estimation of the regional number of people with GOLD-COPD in 2019

Due to the limited data availability, we did not estimate the regional COPD cases based on the LLN criteria. For GOLD-COPD, the regional number of people with COPD was estimated at an envelope condition. The “risk factor-based model” was used to split the “GOLD-COPD HIC envelope” and “GOLD-COPD LMIC envelope” into ten WHO-WB regions: AMR (HIC), EUR (HIC), EMR (HIC), WPR (HIC), AFR (LMIC), AMR (LMIC), SEAR (LMIC), EUR (LMIC), EMR (LMIC) and WPR (LMIC). Four risk factors, namely current smoking, underweight, use of biomass fuel and rural residence, were selected. First, the “GOLD-COPD HIC envelope” and “GOLD-COPD LMIC envelope” were split into urban and rural settings based on the below models.

Category	Model for constructing the regional prevalence
GOLD-COPD in HICs	$\frac{e^{(22.4942+0.0474*age-0.6840*female\ proportion-0.0132*Investigation\ year-0.4816*Urban\ setting+u_i)}}{1 + e^{(22.4942+0.0474*age-0.6840*female\ proportion-0.0132*Investigation\ year-0.4816*Urban\ setting+u_i)}}$
GOLD-COPD in LMICs	$\frac{e^{(3.7201+0.0625*age-1.0108*female\ proportion-0.0042*Investigation\ year-0.2698*Urban\ setting+u_i)}}{1 + e^{(3.7201+0.0625*age-1.0108*female\ proportion-0.0042*Investigation\ year-0.2698*Urban\ setting+u_i)}}$

Second, the number of COPD cases for the ten WHO-WB regions was calculated using a model based on the epidemiological concept of potential impact fraction:

$$N_{WHO-WB\ region} = (Pop_{WHO-WB\ region}) * (Prev_{COPD_{HIC/LMIC}}) * (1 + \sum_{RF_1}^{RF_3} [(Prev_{RF_{WHO-WB\ region}} - Prev_{RF_{HIC/LMIC}}) * (OR_{RF_{HIC/LMIC}} - 1)])$$

Where $N_{WHO-WB\ region}$ refers to the number of COPD cases in each of the ten WHO-WB regions, $Pop_{WHO-WB\ region}$ is the population of people aged 30-79 years in each WHO-WB region, $Prev_{COPD_{HIC/LMIC}}$ indicates the estimated prevalence of COPD in HICs or LMICs where the corresponding WHO-WB region belongs. RF_1-RF_3 are the three selected risk factors-current smoking, underweight and use of biomass fuel, $Prev_{RF_{WHO-WB\ region}}$ is the prevalence of the three risk factors in each WHO-WB region and $Prev_{RF_{HIC/LMIC}}$ is the prevalence of the three risk factors in HICs or LMICs where this WHO-WB region stands. $OR_{RF_{HIC/LMIC}}$ is the estimated OR of the specific risk factor in HICs or LMICs where the selected WHO-WB region locates.

Estimation of the national number of people with GOLD-COPD in 2019

According to the different distributions of the three risk factors in 201 countries and territories, we adopted a similar “risk-factor based” formula below:

$$N_{country} = Pop_{country} * (Prev_{COPD_{HIC/LMIC}}) * (1 + \sum_{RF_1}^{RF_3} [(Prev_{RF_{country}} - Prev_{RF_{WHO-WB\ region}}) * (OR_{RF_{HIC/LMIC}} - 1)])$$

Where $N_{country}$ and $Pop_{country}$ are the number of COPD cases and people aged 30-79 years in 201 countries and territories. $Prev_{COPD_{HIC/LMIC}}$ indicates the prevalence of COPD in HICs or LMICs where this country belongs. RF_1-RF_3 are the same risk factors adopted in Stage 6. $Prev_{RF_{country}}$ and $Prev_{RF_{WHO-WB\ region}}$ are the prevalence rates of risk factors in each country and territory and in its corresponding WHO-WB region. $OR_{RF_{HIC/LMIC}}$ is the estimated OR of the three risk factors in HIC or LMIC.

Appendix 3. Supplementary figures and tables

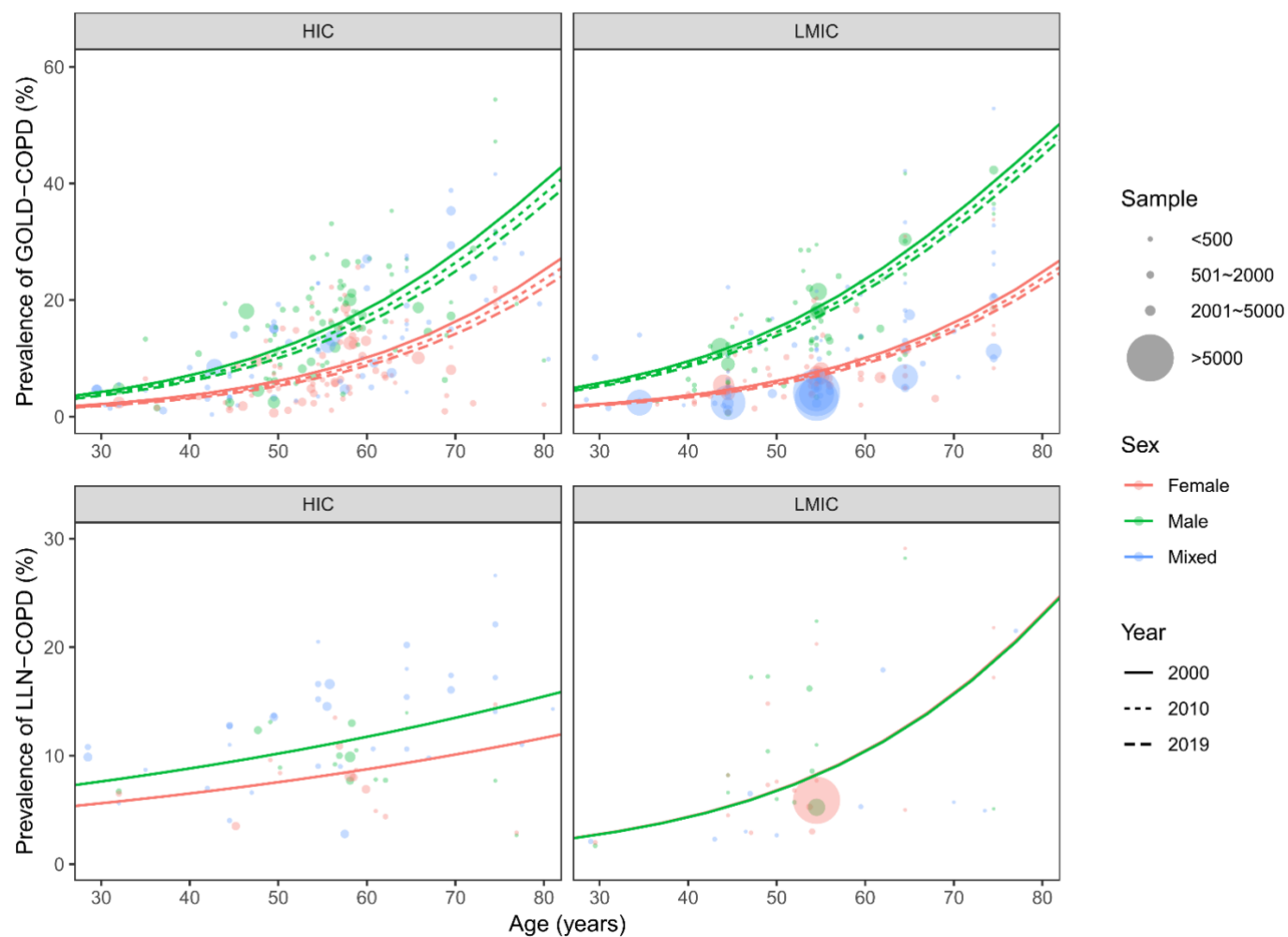


Figure S1. Age-, sex- (and year-) specific prevalence of GOLD-COPD and LLN-COPD, with 95% confidence interval

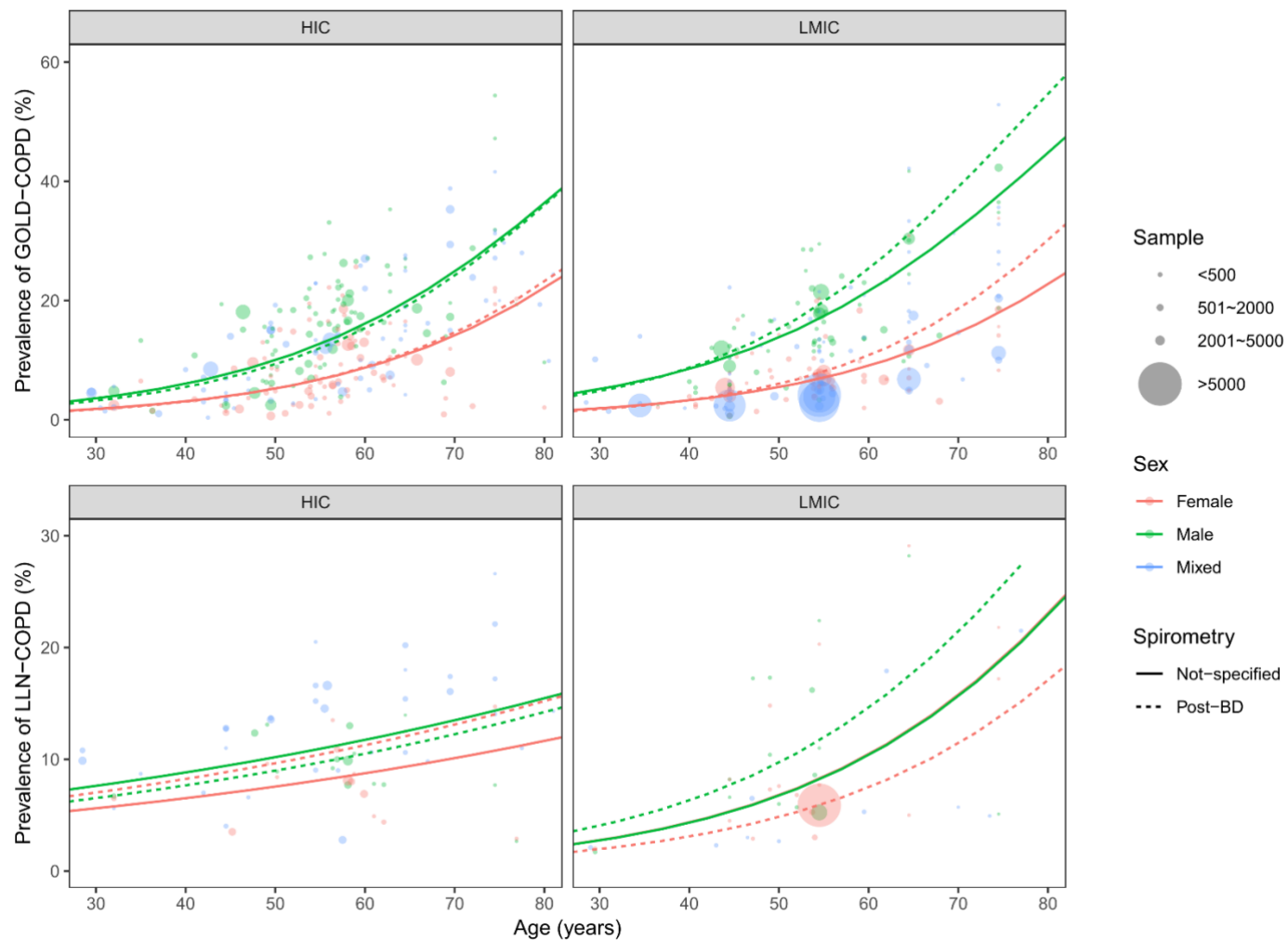


Figure S2. Age-, sex- and spirometry-specific prevalence of GOLD-COPD and LLN-COPD in 2019, with 95% confidence interval

Table S1. Age-adjusted meta-regression models of cluster-level factors related to the prevalence of GOLD- COPD and LLN-COPD (logit form)

Moderator	HICs					LMICs				
	No. of studies	No. of data points	β	95 % CI	P value	No. of studies	No. of data points	β	95 % CI	P value
GOLD- COPD										
Age	92	258	0.0542	0.0523-0.0560	<0.0001	61	202	0.054	0.0528-0.0552	<0.0001
Female proportion	78	234	-0.6991	[-0.7264]-[-0.6718]	<0.0001	52	190	-1.0156	[-1.0419]-[-0.9892]	<0.0001
Setting	59	169				42	136			
Urban	49	137	ref			22	61	ref		
Rural	14	32	0.3070	0.1061-0.5080	0.0028	22	75	0.2961	0.2669-0.3253	<0.0001
Investigation period	92	258				61	202			
Before 2000	23	56	ref			3	6	ref		
2000-2009	53	143	-0.1070	[-0.1574]-[-0.0565]	<0.0001	24	72	0.1035	[-0.6053]-0.8123	0.7748
2010 and later	23	59	-0.114	[-0.1791]-[-0.0513]	0.0004	34	124	0.0395	[-0.6485]-0.7275	0.9104
WHO Region	92	258				61	202			
WPR	23	75	ref			23	91	ref		
AFR*		-	-			9	20	0.6898	0.2662-1.1135	0.0014
AMR	12	31	0.4538	[-0.0233]-0.9310	0.0623	6	19	0.3698	[-0.0670]-0.8066	0.097
SEAR		-	-			11	31	0.3472	[-0.0498]-0.7442	0.0865
EUR	57	146	0.0031	[-0.3395]-0.3456	0.9861	8	28	0.1309	[-0.2810]-0.5428	0.5334
EMR	2	6	-0.9895	[-1.8730]-[-0.1060]	0.0282	7	13	0.6104	0.1416-1.0793	0.0107
LLN-COPD										
Age	21	67	0.0160	0.0138-0.0181	<0.0001	12	44	0.0469	0.0391-0.0546	<0.0001
Female proportion	17	62	-0.3277	[-0.3877]-[-0.2678]	<0.0001	11	43	0.0080	[-0.0413]-0.0573	0.7503
Setting	13	42				7	21			
Urban	12	41	ref			3	5	ref		
Rural	1	1	-1.2424	[-2.2535]-[-0.2313]	0.0160	4	16	0.2151	[-0.8855]-1.3156	0.7017
Investigation period	22	73				12	44	0.2653	0.1751-0.3555	<0.0001
Before 2000	6	13	ref				-	-		
2000-2009	9	29	-0.3989	[-0.5026]-[-0.2953]	<0.0001	3	10	ref		
2010 and later	9	25	-0.2058	[-0.2993]-[-0.1123]	<0.0001	10	34	0.9736	[0.7176]-[1.2296]	<0.0001
WHO Region	22	73				12	44			
WPR	3	10	ref			1	2	ref		
AFR*		-	-			4	18	0.0982	[-1.1120]-1.3083	0.8737
AMR	8	25	0.2584	[-0.3925]-0.9093	0.4365	1	2	0.7081	[-0.8294]-2.2455	0.3667

Moderator	HICs					LMICs				
	No. of studies	No. of data points	β	95 % CI	P value	No. of studies	No. of data points	β	95 % CI	P value
SEAR		-	-			3	16	0.9308	[-0.3766]-2.2382	0.1629
EUR	10	32	-0.3091	[-0.9183]-0.3002	0.3201	1	2	-0.052	[-1.5800]-1.4761	0.9469
EMR		-	-			2	4	0.1818	[-1.1443]-1.5079	0.7882

Table S2. Country or territory list in World Health Organization and World Bank regions

High-income countries (HIC)	
Region of the Americas (AMR)	Antigua and Barbuda, Aruba, Bahamas, Barbados, Curaçao, Guadeloupe, Martinique, Puerto Rico, Trinidad and Tobago, United States Virgin Islands, Argentina, Chile, French Guiana, Uruguay, Canada, United States of America
European Region (EUR)	Cyprus, Israel, Czechia, Hungary, Poland, Slovakia, Channel Islands, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom, Croatia, Greece, Italy, Malta, Portugal, Slovenia, Spain, Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland
Eastern Mediterranean Region (EMR)	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, State of Palestine, United Arab Emirates
Western Pacific Region (WPR)	China Hong Kong SAR, China Macao SAR, China Taiwan Province, Japan, Republic of Korea, Brunei Darussalam, Singapore, Australia, New Zealand, New Caledonia, Guam
Low-income and middle-income countries (LMIC)	
African Region (AFR)*	Burundi, Comoros, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mayotte, Mozambique, Réunion, Rwanda, South Sudan, Uganda, United Republic of Tanzania, Zambia, Zimbabwe, Angola, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Sao Tome and Principe, Algeria, Western Sahara, Botswana, Lesotho, Namibia, South Africa, Swaziland, Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Seychelles*, Sierra Leone, Togo
Region of the Americas (AMR)	Cuba, Dominican Republic, Grenada, Haiti, Jamaica, Saint Lucia, Saint Vincent and the Grenadines, Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Bolivia (Plurinational State of), Brazil, Colombia, Ecuador, Guyana, Paraguay, Peru, Suriname, Venezuela (Bolivarian Republic of)
South-East Asia Region (SEAR)	Dem. People's Republic of Korea, Bangladesh, Bhutan, India, Maldives, Nepal, Sri Lanka, Indonesia, Myanmar, Thailand, Timor-Leste
European Region (EUR)	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Armenia, Azerbaijan, Georgia, Turkey, Belarus, Bulgaria, Republic of Moldova, Romania, Russian Federation, Ukraine, Albania, Bosnia and Herzegovina, Montenegro, Serbia, TFYR Macedonia
Eastern Mediterranean Region (EMR)	Djibouti, Somalia, Egypt, Libya, Morocco, Sudan, Tunisia, Afghanistan, Iran (Islamic Republic of), Pakistan, Iraq, Jordan, Lebanon, Syrian Arab Republic, Yemen
Western Pacific Region (WPR)	China, Mongolia, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Viet Nam, Fiji, Papua New Guinea, Solomon Islands, Vanuatu, Kiribati, Micronesia (Fed. States of), French Polynesia, Samoa, Tonga

Table S3. Characteristics of included studies (n=162)

