Supplementary Online Content

Supplementary Table 1. Search Strategy

Database:

1. Ovid MEDLINE(R) ALL <1946 to May 24, 2021>

#	Query
1	exp Myocardial Ischemia/
2	(Myocardial Ischemia or Acute myocardial ischemia or Myocardial ischaemia recurrent or "Myocardial infarction due to demand ischemia").mp.
3	exp Acute Coronary Syndrome/
4	(Acute coronary insufficiency or Acute Coronary Syndrome or Non ST segment elevation acute coronary syndrome).mp.
5	exp Myocardial Infarction/
6	(Myocardial Infarction or Acute myocardial infarction subendocardial infarction or Acute myocardial infarction or Subendocardial myocardial infarction or Subsequent myocardial infarction or "Subsequent myocardial infarction of anterior wall" or "Subsequent myocardial infarction of inferior wall" or "Observation for suspected myocardial infarction" or transmural myocardial infarction posterior wall or acute myocardial infarction complications or infarction myocardial nontransmural or infarction myocardial subsequent lateral or Transmural myocardial infarction or transmural myocardial infarction inferior wall or anterior wall transmural myocardial infarction or infarction myocardial transmural lateral or infarction myocardial transmural septal or Postmyocardial infarction syndrome or Anterolateral Myocardial Infarction or Anterior myocardial infarction or Inferior Wall Myocardial Infarction).mp.
7	exp ST Elevation Myocardial Infarction/
8	(ST segment elevation myocardial infarction or Non STEMI or "ST elevation STEMI myocardial infarction of anterior wall" or "ST elevation STEMI myocardial infarction of inferior wall" or "ST elevation STEMI myocardial infarction of other sites" or "ST elevation STEMI myocardial infarction of unspecified site" or ST elevation STEMI myocardial infarction involving left main coronary artery or ST elevation STEMI myocardial infarction involving diagonal coronary artery or ST elevation STEMI myocardial infarction involving right coronary artery or ST elevation STEMI myocardial infarction involving oblique marginal coronary artery or ST elevation STEMI myocardial infarction involving left circumflex coronary artery or ST elevation STEMI myocardial infarction involving other sites or "Subsequent ST elevation STEMI and non ST elevation NSTEMI myocardial infarction" or "Subsequent ST segment elevation myocardial infarction of anterior wall" or "Subsequent ST elevation STEMI myocardial infarction of other sites" or "Subsequent ST elevation STEMI myocardial infarction of unspecified site" or "Subsequent ST segment elevation myocardial infarction of inferior wall" or ST elevation STEMI myocardial infarction involving left anterior descending coronary artery or "ST elevation STEMI myocardial infarction involving other coronary artery of anterior wall" or "ST elevation STEMI myocardial infarction involving other coronary artery of inferior wall" or "Certain current complications following ST elevation STEMI and non ST elevation NSTEMI myocardial infarction within the 28 day period ").mp.
9	exp Non-ST Elevated Myocardial Infarction/
10	(Non ST elevation NSTEMI myocardial infarction or "Certain current complications following ST elevation STEMI and non ST elevation NSTEMI myocardial infarction within the 28 day period ").mp.
11	exp Angina, Unstable/