ID	Author	Year	Country	Site	WHO	World Bank	Income	Setting	Ethnicity	Investigation	Study	Design	Sampling	Screening	Age	Criteria	PostBD?	Sample	Cases	Prevalence
1	Al Ghobain	2015	Saudi Arabia	Riyadh	EMRO	MENA	HIC	Urban	NA	2015	BOLD study	Multistage random	Random	GOLD	40+	Fixed ratio	PostBD	782	33	4.2
2	Al Zaabi	2011	UAE	Abu Dhabi, UAE	EMRO	MENA	HIC	Urban	NA	May 2009-May 2010	NA	Cross-sectional	Random	GOLD	40-80	Fixed ratio	NS	520	19	3.7
3	Alam	2015	Bangladesh	Matlab and Kamlapur	SEARO	South Asia	LMIC	Rural	NA	Feb 2011 - Mar 2012	NA	Cross-sectional	Random	GOLD	40+	Fixed ratio	PostBD	3594	486	13.5
																LLN	PostBD	3594	369	10.3
4	Al-Hazmi	2007	Canada	Vancouver, Winnipeg, Hamilton, Montreal, Halifax and Prince Edward Island [PEI], Canada	PAHO	North America	HIC	Urban	NA	1993-1994	NA	Cross-sectional	Two-staged Random	European Community Respiratory Health Survey (ECRHS) questionnaire	20 - 44	LLN	NS	2819	186	6.6
5	Amarasinghi	2017	Sri Lanka	Sri Lanka	SEARO	South Asia	LMIC	Mixed	NA	2017	BOLD Study	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	PostBD	1239	130	10.5
6	Amra	2011	Iran	Isfahan	EMRO	MENA	LMIC	Mixed	NA	2009-2010	NA	Cross-sectional	Random	European Respiratory Society (ERS) guidelines and Berlin questionnaire	15+	Fixed ratio	NS	420	71	16.9
7	Andreeva	2016	Russia	North-western Russia	EURO	Europe	LMIC	Urban	NA	2011- 2013	NA	Cross-sectional	Random	Standard questionnaire & spirometry	35-70	Fixed ratio	PostBD	2386	162	6.8
																LLN	PostBD	2386	114	4.8
8	Arslan	2013	Turkey	North western Anatoli, Kocaeli	EURO	Europe	LMIC	Urban	NA	2006		Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	NS	946	126	13.3
9	Backman	2016	Sweden	Norrbottn, northernmost Sweden	EURO	Europe	HIC	Urban	NA	1994; 2009	NA	Cross-sectional	Random	Standard questionnaire & spirometry	23-72	Fixed ratio	PostBD	660	75	11.4
															23-74	LLN	PostBD	660	75	11.4
10	Bakke	1991	Norway	Hordaland, Norway	EURO	Europe	HIC	Mixed	NA	1991	NA	Cross-sectional	Random	Standard questionnaire & spirometry	18 - 73	Fixed ratio	NS	1275	65	5.4
11	Barbara	2013	Portugal	Lisbon, Portugal	EURO	Europe	HIC	Urban	NA	Jun-Nov 2008	NA	Cross-sectional	Multistage stratified random	BOLD protocol	40+	Fixed ratio	PostBD	710	101	14.2
12	Benediktsson	2007	Iceland	Reykjavik, Iceland	EURO	Europe	HIC	Urban	NA	2004	The BOLD Study	Cross-sectional	Simple random	BOLD protocol	40+	Fixed ratio	PostBD	755	136	18
13	Bhatta	2018	Norway	Nord-Trøndelag,	EURO	Europe	HIC	Mixed	NA	1995-2008	NA	Cross-sectional	Random	Standard questionnaire	40+	Fixed ratio	PostBD	7158	1195	16.7

				Central Norway										e & spirometry						
																LLN	PostBD	7158	744	10.4
14	Borlee	2017	Netherlands	South, Netherlands	EURO	Europe	HIC	Urban	NA	2012	NA	Cross-sectional	Random	Standard questionnaire, Electronic Medical Record (EMR) & spirometry	18-70	Fixed ratio	PostBD	1793	196	10.9
																LLN	PostBD	1793	105	5.9
15	Bridevaux	2010	Switzerland	Switzerland	EURO	Europe	HIC	Mixed	NA	2002	NA	Longitudinal	Random	SAPALDIA ((Swiss Study on Air Pollution and Lung Diseases in Adults)	30+	Fixed ratio	PostBD	6126	429	7
16	Brostrom	2018	Estonia	Tartu, Estonia	EURO	Europe	HIC	Urban	NA	2007-2010	NA	Cross-sectional	Random	BOLD protocol	40+	LLN	PostBD	614	37	6.1
			Iceland	Reykjavik, Iceland	EURO	Europe	HIC	Urban	NA	2007-2010	NA	Cross-sectional	Random	BOLD protocol	40+	LLN	PostBD	757	85	11.3
			Sweden	Uppsala, Sweden	EURO	Europe	HIC	Urban	NA	2007-2010	NA	Cross-sectional	Random	BOLD protocol	40+	LLN	PostBD	547	49	9
17	Buist	2007	Turkey	Adana, Turkey	EURO	Europe	LMIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	PostBD	806	155	19.2
			Norway	Bergen, Norway	EURO	Europe	HIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Stratified cluster	BOLD protocol	40+	Fixed ratio	PostBD	658	124	18.8
			South Africa	Cape Town, South Africa	AFRO	SSA	LMIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Cluster	BOLD protocol	40+	Fixed ratio	PostBD	847	202	23.8
			China	Gunagzhou, China	WPRO	East Asia & Pacific	LMIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	PostBD	473	54	11.4
			Philippines	Manila, Philippines	WPRO	East Asia & Pacific	LMIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Cluster	BOLD protocol	40+	Fixed ratio	PostBD	893	124	13.9
			Canada	Vancouver, Canada	PAHO	North America	HIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Random digit dialing	BOLD protocol	40+	Fixed ratio	PostBD	827	159	19.3
			Australia	Sydney, Australia	WPRO	East Asia & Pacific	HIC	Mixed	NA	2005	The BOLD Study	Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	PostBD	541	103	19.2
18	Burney	2014	India	Mumbai, India	SEARO	South Asia	LMIC	Mixed	NA	2006-2008	NA	Cross-sectional	Random	BOLD protocol	25+	LLN	PostBD	440	30	6.8
				Pune, India	SEARO	South Asia	LMIC	Mixed	NA	2008-2009	NA	Cross-sectional	Random	BOLD protocol	25+	LLN	PostBD	849	53	6.25
				Srinagar, India	SEARO	South Asia	LMIC	Mixed	NA	2010-2011	NA	Cross-sectional	Random	BOLD protocol	25+	LLN	PostBD	763	122	16.05
19	Caballero	2008	Colombia	Barranquilla, Bogota, Bucaramanga, Cali, and Medellin	PAHO	South America	LMIC	Urban	NA	Feb 2003 - May 2004	PREPOCOL Study	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	PostBD	5539	494	8.9
20	Cabrera Lopez	2014	Spain	Gran Canaria and Tenerife	EURO	Europe	HIC	Urban	NA	2012	NA	Cross-sectional	Random	ATS/ERS protocol	40-70	Fixed ratio	PostBD	1001	73	7.3

21	Cardoso	2013	Portugal	Portugal	EURO	Europe	HIC	Mixed	NA	February 2003 - May 2004	Pneumobil study	Cross-sectional	Probabilistic bistage clustered	BOLD protocol	35+	Fixed ratio	PostBD	1384	73	5.3
22	Cooksley	2015	Australia	Kimberley, Northern Western Australia	WPRO	East Asia & Pacific	HIC	Rural	NA	March 2008 - May 2012	BOLD study	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	PostBD	231	19	8.4
23	Daldoul	2013	Tunisia	Sousse, Tunisia	EMRO	MENA	LMIC	Urban	NA	2012	BOLD study	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	PostBD	661	49	7.8
																LLN	PostBD	661	35	5.3
24	Danielsson	2012	Sweden	Uppsala, Sweden	EURO	Europe	HIC	Urban	NA	Jul 2006 - Dec 2007	NA	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	PostBD	548	86	16.2
25	de Marco	2004	Europe	Europe	EURO	Europe	HIC	Mixed	NA			Cross-sectional	Random	GOLD protocol	20-44	Fixed ratio	NS	14855	537	3.6
26	Denguezli	2016	Tunisia	Sousse, Tunisia	EMRO	MENA	LMIC	Urban	NA	2007		Cross-sectional	Stratified random	ATS/ERS protocol	40+	Fixed ratio	PostBD	717	88	12.3
27	Deveci	2011	Turkey	Elazig, Eastern Turkey	EURO	Europe	LMIC	Mixed	NA	Jan 2007 - Jun 2007	Cross-sectional	Random	BOLD protocol		18+	Fixed ratio	PostBD	1188	53	4.5
28	Ding	2018	China	Hainan Island, China	WPRO	East Asia & Pacific	LMIC	Rural	NA	Dec. 2014	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	5637	286	5.07
29	Doney	2015	USA	USA	PAHO	North America	HIC	Mixed	non-Hispanic White, non-Hispanic Black, Other Hispanic, Mexican American, or other	2007-2010	NHANES	Cross-sectional	Complex multistage probability	NHANES and ATS	40-79	LLN	PostBD	5476	794	14.5
										1994	NHANES	Cross-sectional	Complex multistage probability	NHANES and ATS	40-79	LLN	PostBD	7667	1273	16.6
30	Echazarr eta	2018	Argentina	La Plata, Rosario, Autonomous City of Buenos Aires, Northern Region of Gran Buenos Aires, Córdoba and Mendoza	PAHO	South America	HIC	Urban	NA	Aug 2014; May 2016	EPOC.AR study	Cross-sectional	Random Cluster	Standard questionnaire & spirometry	40+	Fixed ratio	PostBD	3469	503	14.5
																LLN	PostBD	3469	335	9.4
31	Ekberg-Aronsson	2008	Sweden	Malmo, Sweden	EURO	Europe	HIC	Mixed	NA	1992	NA	Longitudinal	Random	GOLD protocol	<64	Fixed ratio	NS	22044	3358	15.2
32	El Rhazi	2016	Morocco	Fez City, Sais	PAHO	MENA	LMIC	Urban	NA	2016		Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	768	96	12.6
																LLN	PostBD	768	68	8.9

33	Evans	2014	Canada	Canada	PAH O	North Ameri ca	HIC	Urban	NA	Mar 2007 - Feb 2009	NA	Cross-sectional	Random	ATS/ERS protocol	35 - 79	Fixed ratio	NS	2487	412	16.6
34	Fabircius	2011	Denmark	Copenhage n City, Denmark	EURO	Europ e	HIC	Urban	NA	2007	NA	Longitudi nal	Random	GOLD protocol	35+	Fixed ratio	NS	4908	853	17.4
35	Fang	2018	China	National	WPR O	East Asia & Pacific	LMIC	Mixed	NA	Dec 2014- Dec 2015	NA	Cross-sectional	Complex multistage probabilit y	BOLD protocol	40+	Fixed ratio	PostBD	66752	913 4	13.7
36	Fishwick	1997	New Zealand	New Zealand	WPR O	East Asia & Pacific	HIC	Mixed	NA	1996	NA	Cross-sectional	Random	Standard questionnair e & spirometry	20-44	Fixed ratio	NS	1132	24	2.1
37	Ford	2013	USA	National	PAH O	North Ameri ca	HIC	Mixed	non-Hispanic White, non-Hispanic Black, Other Hispanic, Mexican American, or other	2007-2010	NHANES 2007-2010	Cross-sectional	Stratified multistage probabilit y	NS	20-79	Fixed ratio	PostBD	9024	121 8	13.5
										1988-1994	NHANES 2007-2010	Cross-sectional	Stratified multistage probabilit y	NS	20-79	Fixed ratio	PostBD	14360	209 7	14.6
38	Fukuchi	2004	Japan	Japan	WPR O	East Asia & Pacific	HIC	Mixed	NA	Sept-Dec 2000	The Nippon COPD Epidemiolog y study	Cross-sectional	Random stratified	GOLD protocol	40+	Fixed ratio	NS	2343	256	10.9
39	Fullerton	2011	Malawi	Southern Malawi	AFRO	SSA	LMIC	Mixed	NA	2001	NA	Cross-sectional	Random	ATS/ERS protocol	30+	Fixed ratio	NS	332	45	13.6
40	Gathuru	2002	USA	USA	PAH O	North Ameri ca	HIC	Urban	NA	1998 - 1994	Cross-sectional	Stratified multistage probabilit y	NHANES III	Standard questionnair e & spirometry	30-69	Fixed ratio	NS	2856	328	11.5
			Nigeria	Benin City, Nigeria	AFRO	SSA	LMIC	Urban	NA	1992 - 1999	NA	Cross-sectional	Random	Standard questionnair e & spirometry	20-64	Fixed ratio	NS	270	25	9.3
41	Geldmac her	2008	Germany	Hannover, Germany	EURO	Europ e	HIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	PostBD	683	90	13.2
42	Golshan	2001	Iran	Isfahan, Iran	EMR O	MENA	LMIC	Mixed	NA	1998	NA	Cross-sectional	Random	Standard questionnair e & spirometry	35+	Fixed ratio	NS	216	45	20.8
43	Golshan	2011	Iran	Isfahan, Iran	EMR O	MENA	LMIC	Mixed	NA	2010	NA	Cross-sectional	Random	Standard questionnair e & spirometry	35+	Fixed ratio	PostBD	279	62	22.2
44	Gong	2011	China	Shanghai, China	WPR O	East Asia & Pacific	LMIC	Urban	NA	2009	NA	Cross-sectional	Random	Standard questionnair e & spirometry	60+	Fixed ratio	NS	710	104	14.6
45	Grzetic-Romcevi c	2011	Slovenia	Sezana, Slovenia	EURO	Europ e	HIC	Urban	NA	Jan 2003 - Dec 2008	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	770	79	10.3

46	Guerrier o	2015	Italy	Verona, Italy	EURO	Europ e	HIC	Urban	NA	2011-2012	NA	Cross- sectional	Random	Standard questionnair e & spirometry	20-79	Fixed ratio	PostBD	1236	145	11.7
																LLN	PostBD	1236	112	9.1
47	Guillien	2016	France	Brittany and Franche- Comté	EURO	Europ e	HIC	Rural	NA	Oct 2012- May 2013	NA	Cross- sectional	Random	BOLD protocol	40-75	Fixed ratio	PostBD	4704	221	4.7
																LLN	PostBD	4704	131	2.78
48	Gunen	2008	Turkey	Malatya, Turkey	EURO	Europ e	LMIC	Mixed	NA	2007	NA	Cross- sectional	Multistage stratified random	BOLD protocol	18+	Fixed ratio	PostBD	1160	80	6.9
49	Hagstad	2012	Sweden	Norrbottn, Sweden	EURO	Europ e	HIC	Urban	NA	1994-1996	Obstructive Lung Disease in Northern Sweden (OLIN)	Cohort	Random	OLIN- questionnair e	18+	Fixed ratio	PostBD	1943	272	14
																LLN	PostBD	770	52	6.8
50	Hagstad	2015	Sweden	Norrbottn & West Sweden	EURO	Europ e	HIC	Urban	NA	2008-2012	West Sweden Asthma Study and Obstructive Lung Disease in Northern Sweden	Cohort	Random	OLIN- questionnair e	21-78	Fixed ratio	PostBD	1838	233	12.7
																LLN	PostBD	967	29	3
51	Halldin	2015	USA	USA	PAH O	North Ameri ca	HIC	Mixed	non- Hispanic White, non- Hispanic Black, Other Hispanic, Mexican America n, or other	1998-1994	NA	Cross- sectional	Random	NHANES III	40-79	LLN	NS	7667	127 2	16.6
										2007-2010	NA	Cross- sectional	Random	NHANES III	40-79	LLN	NS	5476	796	14.54
52	Hanga	2018	India	Kashmir, North India	SEAR O	South Asia	LMIC	Mixed	NA	Apr 2012 - Dec 2014	A population based study	Cross- sectional	Multi stage gender stratified cluster	ATS Criteria	40+	Fixed ratio	PostBD	1025	162	15.9
53	Hansen	2008	Denmark	Northern Danish	EURO	Europ e	HIC	Mixed	NA	2004	A population based study	Cross- sectional	Random	ATS/ERS protocol	45-84	Fixed ratio	PostBD	4535	541	11.9
54	Hasselgr en	2001	Sweden	Varmland	EURO	Europ e	HIC	Rural	NA	1995	NA	Cross- sectional	Two- staged Random	OLIN- questionnair e	18-70	Fixed ratio	NS	206	4	2.1
55	Hong	2017	Korea Rep	South Korea	WPR O	East Asia & Pacific	HIC	Mixed	NA	2001	NA	Cross- sectional	Two- staged stratified systematic	KNHANES	40+	Fixed ratio	NS	2217	288	13
										2011	NA	Cross- sectional	Two- staged	KNHANES	40+	Fixed ratio	NS	3101	409	13.2

												stratified systematic								
56	Hvidsten	2010	Norway	Bergen	EURO	Europe	HIC	Mixed	NA	1992-1993	Hordaland Health Study (HUSK)	Cross-sectional	Statified random	GOLD protocol	47-73	Fixed ratio	PostBD	3305	303	9.2
57	Hwang	2009	Korea Rep	Korea	WPRO	East Asia & Pacific	HIC	Mixed	NA	Oct 2001 - Jan 2002	Korean NHANES II	Cross-sectional	Random	ATS/ERS protocol	18+	Fixed ratio	NS	2728	185	6.8
58	Idolor	2011	Philippines	North Manila	WPRO	East Asia & Pacific	LMIC	Rural	NA	2010	NA	Cross-sectional	Multistage d random	BOLD protocol	40+	Fixed ratio	PostBD	722	141	20.8
59	Islam	2013	Bangladesh	Dhaka city	SEARO	South Asia	LMIC	Urban	NA	2012		Cross-sectional	Random	ATS criteria	35+	Fixed ratio	NS	900	103	11.4
60	Isoaho	1994	Finland	Turku, Southwest Finland	EURO	Europe	HIC	Rural	NA	1991	NA	Cohort	Random	British Medical Research Council (MRC) and cardiovascular symptoms by the London School of Hygiene cardio-vascular questionnaire	64+	Fixed ratio	NS	1196	82	7.8
61	Jaganath	2015	Peru	Lima	PAHO	South America	LMIC	Urban	NA	Sep-10	CRONICAS study	Longitudinal	Statified random	GOLD protocol	35+	Fixed ratio	PostBD	998	62	6.2
62	Jarhyan	2018	India	North India	SEARO	South Asia	LMIC	Mixed	NA	2018	NA	Cross-sectional	Multistage cluster random	GOLD protocol	40+	Fixed ratio	PostBD	2353	104	4.42
63	Jiang	2007	China	Hubei, Southern	WPRO	East Asia & Pacific	LMIC	Rural	NA	2006	NA	Cross-sectional	Multistage	GOLD protocol	40-70	Fixed ratio	NS	1883	186	9.88
64	Johannesen	2005	Norway	Hordaland, South-west coast Norway	EURO	Europe	HIC	Mixed	NA	1985-1997	NA	Cohort	Random stratified	ATS Criteria and GOLD protocol	18-74	Fixed ratio	PostBD	869	40	4.6
65	Jordan	2012	UK	England, UK	EURO	Europe	HIC	Mixed	White	1995-2001	NA	Cross-sectional	Multistage statified random	GOLD protocol	40+	Fixed ratio	NS	18817	3035	16.1
																LLN	NS	18817	1684	9
66	Jung	2011	Korea Rep	National	WPRO	East Asia & Pacific	HIC	Mixed	NA	2008	KNHANES IV-1, 2008	Cross-sectional	Multistage stratified cluster	Standard questionnaire & spirometry	45+	Fixed ratio	NS	1458	262	18
67	Kainu	2013	Finland	Helsinki, Finland	EURO	Europe	HIC	Urban	NA	1995	NA	Cross-sectional	Random	ATS/ERS protocol	20-79	Fixed ratio	PostBD	628	37	5.9
68	Kanervisto	2011	Finland	Finland	EURO	Europe	HIC	Mixed	NA	2000-2001	NA	Cross-sectional	Random	Standard questionnaire & spirometry	30+	Fixed ratio	NS	6525	338	5.2
69	Khelafi	2011	Algeria	Algiers	AFRO	SSA	LMIC	Mixed	NA	2011	NA	Cross-sectional	Three-staged random	ATS/ERS protocol	21+	Fixed ratio	PostBD	1800	87	4.9

70	Kim	2005	Korea Rep	Korea	WPR O	East Asia & Pacific	HIC	Mixed	NA	Oct 2001 - Jan 2002	NA	Cross-sectional	Stratified multistage cluster probability	ATS/ERS protocol	18+	Fixed ratio	NS	1673	288	17.2
71	Kim	2006	Korea Rep	Korea	WPR O	East Asia & Pacific	HIC	Urban	NA	2001 - 2002	NA	Cross-sectional	Random	ATS/ERS protocol	40-69	Fixed ratio	PostBD	3642	134	3.7
72	Ko	2008	Hong Kong	Shatin, Hong Kong	WPR O	East Asia & Pacific	HIC	Urban	NA	2006	NA	Cross-sectional	Random	ATS/ERS protocol	60+	Fixed ratio	PostBD	1008	261	25.9
73	Ko	2008	Hong Kong	Shatin, Hong Kong	WPR O	East Asia & Pacific	HIC	Urban	NA	2006	NA	Cross-sectional	Random	ATS/ERS protocol	60+	LLN	PostBD	1008	125	12.4
74	Kojima	2005	Japan	Toyota Community	WPR O	East Asia & Pacific	HIC	Urban	NA	Apr 2001 - Mar 2002	NA	Cross-sectional	Random	GOLD protocol	25 - 74	Fixed ratio	NS	11460	213	1.9
75	Konuk	2017	Turkey	Bolu province	EURO	Europe	LMIC	Urban	NA	May 2007 - Jul 2007	NA	Cross-sectional	Random	GOLD protocol	35+	Fixed ratio	NS	500	43	8.6
76	Kotaki	2019	Japan	Omura City	WPR O	East Asia & Pacific	HIC	Urban	NA	2015 - 2018	NA	Cross-sectional	Random	Standard questionnaire & spirometry	50+	Fixed ratio	NS	433	67	15.5
77	Kotaniemi	2005	Finland	Lapland, Northmost province of Finland	WPR O	Europe	HIC	Rural	NA	1995 - 1996	NA	Cross-sectional	Random	Standard questionnaire & spirometry	21-70	Fixed ratio	PostBD	683	64	9.4
78	Koul	2016	India	Kashmir, North India	SEARO	South Asia	LMIC	Rural	NA	Feb. 2010	BOLD study	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	NS	757	146	19.3
																LLN	PostBD	757	122	16.1
79	Kurth	2016	USA	USA	PAHO	North America	HIC	Mixed	NA	2007-2008	NA	Cross-sectional	Multistage probability	ATS/ERS protocol	18-79	LLN	NS	4172	572	13.7
80	Kurth, L	2019	USA	National	PAHO	North America	HIC	Mixed	non-Hispanic White, non-Hispanic Black, Other Hispanic, Mexican American, or other	2007-2012	NHANES	Complex Multistage probability	Random	Standard questionnaire & spirometry	18-79	LLN	NS	13044	1617	12.4
81	Lam	2014	Vietnam	Hanoi, Northern Vietnam	WPR O	East Asia & Pacific	LMIC	Mixed	NA	2007-2010	NA	Cross-sectional	Random	ECRHS and the ARIA questionnaires	23-72	Fixed ratio	PostBD	565	40	7.1
82	Laniado-Laborin	2009	Mexico	Mexico	PAHO	South America	LMIC	Urban	NA	Mar - Oct 2008	NA	Cross-sectional	Random	GOLD	40+	Fixed ratio	PostBD	2293	472	20.6
83	Lau	2008	Hong Kong	Hong Kong	WPR O	East Asia & Pacific	HIC	Urban	NA	2003	NA	Cross-sectional	Multicenter	European Respiratory Society [ERS]	20-80	Fixed ratio	NS	525	101	19.2
84	Li	2009	China	Chongqing	WPR O	East Asia & Pacific	LMIC	Urban	NA	2008	NA	Cross-sectional	Random	GOLD		Fixed ratio	NS	1518	194	12.8

85	Lindberg	2005	Sweden	National	EURO	Europe	HIC	Rural	NA	1994-1995	NA	Postal survey	Postal survey	GOLD	20-69	Fixed ratio	NS	666	94	14.1
86	Lindström	2002	Sweden	Norrbottn, the northernmost province Sweden	EURO	Europe	HIC	Rural	NA	1986-1987	NA	Cross-sectional	Random	OLIN-questionnaire	35-66	Fixed ratio	NS	1580	264	16.7
87	Ling	2011	China	Southern Xinjiang	WPRO	East Asia & Pacific	LMIC	Rural	NA	Dec 2007 - Dec 2010	NA	Cross-sectional	Cluster Random	Standard questionnaire & spirometry	15+	Fixed ratio	NS	3489	138	4
88	Liu	2007	China	South China	WPRO	East Asia & Pacific	LMIC	Rural	NA	2003	September 2002 - March 2003	Cross-sectional	Multistage cluster	GOLD	40+	Fixed ratio	PostBD	3286	310	9.4
89	Liu	2011	China	Shenyang, Chaoyang, and Jinzhou	WPRO	East Asia & Pacific	LMIC	Rural	NA	2006-2009	NA	Cross-sectional	Stratified-cluster random	Standard questionnaire & spirometry	22-74	Fixed ratio	PostBD	5420	947	17.5
90	Magitta	2018	Tanzania	Simuyu, Tanzania	AFRO	SSA	LMIC	Rural	NA	2018	NA	Cross-sectional	Random	BOLD protocol	35+	Fixed ratio	PostBD	496	87	17.54
91	Mahesh	2009	India	Mysore	SEARO	South Asia	LMIC	Rural	NA	2009	NA	Cross-sectional	Random	ATS and GOLD protocol	40+	Fixed ratio	NS	900	79	8.78
92	Mannino	2002	USA	National	PAHO	North America	HIC	Urban	NA	1990		Cross-sectional	Random	GOLD protocol	25+	Fixed ratio	NS	16084	1367	6.8
93	Maranetra	2002	Thailand	Bangkok, Thailand, China	WPRO	East Asia & Pacific	LMIC	Urban	NA	1998		Cross-sectional	Random	GOLD protocol	60+	Fixed ratio	PostBD	3094	220	7.1
94	Martinez	2015	USA	USA	PAHO	North America	HIC	Mixed	Non-hispanic White, African American, Mexican American NA, Others	1998	NA	Cross-sectional	Random	NHANES	20-79	Fixed ratio	NS	14359	1927	13.42
										1994	NA	Cross-sectional	Random	NHANES	20-80	Fixed ratio	NS	13385	1636	12.2
95	Martinez-Perez	2016	Spain	Guadalajara, Spain	EURO	Europe	HIC	Rural	NA	2014	NA	Cross-sectional	Random	Standard questionnaire & spirometry	40-79	Fixed ratio	NS	749	118	15.8
96	Mascarenhas	2011	Portugal	Porto, Portugal	EURO	Europe	HIC	Urban	NA	1999-2003	NA	Cross-sectional	Random	Standard questionnaire & spirometry	40+	Fixed ratio	NS	758	81	10.7
97	Matheson	2005	Australia	South-eastern Melbourne electorates	WPRO	East Asia & Pacific	HIC	Urban	NA	2004	NA	Cross-sectional	Two-staged Random		45-70	Fixed ratio	NS	1213	42	3.5
98	Matsumoto	2015	Japan	Hisayama, Fukuoka, Japan	WPRO	East Asia & Pacific	HIC	Mixed	NA	2008	The Hisayama Study	Cross-sectional	Random	Standard questionnaire & spirometry	40+	Fixed ratio	PostBD	2100	67	3.19

99	Melville	2010	UK	North-East England	EURO	Europe	HIC	Urban	NA	2002-2004	NA	Cross-sectional	Random	European Compendium of Respiratory European Compendium of Respiratory Standard Questionnaires for Adults	45-69	Fixed ratio	PostBD	845	92	10
100	Menezes	2005	Mexico	Mexico City	PAHO	South America	LMIC	Urban	NA	2002	The PLATINO study	Multistaged	ATS/DLD		40+	Fixed ratio	PostBD	1063	83	7.8
			Chile	Santiago	PAHO	South America	HIC	Urban	NA	2002	The PLATINO study	Multistaged	ATS/DLD		40+	Fixed ratio	PostBD	1208	204	16.9
			Venezuela	Caracas	PAHO	South America	LMIC	Urban	NA	2002	The PLATINO study	Multistaged	ATS/DLD		40+	Fixed ratio	PostBD	1357	164	12.1
			Uruguay	Montevio	PAHO	South America	HIC	Urban	NA	2002	The PLATINO study	Multistaged	ATS/DLD		40+	Fixed ratio	PostBD	943	186	19.7
			Brazil	Sao Paulo	PAHO	South America	LMIC	Urban	NA	2002	The PLATINO study	Multistaged	ATS/DLD		40+	Fixed ratio	PostBD	1000	158	15.8
101	Menezes	2004	Brazil	Pelotas, Brazil	PAHO	South America	LMIC	Urban	NA	Jan-Mar 2001	NA	Cross-sectional	Multistage	Standard questionnaire & spirometry	40-69	Fixed ratio	NS	191	29	15.2
102	Methvin	2009	USA	Lexington, USA	PAHO	North America	HIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Random digit dialing	BOLD protocol	40+	Fixed ratio	PostBD	508	100	19.6
103	Minas	2010	Greece	Thessaly, Greece	EURO	Europe	HIC	Rural	NA	Jan 2006 - Jan 2007	Gold protocol	Cross-sectional	Random	GOLD	30+	Fixed ratio	PostBD	1526	281	18.4
104	Miravitlles	2009	Spain	Barcelona, Burgos, Cordoba	EURO	Europe	HIC	Mixed	NA	May 2006 - Jul 2007	EPICAN study	Cross-sectional	Random	ATS/ERS protocol	40-80	Fixed ratio	PostBD	3802	386	10.2
105	Mosharraf-Hossain	2009	Bangladesh	Dhaka	SEARO	South Asia	LMIC	Urban	NA	2009	NA	Cross-sectional	Random	GOLD		Fixed ratio	NS	400	50	12.5
106	Murtagh	2005	UK	North and West Belfast	EURO	Europe	HIC	Mixed	NA	1995-1996	NA	Cross-sectional	Random	GOLD	40-69	Fixed ratio	NS	722	49	6.8
107	Musafiri	2011	Rwanda	Huye & Kigali, Rwanda	AFRO	SSA	LMIC	Mixed	NA	Feb 2008-Aug 2009	NA	Cross-sectional	Random	GOLD	15+	LLN	PostBD	1824	82	4.5
																Fixed ratio	PostBD	1824	212	11.6
108	Nakao	2017	Mongolia	Ulaanbaatar, Mongolian	WPRO	East Asia & Pacific	LMIC	Rural	NA	2012 - 2013	NA	Cross-sectional	Random	GOLD protocol	40-79	Fixed ratio	NS	746	86	11.5
109	Nguyen Viet	2015	Vietnam-Indonesia	Vietnam-Indonesia	WPRO	East Asia & Pacific	LMIC	Rural	NA	Jan - May 2013	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	1506	117	6.9
			Vietnam	Vietnam	WPRO	East Asia & Pacific	LMIC	Rural	NA	Jan - May 2014	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	750	60	8.1
			Indonesia	Indonesia	SEARO	East Asia & Pacific	LMIC	Rural	NA	Jan - May 2015	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	756	47	6.3

110	Niepsuj	2002	Poland	Zabrze, Poland	EURO	Europe	HIC	Rural	NA	2001	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	NS	559	57	10.2
111	Nishimura	2013	Japan	Niigata, Japan	WPRO	East Asia & Pacific	HIC	Urban	NA	Sep 2010 - Mar 2011	Cross-sectional	Random		ATS/ERS protocol	40+	Fixed ratio	NS	1333	145	10.9
112	Nizankowska-Mogilnicka	2007	Poland	Krakow, Poland	EURO	Europe	HIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	PostBD	526	116	22.1
113	North	2019	Uganda	Nyakabare Parish, Mbarara, Uganda	AFRO	SSA	LMIC	Rural	NA	Jun, 2015	NA	Cross-sectional	Random	Standard questionnaire & spirometry	18-93	LLN	PostBD	565	13	2.3
																Fixed ratio	PostBD	565	13	2.3
114	Nugmanova	2018	Ukraine	Kiev	EURO	Europe	LMIC	Mixed	NA	2013-2015	NA	Cross-sectional	Random	American Thoracic Society (ATS) Respiratory Symptoms Questionnaire, COPD Assessment Test (CAT)	18+	Fixed ratio	NS	964	30	3.2
			Kazakhstan	Almaty	EURO	Europe	LMIC	Mixed	NA	2013-2015	NA	Cross-sectional	Random	American Thoracic Society (ATS) Respiratory Symptoms Questionnaire, COPD Assessment Test (CAT)	18+	Fixed ratio	NS	945	63	6.7
			Azerbaijan	Baku	EURO	Europe	LMIC	Mixed	NA	2013-2015	NA	Cross-sectional	Random	American Thoracic Society (ATS) Respiratory Symptoms Questionnaire, COPD Assessment Test (CAT)	18+	Fixed ratio	NS	933	35	3.8
115	Al Lami	2017	Iraq	Baghdad, Iraq	EMRO	MENA	LMIC	Urban	NA	1 May - 30 Oct 2014	NA	Cross-sectional	Random	ATS protocol	18+	Fixed ratio	PostBD	325	48	15
116	Obaseki	2016	Nigeria	Ile-Ife, Nigeria	AFRO	SSA	LMIC	Mixed	NA		NA	Cross-sectional	Random	BOLD protocol	40+	LLN	PostBD	883	69	7.7
117	Ogata	2019	Japan	Hisayama, Japan	WPRO	East Asia & Pacific	HIC	Rural	NA	2012	NA	Two serial Cross-sectional	Random	ATS/ERS protocol	40+	Fixed ratio	NS	3033	403	13.3
118	Ornek	2015	Turkey	Zonguldak, Turkey	EURO	Europe	LMIC	Rural	NA	Sept - Oct 2005	NA	Cross-sectional	Random	GOLD protocol	18+	Fixed ratio	PostBD	611	67	11.1
119	Paprzycki	2003	Poland	Lublin, Poland	EURO	Europe	HIC	Rural	NA	2000	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	NS	643	73	11
120	Parasuramalu	2014	India	Bangalore, India	SEARO	South Asia	LMIC	Rural	NA	Nov-07	NA	Cross-sectional	Cluster	GOLD protocol	35+	Fixed ratio	NS	1400	61	4.4
121	Pefura-Yone	2016	Cameroon	Yaounde	AFRO	SSA	LMIC	Rural	NA	Dec 2013 and Apr 2014	NA	Community-based cross-sectional	Three-level stratified cluster	ATS/ERS protocol	19+	LLN	PostBD	1276	31	2.42

122	Peña	2000	Spain	Spain	EURO	Europe	HIC	Mixed	NA	October 1996 to April 1997	IBERPOC Multicentre Epidemiological Study	Cross-sectional	Multicenter	ATS/ERS protocol	40-69	Fixed ratio	NS	3981	363	9.1
123	Plywaczewski	2003	Poland	Warsaw, Poland	EURO	Europe	HIC	Urban	NA	2001	NA	Cross-sectional	Random		BOLD protocol	Fixed ratio	NS	676	72	10.7
124	Qiu	2013	China	Ningxia Hui, China	WPRO	East Asia & Pacific	LMIC	Mixed	NA	May - Dec 2010	NA	Cross-sectional	Multistage cluster random	MIR-Medical International Research	40+	Fixed ratio	NS	4055	360	8.9
125	Renwick	1996	UK	Manchester, UK	EURO	Europe	HIC	Urban	NA	Jan 1992-Feb 1994	NA	Postal survey	Random	Standard questionnaire & spirometry	45-86	Fixed ratio	NS	246	65	26.4
126	Roche	2008	France	France	EURO	Europe	HIC	Urban	NA	2007	NA	Cross-sectional	Random	ECRHS	45+	Fixed ratio	PostBD	4335	325	7.5
127	Runarsson	2013	Iceland	Reykjavik, Iceland	EURO	Europe	HIC	Urban	NA	2013	AGES-Reykjavik Study	Cohort	Random	Standard questionnaire & spirometry	66-92	Fixed ratio	NS	495	99	20
																LLN	NS	495	99	20
128	Schirnhofer	2007	Austria	Salzburg, Austria	EURO	Europe	HIC	Urban	NA	2005	The BOLD Study	Cross-sectional	Stratified random	BOLD protocol	40+	Fixed ratio	NS	1258	328	26.1
129	Scholes	2014	UK	England and Wales	EURO	Europe	HIC	Mixed	NA	2012	NA	Cross-sectional	Multistage probability	GOLD protocol	40-95	Fixed ratio	NS	7879	1749	22.2
130	Shahab	2006	UK	England, UK	EURO	Europe	HIC	Mixed	NA	2001	NA	Cross-sectional	Two-staged Random	ATS/ERS protocol	35+	Fixed ratio	NS	8215	1093	13.3
131	Sharifi	2019	Iran	Iran	EMRO	MENA	LMIC	Mixed	NA	2015	NA	Cross-sectional	Stratified cluster sampling	BOLD protocol	18+	Fixed ratio	PostBD	1065	53	5
132	Shin	2004	Korea Rep	Korea Rep	WPRO	East Asia & Pacific	HIC	Urban	NA	2000	NA	Cross-sectional	Stratified cluster sampling	BOLD protocol	18+	LLN	NS	8140	622	7.6
133	Shirtcliffe	2007	New Zealand	Greater Wellington, New Zealand	WPRO	East Asia & Pacific	HIC	Urban	NA	2004	NA	Postal survey	Random	GOLD guidelines	25+	Fixed ratio	PostBD	749	116	15.5
																LLN	PostBD	749	116	15.5
134	Sichletidis	2005	Greece	Northern Greece	EURO	Europe	HIC	Mixed	NA	2000-2001	NA	Cross-sectional	Systematic random	MRC/ERC	21-80	Fixed ratio	NS	6112	341	5.6
135	Sinha	2017	India	Mehrauli Delhi, India	SEARO	South Asia	LMIC	Rural	NA	Jan 2012 - Jun 2013	NA	Cross-sectional	Multistage	International Primary Care Airways Guidelines Questionnaire	30+	Fixed ratio	PostBD	1203	122	10.1
136	Stav	2007	Israel	Israel	EURO	MENA	HIC	Mixed	NA	2007	NA	Cross-sectional	Random	GOLD protocol	45-75	Fixed ratio	PostBD	1058	233	22
137	Takemura	2005	Japan	Sendai City, Japan	WPRO	East Asia & Pacific	HIC	Urban	NA	1997-2001	NA	Cross-sectional	Random	Standard questionnaire & spirometry	30+	Fixed ratio	NS	12760	459	3.6
138	Tan	2009	Canada	Vancouver, Canada	PAHO	North America	HIC	Urban	NA	2007	NA	Cross-sectional	Random	BOLD protocol	40+	Fixed ratio	NS	856	148	17.3

139	Tan	2015	Canada	Vancouver, Canada	PAHO	North America	HIC	Urban	Caucasian	Aug 2005 - May 2009	NA	Cohort	Random	BOLD protocol	40+	LLN	PostBD	4893	545	11.1
140	Terzikhan	2016	Netherlands	Rotterdam, Netherlands	EURO	Europe	HIC	Urban	NA	2009-2014	The Rotterdam Study	Cohort	Random	Std	45+	Fixed ratio	NS	14619	1993	13.63
141	Tilert	2013	USA	USA	PAHO	North America	HIC	Urban	Non-Hispanic White, Non-Hispanic Black and Mexican American	2007-2010	the National Health and Nutrition Examination Survey (NHANES) 2007-2010	Cross-sectional	Random	NHANES III	0-79	Fixed ratio	PostBD	5532	758	13.7
142	Toelle	2013	Australia	Australia	WPRO	East Asia & Pacific	HIC	Mixed	NA	2006	BOLD study	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	3357	487	14.5
143	Tzanakis	2004	Greece	Greece	EURO	Europe	HIC	Urban	NA	Mar - May 2001	NA	Cross-sectional	Stratified random	Standard questionnaire & spirometry	35+	Fixed ratio	PostBD	888	75	8.4
144	Van Durme	2009	Netherlands	Ommoord, Rotterdam	EURO	Europe	HIC	Urban	NA	1989 - 1993	NA	Cohort study	Random	ATS/ERS protocol	55+	Fixed ratio	NS	7983	928	11.6
145	Van Gemert	2015	Uganda	Masindi, Uganda	AFRO	SSA	LMIC	Rural	NA	Apr13 - Aug 14 2012	NA	Cross-sectional	Random	Standard questionnaire & spirometry	30+	Fixed ratio	PostBD	588	95	16.2
146	Vanfleteren	2012	Netherlands	Maastricht, Netherlands	EURO	Europe	HIC	Urban	NA	Oct 2007- Mar 2009	NA	Cross-sectional	Random	BOLD protocol	40+	LLN	PostBD	592	111	18.7
																Fixed ratio	PostBD	592	140	23.7
147	Vaz Fragoso	2010	USA	USA	PAHO	North America	HIC	Urban	NA	1998- 2000	NA	Cross-sectional	Random	NHANES III	40-80	Fixed ratio	NS	3502	947	27
148	Viegi	2000	Italy	Po Delta, Northern Italy	EURO	Europe	HIC	Rural	NA	1989-1991	NA	Cross-sectional	Random	Standard questionnaire & spirometry	25+	Fixed ratio	NS	1727	315	18.2
149	Waatevik	2013	Norway	Hordaland County, Norway	EURO	Europe	HIC	Mixed	NA	1996-1997	NA	Cohort	Random	Standard questionnaire & spirometry	27-82	Fixed ratio	PostBD	2235	182	8.12
										2003-2005	NA	Cohort	Random	Standard questionnaire & spirometry	35-90	Fixed ratio	PostBD	1664	234	13.7
										2003-2005	NA	Cohort	Random	Standard questionnaire & spirometry	35-90	LLN	PostBD	1664	141	8.5
150	Waked	2011	Lebanon	Lebanon	EMRO	MENA	LMIC	Mixed	NA	Oct 2009 - Sept 2010	NA	Cross-sectional	Multistage d cluster	ATS/MRC protocol	40+	LLN	PostBD	2201	284	12.5
151	Wang	2005	China	Shaoguan, Guangdong province	WPRO	East Asia & Pacific	LMIC	Rural	NA	2004	NA	Cross-sectional	Random	Standard questionnaire & spirometry	40+	Fixed ratio	NS	1468	176	12
152	Wang	2018	China	China	WPRO	East Asia & Pacific	LMIC	Mixed	NA	2010	NA	Cross-sectional	Multistage stratified cluster	GOLD protocol	20+	Fixed ratio	PostBD	50991	4385	8.6

153	Weiss	2014	Austria	Salzburg, Austria	EURO	Europe	HIC	Mixed	NA	Sept - Dec 2017	NA	Cross-sectional	Random	Standard questionnaire & spirometry	40+	Fixed ratio	PostBD	775	58	16.6
154	Woldeamanuel	2019	Ethiopia	Abeshge district, Southern Ethiopia	AFRO	SSA	LMIC	Rural	NA	Feb-May 2019	NA	Cross-sectional	Multistage cluster	Standard questionnaire & spirometry	30-75	Fixed ratio	PostBD	734	131	17.8
155	Yao	2005	China	Yanqing, Beijing	WPRO	East Asia & Pacific	LMIC	Rural	NA	2005	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	NS	1624	148	9.11
156	Yin	2007	China	Southern China	WPRO	East Asia & Pacific	LMIC	Urban	NA	2003- 2006	NA	Cross-sectional	Random	Standard questionnaire & spirometry	50+	Fixed ratio	NS	8568	771	8.9
157	Yoo	2011	Korea Rep	Korea	WPRO	East Asia & Pacific	HIC	Mixed	NA	2008	KNHANES IV	Cross-sectional	Stratified random	ATS/ERS protocol	19+	Fixed ratio	NS	2501	335	13.4
158	Yoshikawa	2017	Japan	Fujiwara-kyo, Japan	WPRO	East Asia & Pacific	HIC	Rural	NA	2012-2013	NA	Cohort study	Random	Standard questionnaire & spirometry	65+	Fixed ratio	NS	2862	483	16.9
159	Zachariades	2012	Cyprus	Greek-Cypriots, Cyprus	EURO	Europe	HIC	Mixed	NA	2011	NA	Cross-sectional	Random	BOLD protocol	35-88	Fixed ratio	PostBD	1233	60	4.9
160	Zha	2019	China	Anhui Province, China	WPRO	East Asia & Pacific	LMIC	Mixed	NA	Jan 2015 - Jun 2015	NA	Cross-sectional	Complex, multistage probability	GOLD protocol	40+	Fixed ratio	PostBD	2770	272	9.8
161	Zhong	2007	China	China	WPRO	East Asia & Pacific	LMIC	Mixed	NA	2003	NA	Cross-sectional	Multistage cluster random	ATS/ GOLD protocol	40+	Fixed ratio	PostBD	20245	1668	8.2
162	Zhou	2009	China	Beijing, Tianjin, Liaoning, Shanghai, Guangdong, Shaanxi and Chongqing	WPRO	East Asia & Pacific	LMIC	Mixed	NA	Sept 2002 - Sept 2004	NA	Cross-sectional	Random	GOLD protocol	40+	Fixed ratio	PostBD	12471	462	3.7

Note: Table contains study characteristics and prevalence rates for the general population in each study, and sorted by country, investigation period, and diagnostic criterion where appropriate. Refer to Appendix 4 for matching full citation of articles retained.

AFRO=African Regional Office; ATS=American Thoracic Society; BOLD=Burden of Obstructive Lung Disease; DLD=Division of Lung Disease; ECRHS=European Community Respiratory Health Survey; EMRO= Eastern Mediterranean Regional Office; EURO=European Regional Office; EPI-SCAN=Epidemiological study of COPD in Spain; ERS=European Respiratory Society; GOLD=Global Initiative for Chronic Obstructive Lung Disease; HIC=High-Income Country; IBERPOC=Epidemiologic, multicenter, population-based study conducted in seven are as of Spain; KNHANES=Korea National Health and Nutritional Examination Surveys; LLN=lower limit of normal; LMIC=Low- and Middle Income Country; MENA=Middle East and North Africa; MRC=Medical Research Council; NA=not available; NHANES=National Health and Nutritional Examination Surveys; OLIN=Obstructive Lung Disease in Northern Sweden; PLATINO=Prevalence survey of chronic obstructive pulmonary disease in major Latin American cities; PostBD= Post-bronchodilatory; PREPOCOL=Prevalence of COPD in five Colombian cities; SEARO=South East Asia Regional Office; SSA=sub-Saharan Africa; WPRO=Western Pacific Regional Office.

Table S4. The number of people aged 30-79 years in World Bank income and World Health Organization combined regions in 2019, by age group

Age group	Number of population					
	AFR	AMR	SEAR	EUR	EMR	WPR
HICs						
30-34 years	NA	31.0	NA	32.4	7.5	15.0
35-39 years	NA	29.2	NA	34.0	6.7	16.7
40-44 years	NA	27.6	NA	34.6	6.0	17.5
45-49 years	NA	26.8	NA	35.5	4.7	19.2
50-54 years	NA	26.9	NA	36.5	3.2	17.7
55-59 years	NA	28.0	NA	35.7	2.3	16.9
60-64 years	NA	26.4	NA	32.3	1.4	15.7
65-69 years	NA	22.7	NA	28.6	0.8	14.8
70-74 years	NA	18.3	NA	25.5	0.5	13.9
75-79 years	NA	12.5	NA	19.2	0.3	10.4
Overall (30-79 years)	NA	249.5	NA	314.4	33.3	157.7
LMICs						
30-34 years	73.5	45.0	158.4	34.8	51.1	150.5
35-39 years	62.2	42.9	149.8	32.4	44.9	120.3
40-44 years	50.6	38.8	133.6	29.6	37.2	113.2
45-49 years	40.7	34.9	119.8	27.3	30.5	135.1
50-54 years	32.2	31.7	105.4	24.4	26.1	136.8
55-59 years	25.7	27.9	89.5	25.8	21.6	110.3
60-64 years	19.9	22.5	72.8	23.7	17.2	86.8
65-69 years	14.6	17.7	54.6	19.8	12.5	80.7
70-74 years	9.8	12.5	35.8	12.9	8.6	49.0
75-79 years	5.9	8.6	22.9	8.3	5.5	29.0
Overall (30-79 years)	334.9	282.4	942.6	239.1	255.2	1011.9
Worldwide						
30-34 years	73.5	76.0	158.4	67.3	58.6	165.5
35-39 years	62.2	72.1	149.8	66.4	51.7	137.0
40-44 years	50.6	66.4	133.6	64.3	43.1	130.7
45-49 years	40.7	61.7	119.8	62.7	35.2	154.2
50-54 years	32.2	58.6	105.4	61.0	29.4	154.6
55-59 years	25.7	55.9	89.5	61.6	23.9	127.3
60-64 years	19.9	48.9	72.8	56.1	18.6	102.6
65-69 years	14.6	40.4	54.6	48.4	13.3	95.5
70-74 years	9.8	30.8	35.8	38.4	9.1	62.8
75-79 years	5.9	21.1	22.9	27.4	5.8	39.4
Overall (30-79 years)	334.9	531.9	942.6	553.6	288.6	1169.5

Table S5. Estimated number of people with GOLD-COPD in World Bank income and World Health Organization combined regions in 2019, by age group

Age group	People living with COPD in 2019 (million)					
	AFR	AMR	SEAR	EUR	EMR	WPR
HICs						
30-34 years	NA	0.9 (0.8-1.1)	NA	1.3 (1.1-1.6)	0.3 (0.2-0.4)	0.6 (0.5-0.7)
35-39 years	NA	1.1 (0.9-1.3)	NA	1.7 (1.4-2.1)	0.3 (0.3-0.4)	0.8 (0.7-1.0)
40-44 years	NA	1.3 (1.1-1.5)	NA	2.2 (1.8-2.6)	0.4 (0.3-0.4)	1.1 (0.9-1.3)
45-49 years	NA	1.6 (1.3-1.8)	NA	2.8 (2.4-3.3)	0.4 (0.3-0.4)	1.5 (1.2-1.7)
50-54 years	NA	1.9 (1.7-2.3)	NA	3.6 (3.0-4.2)	0.3 (0.3-0.4)	1.7 (1.4-1.9)
55-59 years	NA	2.5 (2.1-2.9)	NA	4.3 (3.7-5.0)	0.3 (0.2-0.3)	2.0 (1.7-2.3)
60-64 years	NA	2.9 (2.5-3.3)	NA	4.7 (4.1-5.5)	0.2 (0.2-0.2)	2.2 (1.9-2.5)
65-69 years	NA	3.0 (2.6-3.4)	NA	5.1 (4.4-5.8)	0.1 (0.1-0.2)	2.5 (2.2-2.8)
70-74 years	NA	2.9 (2.6-3.3)	NA	5.4 (4.8-6.1)	0.1 (0.1-0.1)	2.8 (2.5-3.1)
75-79 years	NA	2.4 (2.1-2.7)	NA	4.8 (4.3-5.4)	0.1 (0.1-0.1)	2.4 (2.2-2.7)
Overall (30-79 years)	NA	20.5 (17.7-23.7)	NA	36.0 (31.0-41.6)	2.4 (2.1-2.9)	17.5 (15.2-20.1)
LMICs						
30-34 years	2.4 (1.8-3.3)	0.8 (0.6-1.0)	6.1 (4.5-8.4)	0.9 (0.6-1.2)	1.5 (1.1-2.1)	5.3 (3.9-7.3)
35-39 years	2.8 (2.1-3.7)	1.0 (0.7-1.3)	7.8 (5.8-10.5)	1.1 (0.8-1.5)	1.8 (1.3-2.4)	5.7 (4.3-7.7)
40-44 years	3.0 (2.3-4.0)	1.2 (0.9-1.6)	9.2 (6.9-12.3)	1.3 (1.0-1.7)	2.0 (1.5-2.6)	7.2 (5.4-9.6)
45-49 years	3.2 (2.4-4.2)	1.4 (1.1-1.9)	11.0 (8.3-14.4)	1.6 (1.2-2.1)	2.2 (1.6-2.8)	11.4 (8.7-15.0)
50-54 years	3.4 (2.6-4.3)	1.7 (1.3-2.2)	12.7 (9.8-16.4)	1.9 (1.4-2.4)	2.4 (1.9-3.1)	15.2 (11.6-19.6)
55-59 years	3.5 (2.7-4.4)	2.0 (1.5-2.5)	14.1 (11.0-17.8)	2.6 (2.0-3.3)	2.6 (2.0-3.3)	15.9 (12.4-20.3)
60-64 years	3.4 (2.7-4.3)	2.1 (1.6-2.6)	14.7 (11.6-18.3)	3.0 (2.4-3.8)	2.7 (2.1-3.3)	16.1 (12.7-20.0)
65-69 years	3.2 (2.6-3.9)	2.1 (1.7-2.6)	13.9 (11.2-17.0)	3.2 (2.5-3.9)	2.5 (2.0-3.0)	18.7 (15.1-22.9)
70-74 years	2.7 (2.2-3.2)	1.9 (1.5-2.3)	11.2 (9.2-13.3)	2.6 (2.1-3.1)	2.1 (1.7-2.5)	13.9 (11.4-16.7)
75-79 years	1.9 (1.6-2.3)	1.6 (1.3-1.9)	8.7 (7.2-10.1)	2.0 (1.7-2.4)	1.6 (1.4-1.9)	10.0 (8.3-11.6)
Overall (30-79 years)	29.6 (22.9-37.8)	15.7 (12.2-20)	109.3 (85.5-138.5)	20.1 (15.7-25.5)	21.3 (16.6-27.1)	119.5 (93.8-150.7)
Worldwide						
30-34 years	2.4 (1.8-3.3)	1.7 (1.3-2.2)	6.1 (4.5-8.4)	2.2 (1.7-2.8)	1.8 (1.4-2.4)	5.9 (4.4-8.0)

Age group	People living with COPD in 2019 (million)					
	AFR	AMR	SEAR	EUR	EMR	WPR
35-39 years	2.8 (2.1-3.7)	2.1 (1.6-2.6)	7.8 (5.8-10.5)	2.8 (2.2-3.5)	2.1 (1.6-2.8)	6.6 (4.9-8.7)
40-44 years	3.0 (2.3-4.0)	2.5 (2.0-3.1)	9.2 (6.9-12.3)	3.5 (2.8-4.4)	2.3 (1.8-3.1)	8.3 (6.3-10.9)
45-49 years	3.2 (2.4-4.2)	3.0 (2.4-3.7)	11.0 (8.3-14.4)	4.4 (3.6-5.4)	2.5 (1.9-3.3)	12.9 (9.9-16.7)
50-54 years	3.4 (2.6-4.3)	3.7 (3.0-4.5)	12.7 (9.8-16.4)	5.4 (4.5-6.6)	2.7 (2.1-3.5)	16.8 (13.1-21.5)
55-59 years	3.5 (2.7-4.4)	4.5 (3.7-5.4)	14.1 (11.0-17.8)	6.9 (5.7-8.3)	2.9 (2.3-3.6)	17.9 (14.1-22.5)
60-64 years	3.4 (2.7-4.3)	5.0 (4.1-6.0)	14.7 (11.6-18.3)	7.8 (6.5-9.3)	2.9 (2.3-3.6)	18.3 (14.6-22.6)
65-69 years	3.2 (2.6-3.9)	5.1 (4.3-6.0)	13.9 (11.2-17.0)	8.3 (7.0-9.7)	2.6 (2.1-3.2)	21.2 (17.3-25.7)
70-74 years	2.7 (2.2-3.2)	4.8 (4.1-5.6)	11.2 (9.2-13.3)	8.0 (6.9-9.3)	2.2 (1.8-2.6)	16.7 (13.9-19.8)
75-79 years	1.9 (1.6-2.3)	4.0 (3.4-4.6)	8.7 (7.2-10.1)	6.9 (6.0-7.8)	1.7 (1.4-2.0)	12.4 (10.5-14.3)
Overall (30-79 years)	29.6 (22.9-37.8)	36.2 (29.9-43.7)	109.3 (85.5-138.5)	56.1 (46.7-67.1)	23.7 (18.7-30.0)	137.0 (109.0-170.8)

Note: HICs=high-income countries; LMICs= low-income and middle-income countries; AFR= African Region; AMR= Region of the Americas; SEAR= South-East Asia Region; EUR= European Region; EMR= Eastern Mediterranean Region; WPR= Western Pacific Region; NA= not available.

Table S6. Estimated prevalence of GOLD-COPD people aged 30-79 years in World Bank income and World Health Organization combined regions in 2019, by age group

Age group	Prevalence of COPD in 2019 (%)					
	AFR	AMR	SEAR	EUR	EMR	WPR
HICs						
30-34 years	NA	3.0 (2.5-3.6)	NA	4.1 (3.3-4.9)	4.0 (3.3-4.8)	3.9 (3.3-4.8)
35-39 years	NA	3.7 (3.1-4.5)	NA	5.1 (4.2-6.1)	4.9 (4.1-5.9)	4.9 (4.1-5.9)
40-44 years	NA	4.7 (3.9-5.6)	NA	6.3 (5.3-7.6)	6.2 (5.2-7.4)	6.1 (5.1-7.3)
45-49 years	NA	5.8 (4.9-6.9)	NA	7.9 (6.6-9.4)	7.8 (6.6-9.2)	7.6 (6.4-9.0)
50-54 years	NA	7.2 (6.2-8.5)	NA	9.7 (8.3-11.4)	9.7 (8.3-11.3)	9.4 (8.0-11.0)
55-59 years	NA	8.9 (7.7-10.4)	NA	12.0 (10.3-13.9)	12.0 (10.3-13.8)	11.6 (10.0-13.4)
60-64 years	NA	10.9 (9.4-12.6)	NA	14.6 (12.6-16.9)	14.4 (12.5-16.5)	14.1 (12.3-16.2)
65-69 years	NA	13.3 (11.6-15.1)	NA	17.7 (15.4-20.2)	16.4 (14.4-18.6)	16.9 (14.9-19.2)
70-74 years	NA	16.0 (14.1-18.1)	NA	21.3 (18.7-24.0)	19.0 (16.8-21.3)	20.1 (17.8-22.6)
75-79 years	NA	19.1 (17.0-21.3)	NA	25.3 (22.4-28.1)	22.5 (20.1-24.9)	23.4 (20.9-26.0)
Overall (30-79 years)	NA	8.2 (7.1-9.5)	NA	11.4 (9.8-13.2)	7.3 (6.2-8.6)	11.1 (9.6-12.7)
LMICs						
30-34 years	3.3 (2.4-4.5)	1.7 (1.2-2.3)	3.9 (2.8-5.3)	2.5 (1.8-3.4)	3.0 (2.2-4.0)	3.6 (2.6-4.9)
35-39 years	4.5 (3.3-6.0)	2.3 (1.7-3.1)	5.2 (3.9-7.0)	3.3 (2.5-4.5)	4.0 (2.9-5.4)	4.8 (3.5-6.4)
40-44 years	6.0 (4.5-8.0)	3.0 (2.3-4.1)	6.9 (5.2-9.2)	4.4 (3.3-5.9)	5.3 (4.0-7.1)	6.4 (4.8-8.5)
45-49 years	7.9 (6.0-10.4)	4.1 (3.1-5.4)	9.2 (7.0-12)	5.9 (4.4-7.7)	7.0 (5.4-9.3)	8.5 (6.4-11.1)
50-54 years	10.4 (8.0-13.5)	5.4 (4.1-7.0)	12.1 (9.3-15.6)	7.7 (5.9-10.0)	9.3 (7.1-12.0)	11.1 (8.5-14.3)
55-59 years	13.5 (10.5-17.2)	7.1 (5.5-9.1)	15.7 (12.2-19.9)	10.0 (7.7-12.8)	12.1 (9.4-15.4)	14.4 (11.2-18.4)
60-64 years	17.3 (13.7-21.7)	9.2 (7.2-11.7)	20.2 (15.9-25.1)	12.8 (10.0-16.1)	15.5 (12.3-19.4)	18.5 (14.6-23.1)
65-69 years	21.9 (17.6-26.9)	11.8 (9.4-14.7)	25.5 (20.5-31.1)	16.1 (12.8-19.9)	19.6 (15.8-24.0)	23.2 (18.7-28.4)
70-74 years	27.2 (22.2-32.6)	15.0 (12.0-18.3)	31.3 (25.6-37.3)	20.0 (16.2-24.3)	24.4 (20.0-29.1)	28.5 (23.3-34.0)
75-79 years	33.1 (27.5-38.8)	18.7 (15.3-22.4)	37.8 (31.6-44.1)	24.4 (20.0-29.1)	29.7 (24.8-34.6)	34.3 (28.6-40.0)
Overall (30-79 years)	8.8 (6.8-11.3)	5.5 (4.3-7.1)	11.6 (9.1-14.7)	8.4 (6.6-10.7)	8.3 (6.5-10.6)	11.8 (9.3-14.9)
Worldwide						
30-34 years	3.3 (2.4-4.5)	2.2 (1.7-2.8)	3.9 (2.8-5.3)	3.2 (2.5-4.1)	3.1 (2.3-4.1)	3.6 (2.7-4.8)

Age group	Prevalence of COPD in 2019 (%)					
	AFR	AMR	SEAR	EUR	EMR	WPR
35-39 years	4.5 (3.3-6.0)	2.9 (2.3-3.6)	5.2 (3.9-7.0)	4.2 (3.4-5.3)	4.1 (3.1-5.4)	4.8 (3.6-6.4)
40-44 years	6.0 (4.5-8.0)	3.7 (3.0-4.7)	6.9 (5.2-9.2)	5.5 (4.4-6.8)	5.4 (4.2-7.1)	6.3 (4.8-8.3)
45-49 years	7.9 (6.0-10.4)	4.8 (3.9-6.0)	9.2 (7.0-12.0)	7.0 (5.7-8.6)	7.2 (5.5-9.2)	8.3 (6.4-10.8)
50-54 years	10.4 (8.0-13.5)	6.2 (5.1-7.7)	12.1 (9.3-15.6)	8.9 (7.3-10.9)	9.3 (7.2-11.9)	10.9 (8.5-13.9)
55-59 years	13.5 (10.5-17.2)	8.0 (6.6-9.7)	15.7 (12.2-19.9)	11.1 (9.2-13.5)	12.1 (9.5-15.2)	14.1 (11.1-17.7)
60-64 years	17.3 (13.7-21.7)	10.1 (8.4-12.2)	20.2 (15.9-25.1)	13.9 (11.5-16.5)	15.5 (12.3-19.2)	17.8 (14.3-22.0)
65-69 years	21.9 (17.6-26.9)	12.7 (10.6-15.0)	25.5 (20.5-31.1)	17.1 (14.4-20.1)	19.4 (15.7-23.6)	22.3 (18.1-26.9)
70-74 years	27.2 (22.2-32.6)	15.6 (13.3-18.2)	31.3 (25.6-37.3)	20.9 (17.9-24.1)	24.1 (19.8-28.7)	26.6 (22.1-31.5)
75-79 years	33.1 (27.5-38.8)	19.0 (16.3-21.7)	37.8 (31.6-44.1)	25.0 (21.7-28.4)	29.3 (24.5-34.1)	31.4 (26.6-36.3)
Overall (30-79 years)	8.8 (6.8-11.3)	6.8 (5.6-8.2)	11.6 (9.1-14.7)	10.1 (8.4-12.1)	8.2 (6.5-10.4)	11.7 (9.3-14.6)

Note: HICs=high-income countries; LMICs= low-income and middle-income countries; AFR= African Region; AMR= Region of the Americas; SEAR= South-East Asia Region; EUR= European Region; EMR= Eastern Mediterranean Region; WPR= Western Pacific Region; NA= not available.

Table S7. Studies investigating risk factors of COPD using multivariable analysis with reported odds ratio and 95% confidence intervals, CI

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	10 yr inc pack yrs	1.25	1.19	1.30
Buist	2007	2005	Germany	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.38	1.14	1.67
Buist	2007	2005	China	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.29	1.06	1.56
Buist	2007	2005	Canada	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.12	0.99	1.28
Buist	2007	2005	Norway	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.17	0.94	1.47
Buist	2007	2005	Iceland	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.15	0.94	1.40
Buist	2007	2005	Turkey	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.13	1.03	1.24
Buist	2007	2005	Austria	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.21	1.10	1.34
Buist	2007	2005	Australia	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.19	1.03	1.37
Buist	2007	2005	Poland	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.14	1.00	1.30
Buist	2007	2005	Phillipines	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.05	0.90	1.23
Buist	2007	2005	USA	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.13	0.99	1.29
Buist	2007	2005	South Africa	HIC	North America	Mixed	Fixed Ratio	53.8	10 yr inc pack yrs	1.15	1.00	1.32

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	10 yr inc pack yrs	1.25	1.09	1.44
Danielsson	2012	2007	Sweden	HIC	Europe	Urban	Fixed Ratio	58.9	10 yr inc pack yrs	1.33	1.08	1.63
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	10 yr inc pack yrs	1.11	0.99	1.25
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	10 yr inc pack yrs	1.28	0.79	2.07
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	10 yr inc pack yrs	1.88	1.23	2.89
Hvidsten	2010	1999	Norway	HIC	Europe	Mixed	Fixed Ratio	60.8	10 yr inc pack yrs	1.17	0.98	1.40
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	10 yr inc pack yrs	1.35	0.65	2.77
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	10 yr inc pack yrs	2.51	1.65	3.80
Kim	2005	2002	South Korea	HIC	East Asia & Pacific	Mixed	Fixed Ratio	62.5	10 yr inc pack yrs	1.96	1.32	2.90
Kotaniemi	2005	2004	Finland	HIC	Europe	Rural	Fixed Ratio	47.9	10 yr inc pack yrs	1.06	1.05	1.08
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	10 yr inc pack yrs	1.60	1.30	2.00
Melville	2010	2004	UK	HIC	Europe	Urban	Fixed Ratio	59.0	10 yr inc pack yrs	1.30	1.20	1.50
Miravitlles	2009	2007	Spain	HIC	Europe	Mixed	Fixed Ratio	56.6	10 yr inc pack yrs	2.60	1.86	3.70
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	10 yr inc pack yrs	2.84	1.30	6.23

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	10 yr inc pack yrs	1.85	1.12	3.06
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	20+ pack yrs	1.02	1.02	1.04
Fukuchi	2004	2000	Japan	HIC	East Asia & Pacific	Mixed	Fixed Ratio	58.0	20+ pack yrs	1.92	1.31	2.75
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	20+ pack yrs	2.88	1.84	4.50
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	20+ pack yrs	3.83	2.49	5.89
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	20+ pack yrs	3.64	2.30	5.76
Kainu	2013	2002	Finland	HIC	Europe	Urban	Fixed Ratio	49.1	20+ pack yrs	5.09	1.46	17.71
Kim	2005	2002	South Korea	HIC	East Asia & Pacific	Mixed	Fixed Ratio	62.5	20+ pack yrs	5.74	4.24	7.76
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	20+ pack yrs	4.81	2.96	7.83
Mascarenhas	2011	2003	Portugal	HIC	Europe	Urban	Fixed Ratio	58.5	20+ pack yrs	3.72	1.24	11.16
Miravitlles	2009	2007	Spain	HIC	Europe	Mixed	Fixed Ratio	56.6	20+ pack yrs	5.10	3.69	7.10
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	20+ pack yrs	6.70	3.35	13.40
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	20+ pack yrs	2.52	1.53	4.14
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	20+ pack yrs	4.20	2.60	6.70
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	20+ pack yrs	2.70	1.50	4.90
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	20+ pack yrs	2.17	1.81	2.60
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	20+ pack yrs	1.78	1.44	2.19

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Age 10 yr inc	2.20	1.60	3.00
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Age 10 yr inc	1.16	0.75	1.79
Andreeva	2016	2013	Russia	LMIC	Europe	Urban	Fixed Ratio	54.0	Age 10 yr inc	1.07	1.05	1.10
Bakke	1991	1990	Norway	HIC	Europe	Mixed	Fixed Ratio	42.0	Age 10 yr inc	4.90	1.40	17.60
Borlee	2017	2017	Netherlands	HIC	Europe	Urban	Fixed Ratio	62.1	Age 10 yr inc	1.49	1.43	1.56
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Age 10 yr inc	1.62	1.05	2.51
Buist	2007	2005	Germany	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	2.54	1.74	3.71
Buist	2007	2005	China	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	2.78	1.71	4.51
Buist	2007	2005	Canada	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	2.25	1.58	3.20
Buist	2007	2005	Norway	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	1.49	1.07	2.08
Buist	2007	2005	Iceland	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	1.98	1.35	2.91
Buist	2007	2005	Turkey	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	1.57	1.11	2.21
Buist	2007	2005	Austria	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	1.94	1.51	2.49
Buist	2007	2005	Australia	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	2.36	1.44	3.86
Buist	2007	2005	Poland	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	2.60	1.66	4.09
Buist	2007	2005	Philippines	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	1.82	1.41	2.33
Buist	2007	2005	South Africa	HIC	North America	Mixed	Fixed Ratio	53.8	Age 10 yr inc	1.35	0.98	1.85

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Danielsson	2012	2007	Sweden	HIC	Europe	Urban	Fixed Ratio	58.9	Age 10 yr inc	2.08	1.62	2.68
Ding	2018	2014	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	67.3	Age 10 yr inc	1.09	1.07	1.12
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Age 10 yr inc	11.24	7.35	17.24
Ford	2010	2010	USA	HIC	North America	Urban	Fixed Ratio	44.8	Age 10 yr inc	1.08	1.07	1.09
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Age 10 yr inc	1.76	1.47	2.11
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Age 10 yr inc	2.81	1.82	4.37
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Age 10 yr inc	1.93	1.71	2.17
Jiang	2007	2006	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	59.5	Age 10 yr inc	1.85	1.17	2.53
Kainu	2013	2002	Finland	HIC	Europe	Urban	Fixed Ratio	49.1	Age 10 yr inc	7.00	0.88	55.83
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Age 10 yr inc	3.10	1.90	5.20
Kotaniemi	2005	2004	Finland	HIC	Europe	Rural	Fixed Ratio	47.9	Age 10 yr inc	1.13	1.09	1.17
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	Age 10 yr inc	2.10	1.40	2.60
Ling	2011	2010	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	49.5	Age 10 yr inc	3.41	1.62	7.18
Magitta	2018	2018	Tanzania	LMIC	SSA	Rural	Fixed Ratio	51.8	Age 10 yr inc	4.78	1.34	17.10
Martinez	1994	2012	USA	HIC	North America	Mixed	Fixed Ratio	56.1	Age 10 yr inc	1.05	1.03	1.07
Martinez	2015	2012	USA	HIC	North America	Mixed	Fixed Ratio	55.6	Age 10 yr inc	1.06	1.04	1.08
Melville	2010	2004	UK	HIC	Europe	Urban	Fixed Ratio	59.0	Age 10 yr inc	1.60	1.20	2.90

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Age 10 yr inc	1.94	1.40	2.69
Minas	2010	2008	Greece	HIC	Europe	Rural	Fixed Ratio	63.9	Age 10 yr inc	1.06	1.04	1.07
Miravitlles	2009	2007	Spain	HIC	Europe	Mixed	Fixed Ratio	56.6	Age 10 yr inc	1.70	1.10	2.50
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Age 10 yr inc	2.32	1.22	4.60
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	Age 10 yr inc	1.00	0.99	1.01
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Age 10 yr inc	1.02	1.00	1.05
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	Age 10 yr inc	4.06	2.11	7.79
Sichletidis	2005	2001	Greece	HIC	Europe	Mixed	Fixed Ratio	52.7	Age 10 yr inc	5.42	3.04	9.67
Woldeamanuel	2019	2019	Ethiopia	LMIC	SSA	Rural	Fixed Ratio	39.2	Age 10 yr inc	1.75	1.14	2.70
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Age 10 yr inc	1.06	1.04	1.08
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Age 50-59	2.09	1.34	3.25
Brostrom	2018	2009	Estonia	HIC	Europe	Urban	LLN	61.0	Age 50-59	1.76	1.29	1.54
Brostrom	2018	2005	Iceland	HIC	Europe	Urban	LLN	56.4	Age 50-59	1.54	1.25	1.89
Brostrom	2018	2007	Sweden	HIC	Europe	Urban	LLN	58.8	Age 50-59	1.93	1.42	2.64
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	Age 50-59	1.32	0.63	2.80
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Age 50-59	2.09	0.77	5.68
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Age 50-59	3.05	0.50	18.55

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Deveci	2011	2007	Turkey	LMIC	Europe	Mixed	Fixed Ratio	37.7	Age 50-59	8.93	1.34	4.99
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Age 50-59	3.83	2.51	5.85
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Age 50-59	1.06	1.05	1.07
Fukuchi	2004	2000	Japan	HIC	East Asia & Pacific	Mixed	Fixed Ratio	58.0	Age 50-59	1.56	0.81	1.99
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Age 50-59	1.69	0.78	3.68
Hagstad	2015	2006	Sweden	HIC	Europe	Urban	Fixed Ratio	48.4	Age 50-59	2.22	0.95	5.18
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Age 50-59	1.32	0.90	2.10
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Age 50-59	2.63	1.67	4.14
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Age 50-59	3.25	1.83	5.79
Jordan	2012	1998	UK	HIC	Europe	Mixed	Fixed Ratio	58.1	Age 50-59	1.74	1.53	1.98
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	Age 50-59	3.40	2.10	5.51
Lindberg	2006	1996	Sweden	HIC	Europe	Rural	Fixed Ratio	49.1	Age 50-59	2.35	0.94	5.92
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Age 50-59	1.72	1.15	2.55
Magitta	2018	2018	Tanzania	LMIC	SSA	Rural	Fixed Ratio	51.8	Age 50-59	9.85	5.19	18.71
Ornek	2015	2005	Turkey	LMIC	Europe	Rural	Fixed Ratio	49.2	Age 50-59	1.17	0.99	1.35
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Age 50-59	2.40	1.30	4.20
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Age 50-59	2.21	1.99	2.46

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Age 50-59	2.01	1.64	2.48
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Age 50-59	2.04	1.41	2.95
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Age 60+	4.14	2.31	7.43
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Age 60+	4.56	2.48	8.39
Bakke	1991	1990	Norway	HIC	Europe	Mixed	Fixed Ratio	42.0	Age 60+	23.70	6.90	81.30
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Age 60+	2.76	1.55	4.91
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	Age 60+	3.33	1.55	7.13
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Age 60+	2.47	0.78	7.85
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Age 60+	3.61	0.51	25.36
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Age 60+	7.09	4.69	10.75
Fukuchi	2004	2000	Japan	HIC	East Asia & Pacific	Mixed	Fixed Ratio	58.0	Age 60+	3.72	2.33	4.59
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Age 60+	5.56	2.53	12.21
Hagstad	2015	2006	Sweden	HIC	Europe	Urban	Fixed Ratio	48.4	Age 60+	8.40	3.70	19.10
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Age 60+	4.14	2.50	6.90
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Age 60+	5.87	3.76	9.17
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Age 60+	5.72	3.69	8.87
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Age 60+	7.32	4.07	13.15

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Jordan	2012	1998	UK	HIC	Europe	Mixed	Fixed Ratio	58.1	Age 60+	2.72	2.40	3.09
Kainu	2013	2002	Finland	HIC	Europe	Urban	Fixed Ratio	49.1	Age 60+	12.47	1.54	100.71
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Age 60+	6.60	4.00	10.90
Kim	2005	2002	South Korea	HIC	East Asia & Pacific	Mixed	Fixed Ratio	62.5	Age 60+	4.67	3.54	6.17
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	Age 60+	9.05	5.74	14.27
Lindberg	2006	1996	Sweden	HIC	Europe	Rural	Fixed Ratio	49.1	Age 60+	5.84	2.46	13.87
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Age 60+	3.97	2.14	7.33
Magitta	2018	2018	Tanzania	LMIC	SSA	Rural	Fixed Ratio	51.8	Age 60+	3.13	1.74	5.61
Martinez-Perez	2016	2014	Spain	HIC	Europe	Rural	Fixed Ratio	59.0	Age 60+	4.65	1.96	11.03
Mascarenhas	2011	2003	Portugal	HIC	Europe	Urban	Fixed Ratio	58.5	Age 60+	2.98	1.42	6.29
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Age 60+	3.08	2.22	4.27
Miravitlles	2009	2007	Spain	HIC	Europe	Mixed	Fixed Ratio	56.6	Age 60+	4.00	2.70	5.80
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Age 60+	9.56	3.12	60.90
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Age 60+	3.56	1.80	7.28
Ornek	2015	2005	Turkey	LMIC	Europe	Rural	Fixed Ratio	49.2	Age 60+	1.38	1.12	1.64
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Age 60+	2.83	0.94	8.56
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	Age 60+	4.78	2.38	9.57

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Sharifi	2019	2017	Iran	LMIC	MENA	Mixed	Fixed Ratio	40.0	Age 60+	1.47	0.66	3.28
Sichletidis	2005	2001	Greece	HIC	Europe	Mixed	Fixed Ratio	52.7	Age 60+	18.00	10.41	31.11
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Age 60+	8.20	5.27	12.75
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Age 60+	3.01	1.66	5.46
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Age 60+	3.30	2.20	5.20
Waked	2011	2010	Lebanon	LMIC	MENA	Mixed	LLN	57.1	Age 60+	1.05	1.04	1.06
Woldeamanuel	2019	2019	Ethiopia	LMIC	SSA	Rural	Fixed Ratio	39.2	Age 60+	1.96	1.18	3.25
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Age 60+	1.45	0.88	2.37
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Age 60+	4.97	4.09	6.04
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Age 60+	4.55	3.20	6.47
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Asthma	1.50	1.20	1.90
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Asthma	3.41	2.46	4.72
Borlee	2017	2017	Netherlands	HIC	Europe	Urban	Fixed Ratio	62.1	Asthma	0.94	0.75	1.18
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Asthma	6.70	5.04	8.91
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Asthma	10.62	2.90	38.94
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Asthma	1.04	0.83	1.29
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Asthma	2.96	1.44	6.08

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Renwick	1996	1993	UK	HIC	Europe	Mixed	Fixed Ratio	64.5	Asthma	1.97	0.82	2.21
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Asthma	2.23	1.36	3.66
Zachariades	2012	2012	Cyprus	HIC	Europe	Mixed	Fixed Ratio	54.5	Asthma	2.75	0.67	3.57
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Biomass	1.50	1.20	1.90
Andreeva	2016	2013	Russia	LMIC	Europe	Urban	Fixed Ratio	54.0	Biomass	1.65	0.83	3.30
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	Biomass	0.73	0.38	13.90
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Biomass	1.48	0.37	5.86
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Biomass	1.44	1.19	1.74
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Biomass	1.12	0.90	1.39
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Biomass	0.90	0.30	2.70
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Biomass	0.85	0.27	2.61
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Biomass	1.68	1.25	2.25
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	Biomass	1.50	1.20	2.20
Li	2009	2008	China	LMIC	East Asia & Pacific	Urban	Fixed Ratio	59.5	Biomass	1.98	1.69	3.32
Ling	2011	2010	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	49.5	Biomass	1.47	1.02	2.12
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Biomass	1.72	1.25	2.35
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Biomass	1.04	0.78	1.40

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Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Biomass	0.31	0.22	1.48
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Biomass	0.96	0.61	1.53
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Biomass	0.79	0.36	1.60
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Biomass	0.62	0.08	4.97
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Biomass	3.01	2.05	4.39
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Biomass	0.88	0.39	1.96
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Biomass	1.62	1.21	2.18
Woldeamanuel	2019	2019	Ethiopia	LMIC	SSA	Rural	Fixed Ratio	39.2	Biomass	2.23	1.22	4.09
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Biomass	1.05	0.65	1.69
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Biomass	1.35	1.20	1.52
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Biomass	1.39	1.11	1.74
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Biomass	2.83	0.53	3.44
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	BMI <18.5	1.90	1.50	2.40
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	BMI <18.5	9.58	1.02	18.14
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	BMI <18.5	4.67	1.03	21.16
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	BMI <18.5	4.01	1.31	12.19
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	BMI <18.5	1.12	0.93	1.35

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Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	BMI <18.5	2.44	1.31	4.54
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	BMI <18.5	2.13	0.97	4.69
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	BMI <18.5	5.11	2.04	12.83
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	BMI <18.5	1.60	1.00	2.60
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	BMI <18.5	1.30	0.91	1.86
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	BMI <18.5	2.76	2.07	3.68
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	BMI <18.5	2.11	1.34	3.32
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	BMI <18.5	1.92	0.86	4.32
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	BMI <18.5	1.19	0.84	1.67
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	BMI <18.5	0.49	0.08	2.96
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	BMI <18.5	3.70	2.83	4.85
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	BMI <18.5	3.16	2.06	4.86
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	BMI 25/30+	0.70	0.50	1.00
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	BMI 25/30+	0.71	0.48	1.06
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	BMI 25/30+	1.14	0.64	2.05
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	BMI 25/30+	3.23	1.59	6.60
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	BMI 25/30+	0.07	0.28	1.96

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Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	BMI 25/30+	0.17	0.01	2.47
Ding	2018	2014	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	67.3	BMI 25/30+	0.89	0.82	0.96
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	BMI 25/30+	0.83	0.68	1.02
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	BMI 25/30+	0.52	0.41	0.66
Hvidsten	2010	1999	Norway	HIC	Europe	Mixed	Fixed Ratio	60.8	BMI 25/30+	1.43	0.69	2.95
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	BMI 25/30+	0.80	0.60	1.10
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	BMI 25/30+	1.00	0.60	1.20
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	BMI 25/30+	0.39	0.23	0.66
Martinez	1994	2012	USA	HIC	North America	Mixed	Fixed Ratio	56.1	BMI 25/30+	0.81	0.59	1.11
Martinez	2015	2012	USA	HIC	North America	Mixed	Fixed Ratio	55.6	BMI 25/30+	1.22	0.86	1.72
Minas	2010	2008	Greece	HIC	Europe	Rural	Fixed Ratio	63.9	BMI 25/30+	0.96	0.93	0.99
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	BMI 25/30+	1.50	0.91	2.47
Ogata	2018	2012	Japan	HIC	East Asia & Pacific	Rural	Fixed Ratio	55.0	BMI 25/30+	0.66	0.52	0.84
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	BMI 25/30+	1.02	0.96	1.09
Sharifi	2019	2017	Iran	LMIC	MENA	Mixed	Fixed Ratio	40.0	BMI 25/30+	1.53	0.60	3.91
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	BMI 25/30+	0.95	0.92	0.98
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	BMI 25/30+	0.71	0.58	0.88

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Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	BMI 25/30+	0.59	0.35	1.01
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	BMI 25/30+	1.15	0.93	1.42
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	BMI 25/30+	0.85	0.61	1.19
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Child hosp pulm dx	1.58	1.03	2.43
Cabrera Lopez de Marco	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	Child hosp pulm dx	2.30	0.30	13.90
	2004	1992	Europe	HIC	Europe	Mixed	Fixed Ratio	32.0	Child hosp pulm dx	1.71	1.32	2.20
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Child hosp pulm dx	3.08	0.35	27.02
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Child hosp pulm dx	2.09	1.70	2.56
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Child hosp pulm dx	2.08	1.33	3.26
Jiang	2007	2006	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	59.5	Child hosp pulm dx	2.90	1.34	4.45
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Child hosp pulm dx	2.30	1.58	3.34
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Child hosp pulm dx	1.04	0.65	1.66
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Child hosp pulm dx	1.15	0.15	8.68
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Child hosp pulm dx	1.57	0.68	3.62
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Child hosp pulm dx	1.40	1.03	1.88
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Child hosp pulm dx	0.34	0.02	6.43
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Child hosp pulm dx	1.21	1.05	1.40

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Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Child hosp pulm dx	6.11	3.99	9.34
Brostrom	2018	2009	Estonia	HIC	Europe	Urban	LLN	61.0	College or higher	0.43	0.15	1.24
Brostrom	2018	2005	Iceland	HIC	Europe	Urban	LLN	56.4	College or higher	0.48	0.23	1.00
Brostrom	2018	2007	Sweden	HIC	Europe	Urban	LLN	58.8	College or higher	0.59	0.23	1.47
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	College or higher	0.60	0.14	2.55
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	College or higher	0.82	0.43	1.59
Hagstad	2015	2006	Sweden	HIC	Europe	Urban	Fixed Ratio	48.4	College or higher	0.72	0.41	1.24
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	College or higher	1.19	0.85	1.66
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	College or higher	1.41	0.82	2.44
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	College or higher	1.15	0.79	1.67
Hvidsten	2010	1999	Norway	HIC	Europe	Mixed	Fixed Ratio	60.8	College or higher	0.70	0.33	1.48
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	College or higher	0.79	0.50	1.90
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	College or higher	1.49	0.34	6.52
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	College or higher	0.38	0.25	0.55
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	College or higher	0.96	0.52	1.76
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	College or higher	1.14	0.87	1.50
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Current smoker	5.50	4.20	7.20

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Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Current smoker	2.67	1.87	3.83
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Current smoker	5.69	2.80	11.57
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Current smoker	5.46	2.51	11.89
Bakke	1991	1990	Norway	HIC	Europe	Mixed	Fixed Ratio	42.0	Current smoker	8.00	3.20	20.00
Borlee	2017	2017	Netherlands	HIC	Europe	Urban	Fixed Ratio	62.1	Current smoker	0.97	0.86	1.08
Brostrom	2018	2009	Estonia	HIC	Europe	Urban	LLN	61.0	Current smoker	5.22	2.08	13.10
Brostrom	2018	2005	Iceland	HIC	Europe	Urban	LLN	56.4	Current smoker	2.64	1.31	5.33
Brostrom	2018	2007	Sweden	HIC	Europe	Urban	LLN	58.8	Current smoker	4.32	1.74	10.70
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Current smoker	3.30	1.13	8.15
de Marco	2004	1992	Europe	HIC	Europe	Mixed	Fixed Ratio	32.0	Current smoker	4.58	3.62	5.81
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Current smoker	1.87	1.60	2.19
Ford	2010	2010	USA	HIC	North America	Urban	Fixed Ratio	44.8	Current smoker	2.93	2.60	3.30
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Current smoker	2.10	1.15	3.84
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	Current smoker	3.61	2.64	4.94
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Current smoker	14.40	7.50	27.70
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Current smoker	2.19	1.43	3.36
Isoaho	1994	1991	Finland	HIC	Europe	Rural	Fixed Ratio	73.0	Current smoker	6.63	1.64	26.70

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Jiang	2007	2006	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	59.5	Current smoker	3.01	1.45	4.57
Ko	2008	2006	Hong Kong	HIC	East Asia & Pacific	Urban	Fixed Ratio	74.2	Current smoker	2.06	1.10	3.85
Kurth	2019	2012	USA	HIC	North America	Mixed	LLN	48.0	Current smoker	5.61	4.77	6.44
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Current smoker	3.53	2.51	4.97
Martinez	1994	2012	USA	HIC	North America	Mixed	Fixed Ratio	56.1	Current smoker	1.80	1.08	3.03
Martinez	2015	2012	USA	HIC	North America	Mixed	Fixed Ratio	55.6	Current smoker	1.80	1.08	3.03
Mascarenhas	2011	2003	Portugal	HIC	Europe	Urban	Fixed Ratio	58.5	Current smoker	3.50	1.20	10.23
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Current smoker	1.76	1.23	2.52
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Current smoker	3.22	1.53	4.31
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Current smoker	1.89	1.16	3.05
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	Current smoker	1.50	1.03	2.19
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Current smoker	1.55	0.53	4.52
Sharifi	2019	2017	Iran	LMIC	MENA	Mixed	Fixed Ratio	40.0	Current smoker	2.26	0.73	6.99
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Current smoker	19.59	10.49	36.59
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Current smoker	1.73	1.15	2.62
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Current smoker	5.20	3.30	8.10
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Current smoker	4.20	2.40	7.50

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Waked	2011	2010	Lebanon	LMIC	MENA	Mixed	LLN	57.1	Current smoker	4.88	3.37	7.06
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Current smoker	5.41	3.64	8.05
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Current smoker	2.63	1.86	3.73
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Current smoker	1.27	1.05	1.54
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Env tob smk	0.63	0.33	1.19
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Env tob smk	1.25	0.86	1.80
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Env tob smk	0.55	0.19	1.55
Golshan	2011	2010	Iran	LMIC	MENA	Mixed	Fixed Ratio	58.0	Env tob smk	1.15	0.43	3.08
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Env tob smk	1.02	0.55	1.89
Kotaniemi	2005	2004	Finland	HIC	Europe	Rural	Fixed Ratio	47.9	Env tob smk	1.05	0.54	2.05
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Env tob smk	1.22	0.73	2.06
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Env tob smk	2.18	0.99	4.75
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Env tob smk	1.29	1.01	1.65
Andreeva	2016	2013	Russia	LMIC	Europe	Urban	Fixed Ratio	54.0	Ever smoker	2.47	1.60	3.82
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Ever smoker	1.76	1.36	2.28
Deveci	2011	2007	Turkey	LMIC	Europe	Mixed	Fixed Ratio	37.7	Ever smoker	2.13	0.76	2.55
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Ever smoker	2.07	1.63	2.63

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Jordan	2012	1998	UK	HIC	Europe	Mixed	Fixed Ratio	58.1	Ever smoker	2.48	2.23	2.76
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Ever smoker	1.70	1.30	2.20
Kotaki	2019	2018	Japan	HIC	East Asia & Pacific	urban	Fixed Ratio	69.2	Ever smoker	1.07	0.35	2.46
Lam	2014	2010	Vietnam	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	47.5	Ever smoker	13.50	2.20	84.00
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	Ever smoker	2.30	1.60	2.60
Li	2009	2008	China	LMIC	East Asia & Pacific	Urban	Fixed Ratio	59.5	Ever smoker	2.88	2.12	3.93
Magitta	2018	2018	Tanzania	LMIC	SSA	Rural	Fixed Ratio	51.8	Ever smoker	2.11	1.29	3.44
Ogata	2018	2012	Japan	HIC	East Asia & Pacific	Rural	Fixed Ratio	55.0	Ever smoker	2.29	1.73	3.03
Sichletidis	2005	2001	Greece	HIC	Europe	Mixed	Fixed Ratio	52.7	Ever smoker	2.17	1.63	2.91
Woldeamanuel	2019	2019	Ethiopia	LMIC	SSA	Rural	Fixed Ratio	39.2	Ever smoker	4.19	2.59	6.78
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Ex smoker	4.50	3.30	6.00
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Ex smoker	1.63	1.11	2.41
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Ex smoker	2.90	1.43	5.90
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Ex smoker	1.71	0.81	3.62
Bakke	1991	1990	Norway	HIC	Europe	Mixed	Fixed Ratio	42.0	Ex smoker	4.10	1.60	10.80
Borlee	2017	2017	Netherlands	HIC	Europe	Urban	Fixed Ratio	62.1	Ex smoker	1.20	1.08	1.32
Brostrom	2018	2009	Estonia	HIC	Europe	Urban	LLN	61.0	Ex smoker	2.73	1.16	6.44

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Brostrom	2018	2005	Iceland	HIC	Europe	Urban	LLN	56.4	Ex smoker	1.73	0.97	3.09
Brostrom	2018	2007	Sweden	HIC	Europe	Urban	LLN	58.8	Ex smoker	1.63	0.79	3.36
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Ex smoker	2.16	0.67	7.02
de Marco	2004	1992	Europe	HIC	Europe	Mixed	Fixed Ratio	32.0	Ex smoker	1.42	1.07	1.89
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Ex smoker	1.56	1.30	1.88
Ford	2010	2010	USA	HIC	North America	Urban	Fixed Ratio	44.8	Ex smoker	1.66	1.47	1.88
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Ex smoker	1.30	0.79	2.16
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	Ex smoker	1.53	1.14	2.07
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Ex smoker	10.30	5.40	20.00
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Ex smoker	2.95	1.78	4.88
Isoaho	1994	1991	Finland	HIC	Europe	Rural	Fixed Ratio	73.0	Ex smoker	6.38	1.85	21.50
Ko	2008	2006	Hong Kong	HIC	East Asia & Pacific	Urban	Fixed Ratio	74.2	Ex smoker	1.79	1.29	2.50
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Ex smoker	2.02	1.06	3.85
Martinez	1994	2012	USA	HIC	North America	Mixed	Fixed Ratio	56.1	Ex smoker	1.33	0.82	2.16
Martinez	2015	2012	USA	HIC	North America	Mixed	Fixed Ratio	55.6	Ex smoker	1.33	0.82	2.16
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Ex smoker	1.24	0.87	1.74
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Ex smoker	2.02	1.27	4.92

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Ex smoker	0.97	0.32	2.34
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Ex smoker	1.55	0.46	5.27
Sharifi	2019	2017	Iran	LMIC	MENA	Mixed	Fixed Ratio	40.0	Ex smoker	1.74	0.49	6.15
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Ex smoker	18.35	9.13	38.88
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Ex smoker	2.40	1.60	3.60
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Ex smoker	3.60	2.10	6.20
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Ex smoker	2.48	1.66	3.64
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Ex smoker	1.15	0.27	4.98
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Ex smoker	1.72	1.40	2.11
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Family hx OAD	2.10	1.22	3.60
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Family hx OAD	0.96	0.48	1.92
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Family hx OAD	1.02	0.74	1.40
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Family hx OAD	1.55	1.39	1.73
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Family hx OAD	1.24	0.83	1.84
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Family hx OAD	1.81	0.88	3.73
Jiang	2007	2006	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	59.5	Family hx OAD	1.53	1.01	2.05
Kotaniemi	2005	2004	Finland	HIC	Europe	Rural	Fixed Ratio	47.9	Family hx OAD	3.77	1.86	7.65

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Lindberg	2006	1996	Sweden	HIC	Europe	Rural	Fixed Ratio	49.1	Family hx OAD	1.33	0.92	1.95
Ling	2011	2010	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	49.5	Family hx OAD	1.68	1.11	2.53
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Family hx OAD	1.72	1.30	2.28
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Family hx OAD	1.79	1.01	3.19
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Family hx OAD	1.55	1.34	1.79
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Family hx OAD	1.50	1.17	1.93
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Family hx OAD	2.18	1.93	2.45
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Family hx OAD	2.55	1.72	3.76
Bakke	1991	1990	Norway	HIC	Europe	Mixed	Fixed Ratio	42.0	Female	0.90	0.40	1.50
Borlee	2017	2017	Netherlands	HIC	Europe	Urban	Fixed Ratio	62.1	Female	1.20	1.08	1.32
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Female	0.82	0.64	1.05
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Female	0.20	0.06	0.64
Danielsson	2012	2007	Sweden	HIC	Europe	Urban	Fixed Ratio	58.9	Female	0.71	0.42	1.19
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Female	0.82	0.41	1.65
Kotaniemi	2005	2004	Finland	HIC	Europe	Rural	Fixed Ratio	47.9	Female	0.47	0.22	0.98
Lindberg	2006	1996	Sweden	HIC	Europe	Rural	Fixed Ratio	49.1	Female	1.12	0.66	1.88
Martinez	1994	2012	USA	HIC	North America	Mixed	Fixed Ratio	56.1	Female	2.02	1.37	2.99

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Martinez	2015	2012	USA	HIC	North America	Mixed	Fixed Ratio	55.6	Female	1.37	0.93	2.26
Martinez-Perez	2016	2014	Spain	HIC	Europe	Rural	Fixed Ratio	59.0	Female	0.24	0.12	0.48
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Female	0.67	0.40	1.13
Sichletidis	2005	2001	Greece	HIC	Europe	Mixed	Fixed Ratio	52.7	Female	0.43	0.31	0.60
Woldeamanuel	2019	2019	Ethiopia	LMIC	SSA	Rural	Fixed Ratio	39.2	Female	1.21	0.74	1.59
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	HIV	0.61	0.24	1.57
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	HIV	4.86	0.60	40.00
Danielsson	2012	2007	Sweden	HIC	Europe	Urban	Fixed Ratio	58.9	Hx TB	5.99	0.82	10.44
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Hx TB	3.14	1.45	6.80
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Hx TB	1.73	1.33	2.23
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Hx TB	6.17	2.77	13.75
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Hx TB	4.27	3.09	5.88
Magitta	2018	2018	Tanzania	LMIC	SSA	Rural	Fixed Ratio	51.8	Hx TB	5.13	1.97	3.33
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Hx TB	2.15	0.28	16.60
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Hx TB	0.88	0.49	1.60
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Hx TB	1.77	0.64	4.84
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Lower class	1.16	0.37	3.63

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Lower class	3.08	0.86	11.08
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Lower class	1.28	0.78	2.11
de Marco	2004	1992	Europe	HIC	Europe	Mixed	Fixed Ratio	32.0	Lower class	1.60	1.30	1.97
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Lower class	1.49	1.19	1.87
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Lower class	0.94	0.67	1.32
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Lower class	1.28	0.52	3.16
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Lower class	1.10	0.60	1.80
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Lower class	1.67	1.00	2.79
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Lower class	1.35	0.91	1.99
Jordan	2012	1998	UK	HIC	Europe	Mixed	Fixed Ratio	58.1	Lower class	1.23	1.13	1.33
Kainu	2013	2002	Finland	HIC	Europe	Urban	Fixed Ratio	49.1	Lower class	3.42	1.21	9.84
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Lower class	2.80	1.90	4.10
Kim	2005	2002	South Korea	HIC	East Asia & Pacific	Mixed	Fixed Ratio	62.5	Lower class	2.62	1.98	3.47
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	Lower class	2.64	1.67	4.18
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	Lower class	1.73	0.99	3.01
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	Lower class	3.65	1.89	7.06
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Lower class	3.18	1.69	5.96

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Lower class	0.85	0.57	1.28
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Male	4.13	1.49	2.30
Andreeva	2016	2013	Russia	LMIC	Europe	Urban	Fixed Ratio	54.0	Male	3.06	2.07	4.53
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Male	1.35	0.74	2.46
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Male	1.06	0.56	2.01
Brostrom	2018	2009	Estonia	HIC	Europe	Urban	LLN	61.0	Male	0.82	0.40	1.70
Brostrom	2018	2005	Iceland	HIC	Europe	Urban	LLN	56.4	Male	1.09	0.65	1.81
Brostrom	2018	2007	Sweden	HIC	Europe	Urban	LLN	58.8	Male	0.71	0.38	1.34
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	Male	1.52	0.88	2.61
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Male	14.84	2.63	83.84
Deveci	2011	2007	Turkey	LMIC	Europe	Mixed	Fixed Ratio	37.7	Male	2.49	0.79	2.81
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Male	1.70	1.41	2.06
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Male	1.94	1.69	2.23
Ford	2010	2010	USA	HIC	North America	Urban	Fixed Ratio	44.8	Male	1.43	1.31	1.57
Fukuchi	2004	2000	Japan	HIC	East Asia & Pacific	Mixed	Fixed Ratio	58.0	Male	3.30	1.30	2.92
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Male	1.84	1.21	2.79
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Male	1.69	1.20	2.40

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Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Male	2.58	1.63	4.08
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Male	2.21	1.45	3.39
Hvidsten	2010	1999	Norway	HIC	Europe	Mixed	Fixed Ratio	60.8	Male	1.22	0.63	2.37
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Male	1.94	1.33	2.83
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Male	2.35	1.61	3.42
Jiang	2007	2006	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	59.5	Male	1.30	1.05	1.55
Jordan	2012	1998	UK	HIC	Europe	Mixed	Fixed Ratio	58.1	Male	1.46	1.34	1.59
Kainu	2013	2002	Finland	HIC	Europe	Urban	Fixed Ratio	49.1	Male	1.90	0.52	2.30
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Male	2.00	1.60	2.50
Kim	2005	2002	South Korea	HIC	East Asia & Pacific	Mixed	Fixed Ratio	62.5	Male	3.95	2.96	5.31
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	Male	6.03	3.70	9.85
Ko	2008	2006	Hong Kong	HIC	East Asia & Pacific	Urban	Fixed Ratio	74.2	Male	1.61	1.18	2.18
Laniado-Laborin	2009	2008	Mexico	LMIC	South America	Urban	Fixed Ratio	58.0	Male	1.70	1.20	2.50
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Male	3.87	3.04	4.92
Magitta	2018	2018	Tanzania	LMIC	SSA	Rural	Fixed Ratio	51.8	Male	1.87	1.16	3.03
Melville	2010	2004	UK	HIC	Europe	Urban	Fixed Ratio	59.0	Male	2.30	1.40	3.60
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Male	1.29	0.96	1.73

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Minas	2010	2008	Greece	HIC	Europe	Rural	Fixed Ratio	63.9	Male	6.27	4.32	9.09
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Male	3.21	2.44	6.32
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Male	1.86	1.18	2.93
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	Male	2.92	0.51	4.93
Ogata	2018	2012	Japan	HIC	East Asia & Pacific	Rural	Fixed Ratio	55.0	Male	1.64	1.00	2.28
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Male	2.35	1.10	5.04
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	Male	2.23	1.34	3.71
Sharifi	2019	2017	Iran	LMIC	MENA	Mixed	Fixed Ratio	40.0	Male	1.67	0.76	3.64
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Male	1.65	1.12	2.45
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Male	1.70	1.20	2.30
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Male	3.10	2.10	4.80
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Male	2.70	2.24	3.26
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Male	4.01	2.84	5.68
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Male	2.01	1.22	3.33
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Male	1.85	1.59	2.14
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Male	2.00	1.60	2.51
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Middle class	0.89	0.43	1.84

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Middle class	1.65	0.70	3.91
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Middle class	1.35	0.99	1.86
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Middle class	0.98	0.60	1.60
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Middle class	0.99	0.56	1.73
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Middle class	1.59	1.12	2.26
Hvidsten	2010	1999	Norway	HIC	Europe	Mixed	Fixed Ratio	60.8	Middle class	0.71	0.33	1.53
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Middle class	0.81	0.50	1.30
Kainu	2013	2002	Finland	HIC	Europe	Urban	Fixed Ratio	49.1	Middle class	1.48	0.43	5.09
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Middle class	1.10	0.70	1.70
Kim	2006	2003	South Korea	HIC	East Asia & Pacific	Urban	Fixed Ratio	50.5	Middle class	1.81	1.22	2.67
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Middle class	1.25	0.58	2.71
Scholes	2014	2012	UK	HIC	Europe	Mixed	Fixed Ratio	57.6	Middle class	1.84	0.87	3.87
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Middle class	1.65	0.83	3.27
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Middle class	0.73	0.47	1.13
Brostrom	2018	2009	Estonia	HIC	Europe	Urban	LLN	61.0	Middle-high school	0.89	0.36	2.20
Brostrom	2018	2005	Iceland	HIC	Europe	Urban	LLN	56.4	Middle-high school	0.65	0.37	1.13
Brostrom	2018	2007	Sweden	HIC	Europe	Urban	LLN	58.8	Middle-high school	0.76	0.37	1.53

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Middle-high school	0.80	0.33	1.93
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Middle-high school	1.52	1.17	1.97
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Middle-high school	1.18	0.88	1.59
Ford	2010	2010	USA	HIC	North America	Urban	Fixed Ratio	44.8	Middle-high school	0.96	0.86	1.07
Guerriero	2015	2012	Italy	HIC	Europe	Mixed	Fixed Ratio	56.2	Middle-high school	0.70	0.40	1.21
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	Middle-high school	1.36	1.01	1.83
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Middle-high school	1.43	0.80	2.57
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Middle-high school	0.97	0.63	1.51
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Middle-high school	1.50	1.10	2.30
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Middle-high school	1.73	1.17	2.55
Martinez	1994	2012	USA	HIC	North America	Mixed	Fixed Ratio	56.1	Middle-high school	0.88	0.61	1.28
Martinez	2015	2012	USA	HIC	North America	Mixed	Fixed Ratio	55.6	Middle-high school	0.94	0.61	1.44
Mascarenhas	2011	2003	Portugal	HIC	Europe	Urban	Fixed Ratio	58.5	Middle-high school	0.98	0.47	2.06
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Middle-high school	1.39	0.80	2.43
Miravittles	2009	2007	Spain	HIC	Europe	Mixed	Fixed Ratio	56.6	Middle-high school	1.10	0.80	1.50
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	Middle-high school	0.36	0.21	0.63
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Middle-high school	0.63	0.29	1.39

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Middle-high school	1.40	0.90	2.10
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Middle-high school	1.50	0.80	2.70
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Middle-high school	0.67	0.51	0.89
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Middle-high school	1.07	0.75	1.53
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Middle-high school	1.31	1.02	1.69
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Middle-high school	1.66	1.00	2.77
Al-Hazmi	2007	1994	Canada	HIC	North America	Urban	LLN	32.0	Occupational exp	1.41	1.04	1.90
Andreeva	2016	2013	Russia	LMIC	Europe	Urban	Fixed Ratio	54.0	Occupational exp	1.40	0.90	2.18
Bridevaux	2010	2002	Switzerland	HIC	Europe	Mixed	LLN	53.7	Occupational exp	0.91	0.68	1.22
Cabrera Lopez	2014	2012	Spain	HIC	Europe	Urban	Fixed Ratio	55.0	Occupational exp	0.94	0.55	1.63
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Occupational exp	1.29	0.98	1.70
Danielsson	2012	2007	Sweden	HIC	Europe	Urban	Fixed Ratio	58.9	Occupational exp	1.09	0.90	1.32
de Marco	2004	1992	Europe	HIC	Europe	Mixed	Fixed Ratio	32.0	Occupational exp	1.54	1.29	1.83
Denguezli	2016	2016	Tunisia	LMIC	MENA	Urban	Fixed Ratio	52.0	Occupational exp	1.87	1.14	12.86
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Occupational exp	1.29	1.06	1.57
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Occupational exp	1.27	1.13	1.42
Guillien	2016	2013	France	HIC	Europe	Rural	Fixed Ratio	50.0	Occupational exp	1.94	1.23	3.06

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Hagstad	2015	2006	Sweden	HIC	Europe	Urban	Fixed Ratio	48.4	Occupational exp	1.85	1.03	3.33
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	Occupational exp	0.97	0.78	1.21
Idolor	2011	2010	Philippines	LMIC	East Asia & Pacific	Rural	Fixed Ratio	53.5	Occupational exp	2.37	1.04	5.36
Kotaniemi	2005	2004	Finland	HIC	Europe	Rural	Fixed Ratio	47.9	Occupational exp	1.63	0.64	4.14
Matheson	2005	2004	Australia	HIC	East Asia & Pacific	Urban	Fixed Ratio	57.3	Occupational exp	2.70	1.39	5.23
Melville	2010	2004	UK	HIC	Europe	Urban	Fixed Ratio	59.0	Occupational exp	2.30	1.40	3.70
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Occupational exp	1.52	1.09	2.12
Minas	2010	2008	Greece	HIC	Europe	Rural	Fixed Ratio	63.9	Occupational exp	2.26	1.70	2.99
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Occupational exp	0.92	0.51	1.88
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Occupational exp	5.64	3.64	8.76
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Occupational exp	1.10	0.80	1.50
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Occupational exp	1.20	0.80	1.80
Yin	2007	2006	China	LMIC	East Asia & Pacific	Urban	Fixed Ratio	61.7	Occupational exp	1.50	1.14	1.97
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Occupational exp	0.85	0.49	1.46
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Occupational exp	1.20	1.04	1.39
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Occupational exp	1.40	0.90	2.18
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Overcrowding	1.10	0.80	1.60

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Sinha	2017	2017	India	LMIC	South Asia	Rural	Fixed Ratio	46.0	Overcrowding	2.28	1.55	3.34
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Primary or non	1.40	1.10	1.70
Daldoul	2013	2012	Tunisia	LMIC	MENA	Urban	Fixed Ratio	59.5	Primary or non	0.38	0.08	1.84
Echazarreta	2018	2016	Argentina	HIC	South America	Urban	Fixed Ratio	58.8	Primary or non	1.20	0.97	1.48
Fang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	54.9	Primary or non	1.31	0.95	1.80
Halldin	2015	2010	USA	HIC	North America	Mixed	LLN	55.5	Primary or non	1.24	0.89	1.72
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Primary or non	1.46	0.82	2.58
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Primary or non	1.30	0.86	1.97
Kanervisto	2011	2001	Finland	HIC	Europe	Mixed	Fixed Ratio	55.0	Primary or non	4.00	2.80	5.60
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Primary or non	1.78	1.39	2.29
Menezes	2005	2005	Brazil	LMIC	South America	Urban	Fixed Ratio	55.2	Primary or non	2.13	1.28	3.55
Miravitlles	2009	2007	Spain	HIC	Europe	Mixed	Fixed Ratio	56.6	Primary or non	1.60	1.10	2.50
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Primary or non	0.26	0.12	1.03
North	2019	2015	Uganda	LMIC	SSA	Rural	LLN	43.0	Primary or non	0.80	0.48	1.32
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Primary or non	1.15	0.63	2.10
Pefura-Yone	2016	2014	Cameroon	LMIC	SSA	Rural	LLN	34.4	Primary or non	1.19	0.54	2.61
Tan	2015	2009	Canada	HIC	North America	Urban	LLN	56.9	Primary or non	1.00	0.96	1.05

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Waatevik	2013	2005	Norway	HIC	Europe	Mixed	Fixed Ratio	54.7	Primary or non	1.50	0.90	2.40
Waatevik	2013	1997	Norway	HIC	Europe	Mixed	Fixed Ratio	54.0	Primary or non	2.60	1.40	5.30
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Primary or non	1.61	1.12	2.31
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Primary or non	1.94	1.47	2.57
Zhou	2009	2009	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	66.0	Primary or non	2.36	1.40	4.00
Alam	2015	2012	Bangladesh	LMIC	South Asia	Rural	Fixed Ratio	53.7	Rural	1.86	1.07	1.60
Deveci	2011	2007	Turkey	LMIC	Europe	Mixed	Fixed Ratio	37.7	Rural	2.72	0.84	2.84
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Rural	1.07	0.77	1.49
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Rural	0.88	0.67	1.16
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Rural	1.57	1.56	1.59
Kim	2005	2002	South Korea	HIC	East Asia & Pacific	Mixed	Fixed Ratio	62.5	Rural	1.48	1.12	1.95
Ling	2011	2010	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	49.5	Rural	2.79	1.71	4.57
Liu	2007	2003	China	LMIC	East Asia & Pacific	Rural	Fixed Ratio	57.0	Rural	1.71	1.26	2.33
Wang	2018	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	43.8	Rural	1.42	1.00	2.01
Zha	2019	2015	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	53.9	Rural	1.12	0.90	1.40
Zhong	2007	2003	China	LMIC	East Asia & Pacific	Mixed	Fixed Ratio	56.7	Rural	1.30	1.07	1.57
Backman	2016	1994	Sweden	HIC	Europe	Urban	Fixed Ratio	49.1	Upper class	0.93	0.39	2.22

Author	Year of publication	Study period	Country	Income	Region	Settings	Criteria	Age	Risk defined	Odds ratio	Lower CI	Upper CI
Backman	2016	2009	Sweden	HIC	Europe	Urban	Fixed Ratio	50.2	Upper class	1.96	0.76	5.06
Hanga	2018	2014	India	LMIC	South Asia	Mixed	Fixed Ratio	57.8	Upper class	1.00	0.60	1.50
Hong	2017	2001	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	53.5	Upper class	1.05	0.61	1.80
Hong	2017	2011	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	57.0	Upper class	1.19	0.83	1.71
Hvidsten	2010	1999	Norway	HIC	Europe	Mixed	Fixed Ratio	60.8	Upper class	0.93	0.35	2.42
Isoaho	1994	1991	Finland	HIC	Europe	Rural	Fixed Ratio	73.0	Upper class	2.65	1.38	5.11
Jaganath	2015	2015	Peru	LMIC	South America	Mixed	Fixed Ratio	54.8	Upper class	0.53	0.33	0.87
Parasuramalu	2014	2013	India	LMIC	South Asia	Rural	Fixed Ratio	50.8	Upper class	2.31	0.94	5.71
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Upper class	0.61	0.39	0.96
Hagstad	2012	2012	Sweden	HIC	Europe	Urban	Fixed Ratio	45.0	Urban	1.08	0.48	2.41
Musafiri	2011	2009	Rwanda	LMIC	SSA	Mixed	LLN	38.3	Urban	0.72	0.58	2.28
Nakao	2017	2013	Mongolia	LMIC	East Asia & Pacific	Rural	Fixed Ratio	54.1	Urban	1.38	0.88	2.19
Yoo	2011	2008	Korea Rep	HIC	East Asia & Pacific	Mixed	Fixed Ratio	59.0	Urban	1.30	0.95	1.77

Table S8. Estimated prevalence and number of people aged 30-79 years living with GOLD-COPD in 201 countries and territories in 2019

Country	People living with COPD (thousand, 95% CI)	Prevalence (%, 95% CI)
Antigua and Barbuda	4.9 (4.1-5.8)	9.4 (7.9-11.1)
Aruba	6.0 (5.1-7.0)	9.5 (8.1-11.2)
Bahamas	12.0 (10.3-13.9)	5.9 (5.1-6.9)
Barbados	13.0 (11.0-15.2)	7.7 (6.5-9.0)
Curaçao	7.7 (6.7-8.9)	8.0 (6.9-9.2)
Guadeloupe	18.1 (15.8-20.8)	7.9 (6.9-9.1)
Martinique	19.1 (16.6-22.0)	8.4 (7.3-9.7)
Puerto Rico	145.0 (125.7-166.8)	8.0 (6.9-9.2)
Trinidad and Tobago	69.1 (58.6-81.0)	8.5 (7.2-9.9)
United States Virgin Islands	5.1 (4.4-5.9)	8.4 (7.3-9.6)
Argentina	1641.3 (1416.1-1899.2)	7.4 (6.4-8.6)
Chile	1220.7 (1051.1-1414.9)	11.6 (10.0-13.4)
French Guiana	7.9 (6.8-9.3)	6.4 (5.5-7.5)
Uruguay	142.1 (123.0-163.9)	7.7 (6.7-8.9)
Canada	1619.7 (1396.4-1872.2)	7.1 (6.1-8.2)
United States of America	15602.8 (13451.6-18038.6)	8.3 (7.1-9.6)
Cyprus	99.9 (85.6-116.1)	14.4 (12.3-16.7)
Israel	408.7 (353.5-471.7)	10.1 (8.7-11.6)
Czechia	889.9 (765.8-1029.7)	12.8 (11-14.8)
Hungary	805.3 (691.9-933.2)	13.0 (11.2-15)
Poland	2953.8 (2524.6-3438.3)	12.2 (10.4-14.2)
Slovakia	483.6 (412.2-564.1)	13.8 (11.8-16.1)
Channel Islands	15.7 (13.3-18.3)	14.6 (12.4-17.1)
Denmark	336.6 (291.6-387.3)	9.8 (8.5-11.3)
Estonia	103.0 (88.4-119.5)	12.6 (10.8-14.6)
Finland	327.1 (283.3-376.4)	9.7 (8.4-11.2)
Iceland	14.5 (12.6-16.7)	7.6 (6.6-8.7)
Ireland	305.0 (260.8-355.0)	10.8 (9.2-12.5)
Latvia	176.9 (151.9-205.0)	14.7 (12.6-17.0)
Lithuania	205.2 (176.1-238.0)	12.0 (10.3-13.9)
Norway	296.0 (255.4-341.8)	9.3 (8.0-10.8)
Sweden	536.3 (464.6-617.2)	9.1 (7.8-10.4)
United Kingdom	3728.0 (3220.0-4301.9)	9.3 (8.1-10.8)
Croatia	397.8 (340.4-462.2)	15.2 (13.0-17.7)
Greece	969.8 (836.7-1119.9)	14.6 (12.6-16.8)
Italy	4431.9 (3814.2-5124.8)	11.3 (9.8-13.1)
Malta	29.3 (25.5-33.6)	10.5 (9.1-12.0)
Portugal	794.0 (682.3-919.0)	12.0 (10.4-13.9)
Slovenia	154.8 (132.3-179.9)	11.5 (9.8-13.3)
Spain	3333.6 (2873.3-3854.5)	11.0 (9.5-12.8)
Austria	719.1 (615.4-835.6)	12.8 (11.0-14.9)
Belgium	686.0 (595.9-788.3)	10.0 (8.7-11.4)
France	4919.4 (4246.3-5678.1)	12.8 (11.1-14.8)

Country	People living with COPD (thousand, 95% CI)	Prevalence (% 95% CI)
Germany	6091 (5251.3-7036.0)	11.6 (10.0-13.4)
Luxembourg	33.6 (29.0-38.9)	8.9 (7.7-10.3)
Netherlands	1095.8 (950.8-1259.6)	10.5 (9.1-12.1)
Switzerland	608.5 (523.4-704.3)	11.3 (9.7-13.1)
Bahrain	76.5 (65.0-90.2)	8.0 (6.8-9.5)
Kuwait	229.1 (196.6-267.3)	8.7 (7.5-10.2)
Oman	144.7 (122.6-171.0)	5.6 (4.8-6.7)
Qatar	107.3 (91.6-126.1)	6.6 (5.6-7.7)
Saudi Arabia	1322.7 (1125.7-1553.8)	7.3 (6.2-8.6)
State of Palestine	132.9 (113.1-156.0)	8.3 (7.1-9.8)
United Arab Emirates	424.4 (359.3-501.9)	7.3 (6.2-8.7)
China, Hong Kong SAR	533 (463.9-611.3)	10.7 (9.3-12.3)
China, Macao SAR	41.9 (36.3-48.2)	9.8 (8.5-11.3)
China, Taiwan Province of China	1842.1 (1586.5-2131.6)	11.9 (10.2-13.7)
Japan	9570.1 (8333.6-10952.3)	11.7 (10.2-13.4)
Republic of Korea	3849.4 (3319.3-4449.6)	11.4 (9.9-13.2)
Brunei Darussalam	19.6 (16.7-22.9)	8.5 (7.3-10.0)
Singapore	342.6 (297.1-394.6)	8.9 (7.7-10.2)
Australia	1064.9 (919.9-1229.2)	7.4 (6.4-8.5)
New Zealand	202.9 (175.4-233.9)	7.5 (6.5-8.7)
New Caledonia	17.6 (15.0-20.4)	11.6 (9.9-13.5)
Guam	9.0 (7.7-10.3)	10.8 (9.3-12.4)
Burundi	298.7 (231.6-382.2)	9.5 (7.4-12.2)
Comoros	26.9 (20.9-34.4)	9.6 (7.5-12.3)
Eritrea	95.7 (74.6-121.6)	8.7 (6.8-11.0)
Ethiopia	3097.3 (2411.6-3944.4)	9.3 (7.3-11.9)
Kenya	1501.1 (1160.4-1928.1)	8.9 (6.9-11.4)
Madagascar	1066.4 (828.7-1361.0)	12.8 (9.9-16.3)
Malawi	488.0 (378.5-624.2)	9.5 (7.4-12.1)
Mauritius	83.0 (65.5-104.0)	11.3 (8.9-14.1)
Mayotte	9.1 (7.1-11.6)	10.3 (8.0-13.1)
Mozambique	833.8 (646.3-1067.5)	10.1 (7.8-12.9)
Réunion	57.8 (45.2-73.1)	12.1 (9.5-15.4)
Rwanda	407.4 (316.4-520.3)	9.9 (7.7-12.6)
Seychelles	5.0 (3.9-6.3)	9.3 (7.3-11.8)
South Sudan	378.1 (295.0-480.5)	11.4 (8.9-14.5)
Uganda	937.5 (724.3-1205.0)	8.5 (6.5-10.9)
United Republic of Tanzania	1615.3 (1251.5-2069.0)	9.6 (7.5-12.4)
Zambia	418.9 (323.2-539.3)	8.7 (6.7-11.2)
Zimbabwe	383.3 (297.1-490.8)	8.8 (6.8-11.2)
Angola	690.9 (533.4-888.6)	8.2 (6.3-10.6)
Cameroon	573.1 (443.0-736.4)	7.5 (5.8-9.6)
Central African Republic	138.8 (107.7-177.3)	11.1 (8.6-14.2)
Chad	399.1 (310.1-509.7)	10.0 (7.8-12.8)
Congo	156.9 (121.1-201.8)	9.1 (7.0-11.7)
Democratic Republic of the Congo	2665.2 (2072.3-3399.2)	11.2 (8.7-14.3)

Country	People living with COPD (thousand, 95% CI)	Prevalence (% 95% CI)
Equatorial Guinea	34.0 (26.1-44.1)	7.4 (5.7-9.6)
Gabon	51.8 (40.0-66.8)	6.5 (5.0-8.3)
Sao Tome and Principe	4.3 (3.3-5.5)	6.5 (5.0-8.3)
Botswana	78.4 (60.8-100.4)	8.7 (6.7-11.1)
Eswatini	29.4 (22.9-37.5)	7.9 (6.2-10.1)
Lesotho	104.7 (81.7-133.1)	12.8 (10-16.3)
Namibia	74.7 (57.8-95.8)	8.7 (6.8-11.2)
South Africa	2098.6 (1628.5-2682.3)	8.0 (6.2-10.2)
Benin	302.5 (234.6-387.0)	8.6 (6.6-11.0)
Burkina Faso	559.7 (433.2-717.7)	10.0 (7.7-12.8)
Cabo Verde	17.4 (13.5-22.4)	7.2 (5.5-9.2)
Côte d'Ivoire	721.6 (560.8-921.1)	9.5 (7.4-12.1)
Gambia	61.3 (47.5-78.5)	9.5 (7.4-12.2)
Ghana	777.8 (601.3-998.9)	7.3 (5.6-9.4)
Guinea	355.1 (275.6-454.0)	10.3 (8.0-13.1)
Guinea-Bissau	56.3 (43.5-72.2)	9.8 (7.6-12.6)
Liberia	137.2 (106.3-175.6)	8.8 (6.8-11.2)
Mali	502.2 (389.2-643.2)	9.9 (7.7-12.7)
Mauritania	124.7 (96.6-159.9)	8.4 (6.5-10.8)
Niger	576.0 (449.4-731.6)	10.4 (8.1-13.2)
Nigeria	4349.4 (3366.1-5578.5)	7.3 (5.7-9.4)
Senegal	365.7 (283.3-468.5)	7.6 (5.9-9.7)
Sierra Leone	267.6 (207.4-342.8)	11.2 (8.6-14.3)
Togo	221.1 (171.3-283.4)	8.6 (6.7-11.1)
Algeria	1334.5 (1039.6-1697.7)	6.7 (5.2-8.5)
Western Sahara	24.7 (19.0-31.9)	9.1 (7.0-11.7)
Cuba	630.5 (494.2-795.7)	9.0 (7.0-11.3)
Dominican Republic	232.1 (179.8-297.2)	4.8 (3.7-6.2)
Grenada	3.5 (2.7-4.4)	6.1 (4.8-7.7)
Haiti	290.1 (224.9-371.2)	6.7 (5.2-8.5)
Jamaica	83.9 (65.5-106.5)	5.8 (4.5-7.4)
Saint Lucia	6.8 (5.4-8.6)	6.9 (5.4-8.7)
Saint Vincent and the Grenadines	3.7 (2.9-4.6)	6.4 (5.0-8.1)
Belize	9.0 (7.0-11.6)	5.7 (4.4-7.3)
Costa Rica	136.9 (106.5-174.4)	5.1 (3.9-6.5)
El Salvador	154.3 (120.1-196.5)	5.5 (4.3-7.0)
Guatemala	422.6 (327.7-540.7)	6.7 (5.2-8.6)
Honduras	237.1 (183.5-304.0)	6.3 (4.9-8.1)
Mexico	3282.8 (2546.4-4196.9)	5.5 (4.3-7.0)
Nicaragua	180.8 (140.0-231.7)	6.5 (5.0-8.3)
Panama	96.2 (74.8-122.7)	4.8 (3.7-6.1)
Bolivia (Plurinational State of)	287.6 (223.8-366.3)	6.1 (4.8-7.8)
Brazil	6034.0 (4677.8-7717.7)	5.3 (4.1-6.8)
Colombia	1251.7 (971.4-1599.1)	5.0 (3.8-6.3)
Ecuador	437.8 (340.5-558.0)	5.6 (4.4-7.2)
Guyana	22.6 (17.6-28.6)	6.7 (5.3-8.5)

Country	People living with COPD (thousand, 95% CI)	Prevalence (% 95% CI)
Paraguay	183.2 (142.7-233.3)	6.2 (4.8-7.9)
Peru	904.6 (703.1-1153.8)	5.6 (4.3-7.1)
Suriname	16.5 (12.8-21.0)	6.0 (4.7-7.7)
Venezuela (Bolivarian Republic of)	749.1 (580.7-958.1)	5.5 (4.3-7.0)
Bangladesh	9923.4 (7750.3-12590.6)	13.6 (10.7-17.3)
Bhutan	30.7 (24.0-38.9)	9.0 (7.0-11.4)
India	68688.5 (53697.8-87022.3)	10.9 (8.5-13.8)
Maldives	15.8 (12.2-20.4)	6.1 (4.7-7.9)
Nepal	1411.0 (1107.2-1779.8)	12.6 (9.9-15.9)
Sri Lanka	1496.4 (1181.3-1872.9)	13.2 (10.4-16.5)
Dem. People's Republic of Korea	1832.3 (1432.8-2319.2)	12.8 (10.0-16.2)
Indonesia	17876.1 (13967.5-22657.9)	13.6 (10.6-17.2)
Myanmar	3383.0 (2640.7-4293.2)	13.2 (10.3-16.7)
Thailand	4609.4 (3628.4-5788.5)	10.9 (8.6-13.7)
Timor-Leste	76.3 (59.9-96.4)	18.2 (14.3-23.0)
Armenia	143.2 (112.1-181.0)	8.6 (6.7-10.8)
Azerbaijan	358.9 (279.1-457.5)	6.7 (5.2-8.6)
Georgia	269.1 (211.4-338.4)	11.6 (9.1-14.6)
Turkey	3387.2 (2637.3-4310.8)	8.0 (6.3-10.2)
Kazakhstan	713.8 (555.4-909.1)	7.8 (6.0-9.9)
Kyrgyzstan	230.4 (179.0-294.1)	8.5 (6.6-10.9)
Tajikistan	272.4 (211.0-348.9)	8.0 (6.2-10.3)
Turkmenistan	179.1 (138.5-229.8)	6.9 (5.4-8.9)
Uzbekistan	771.1 (596.9-988.5)	5.2 (4.0-6.7)
Belarus	496.3 (387.4-629.2)	8.4 (6.5-10.6)
Bulgaria	518.2 (406.9-652.2)	11.2 (8.8-14.1)
Republic of Moldova	219.4 (171.9-277.1)	8.7 (6.8-10.9)
Romania	1194.9 (939.4-1502.3)	9.7 (7.6-12.2)
Russian Federation	7683.5 (5994.7-9747.7)	8.5 (6.6-10.8)
Ukraine	2330.7 (1823.6-2946.9)	8.3 (6.5-10.5)
Albania	196.5 (155.1-245.8)	12.1 (9.6-15.1)
Bosnia and Herzegovina	305.9 (240.7-384.1)	14.4 (11.3-18.1)
Montenegro	38.7 (30.3-48.7)	10.5 (8.2-13.2)
North Macedonia	130.7 (102.6-164.7)	10.2 (8.0-12.8)
Serbia	694.8 (546.0-874.0)	12.8 (10.0-16)
Djibouti	33.6 (26.0-43)	8.0 (6.2-10.2)
Somalia	459.9 (358.5-584.9)	11.9 (9.2-15.1)
Egypt	3340.3 (2609.7-4235.0)	8.2 (6.4-10.4)
Libya	206.3 (159.3-265.2)	6.4 (5.0-8.3)
Morocco	1175.8 (918.8-1489.8)	6.7 (5.3-8.5)
Sudan	1464.4 (1142.1-1861.0)	10.9 (8.5-13.9)
Tunisia	540.4 (422.5-684.2)	8.8 (6.9-11.1)
Iraq	820.6 (634.5-1053.8)	6.2 (4.8-8.0)
Jordan	248.1 (191.7-318.9)	6.4 (4.9-8.2)
Lebanon	301.5 (234.2-384.7)	9.2 (7.2-11.8)
Syrian Arab Republic	501.1 (389.4-639.4)	7.0 (5.5-9.0)

Country	People living with COPD (thousand, 95% CI)	Prevalence (%, 95% CI)
Yemen	649.8 (503.5-832.5)	7.2 (5.6-9.3)
Afghanistan	1228.3 (954.9-1567.0)	11.6 (9.0-14.8)
Iran (Islamic Republic of)	2267.1 (1758.1-2900.3)	5.2 (4.0-6.6)
Pakistan	8070.0 (6298.7-10246.8)	10.2 (8.0-13)
China	105834.1 (83116.2-133277.0)	12.0 (9.4-15.1)
Mongolia	134.8 (104.2-173.1)	9.0 (7.0-11.6)
Cambodia	675.0 (525.3-860.0)	10.0 (7.8-12.7)
Lao People's Democratic Republic	353.7 (275.4-450.5)	12.7 (9.9-16.1)
Malaysia	1166.4 (908.7-1483.4)	7.4 (5.8-9.4)
Philippines	4790.7 (3732.6-6093.3)	10.6 (8.3-13.5)
Viet Nam	6099.0 (4762.8-7735.1)	12.1 (9.4-15.3)
Fiji	38.1 (29.6-48.4)	9.3 (7.2-11.8)
Papua New Guinea	350.8 (273.6-445.9)	10.9 (8.5-13.8)
Solomon Islands	31.4 (24.5-39.8)	14.2 (11.1-18.1)
Vanuatu	10.5 (8.2-13.3)	10.0 (7.8-12.7)
Kiribati	6.0 (4.7-7.7)	13.5 (10.5-17.2)
Micronesia (Fed. States of)	4.5 (3.5-5.7)	10.0 (7.8-12.7)
French Polynesia	11.3 (8.8-14.4)	7.5 (5.8-9.5)
Samoa	8.2 (6.4-10.3)	11.4 (8.9-14.4)
Tonga	4.4 (3.4-5.5)	11.3 (8.9-14.2)

Appendix 4. Studies retained for analysis

Studies retained for analysis	
1.	Al Ghobain, M., et al. (2015). "The prevalence of chronic obstructive pulmonary disease in Riyadh, Saudi Arabia: a BOLD study." <i>International Journal of Tuberculosis & Lung Disease</i> 19(10): 1252-1257.
2.	Al Zaabi, A., et al. (2011). "Prevalence of COPD in Abu Dhabi, United Arab Emirates." <i>Respiratory Medicine</i> 105(4): 566-570.
3.	Alam, D. S., et al. (2015). "Prevalence and Determinants of Chronic Obstructive Pulmonary Disease (COPD) in Bangladesh." <i>Copd: Journal of Chronic Obstructive Pulmonary Disease</i> 12(6): 658-667.
4.	Al-Hazmi, M., et al. (2007). "Airflow obstruction in young adults in Canada." <i>Canadian Respiratory Journal</i> 14(4): 221-227.
5.	Amarasiri, L., et al. (2017). "The prevalence of chronic obstructive pulmonary disease (COPD) in Sri Lanka: Outcome of the BOLD study." <i>European Respiratory Journal. Conference: European Respiratory Society International Congress, ERS</i> 50(Supplement 61).
6.	Amra, B., et al. (2011). "Correlation between chronic obstructive pulmonary disease and obstructive sleep apnea syndrome in a general population in Iran." <i>J Res Med Sci</i> 16(7): 885-889.
7.	Andreeva, E., et al. (2016). "The Prevalence of Chronic Obstructive Pulmonary Disease by the Global Lung Initiative Equations in North-Western Russia." <i>Respiration</i> 91(1): 43-55.
8.	Arslan, Z., et al. (2013). "Prevalence of chronic obstructive pulmonary disease in kocaeli: an industrialised city in Turkey." <i>Balkan Med J</i> 30(4): 387-393.
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13.	Bhatta, L., et al. (2018). "Prevalence and trend of COPD from 1995-1997 to 2006-2008: The HUNT study, Norway." <i>Respiratory Medicine</i> 138: 50-56.
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17.	uist, A. S., et al. (2007). "International variation in the prevalence of COPD (the BOLD Study): a population-based prevalence study." <i>Lancet</i> 370(9589): 741-750.
18.	Burney, P., et al. (2014). "Chronic obstructive pulmonary disease mortality and prevalence: the associations with smoking and poverty--a BOLD analysis." <i>Thorax</i> 69(5): 465-473.
19.	Caballero, A., et al. (2008). "Prevalence of COPD in five Colombian cities situated at low, medium, and high altitude (PREPOCOL study)." <i>Chest</i> 133(2): 343-349
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