12	(Angina Unstable or New onset unstable angina pectoris or "Atherosclerotic heart disease of native coronary artery with unstable angina pectoris").mp.
13	exp Coronary Disease/
14	(Coronary heart disease or Coronary Artery Disease or "Atherosclerotic heart disease of native coronary artery with angina pectoris" or "Atherosclerotic heart disease of native coronary artery with unstable angina pectoris").mp.
15	exp Coronary Artery Disease/
16	exp Myocardial Revascularization/
17	(Myocardial Revascularization or Lasers Ho:YAG Percutaneous Myocardial Revascularization or Myocardial infarction associated with revascularization procedure or Catheters Cardiac Laser Percutaneous Myocardial Revascularization).mp.
18	exp Myocardial Reperfusion/
19	(Myocardial Reperfusion or Myocardial Reperfusion Injury).mp.
20	exp Angioplasty/
21	(Angioplasty or Coronary angioplasty or Angioplasty Balloon or Angioplasty catheter or Angioplasty Balloon Coronary or CATHETER ANGIOPLASTY PERIPHERAL TRANSLUMINAL or BALLOON HEATED PERIPHERAL ANGIOPLASTY or Catheters Vascular Guiding or Angioplasty balloon catheter).mp.
22	exp Angioplasty, Balloon/
23	exp Angioplasty, Balloon, Coronary/
24	exp Atherectomy, Coronary/
25	exp Percutaneous Coronary Intervention/
26	(Percutaneous Coronary Intervention or Percutaneous Transluminal Coronary Angioplasty or ptca lad or Post percutaneous transluminal coronary angioplasty or Percutaneous transluminal coronary angioplasty multiple vessels or Single vessel PTCA or Coronary angioplasty balloon catheter or Percutaneous Transluminal Coronary Angioplasty PTCA Catheters).mp.
27	exp Coronary Artery Bypass/
28	exp Coronary Thrombosis/
29	(Bypass of one coronary artery or Coronary Artery Bypass Surgery or coronary artery graft device).mp.
30	(Coronary Thrombosis or "Coronary thrombosis not resulting in myocardial infarction" or thrombosis coronary graft or Coronary bypass thrombosis or Coronary stent thrombosis or Intraluminal coronary thrombosis).mp.
31	(Coronary Thrombosis or "Coronary thrombosis not resulting in myocardial infarction" or thrombosis coronary graft or Coronary bypass thrombosis or Coronary stent thrombosis or Intraluminal coronary thrombosis).mp.
32	(((coronar* or myocardi*) adj3 (disease* or isch?emia* or infarct* or syndrome* or occlusi* or obstruct*)) or ((heart or cardi*) adj3 (isch?emia* or infarct* or attack*)) or (CHD or IHD) or ((coronar* or myocardi* or heart*) adj3 (angioplast* or bypass* or reperfus* or revasculari* or stent* or balloon* or interven* or atherect*))).mp. or (CABG or PTCA or PPCI or PCI).ti,ab.
33	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32
34	COVID-19/
35	(COVID19 disease or COVID 19 convalescent plasma or Suspected COVID 19 or COVID 19 respiratory infection or Asymptomatic SARS CoV 2 or COVID 19 drug treatment).mp.
36	SARS-CoV-2/

37	(SARS CoV 2 Sclamp or Pneumonia caused by SARS CoV 2 or SARS CoV 2 carrier or SARS CoV 2 sepsis or SARS CoV 2 viremia or Anti SARS CoV 2 IgY or Anti SARS CoV 2 immunoglobulin or Suspected COVID 19 or SARS CoV 2 test positive or SARS CoV 2 test negative or "Occupational exposure to SARS CoV 2").mp.
38	Severe Acute Respiratory Syndrome/
39	SARS Virus/
40	(Severe Acute Respiratory Syndrome or SARS CoV 2 Sclamp or "Exposure to SARS CoV 2" or Pneumonia caused by SARS CoV 2 or SARS CoV 2 carrier or SARS CoV 2 sepsis or SARS CoV 2 viremia).mp.
41	Coronavirus/
42	(Coronavirus Infections or Genus: Coronavirus or Coronavirus pneumonia or Human coronavirus or SARS coronavirus).mp.
43	exp COVID-19 Testing/
44	(COVID 19 Testing or COVID 19 testing administered by pharmacist).mp.
45	Pandemics/
46	Pandemic association.mp.
47	(COVID* or SARS* or coronavir* or nCoV*).mp. or ((novel* or Wuhan*).mp. adj3 *virus/) or pandemic*.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]
48	34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47
49	exp Australia/
50	exp New Zealand/
51	exp Bangladesh/
52	exp Brunei/
53	exp Cambodia/
54	exp United Arab Emirates/
55	exp Hong Kong/
56	exp India/
57	exp Indonesia/
58	exp Iran/
59	exp Japan/
60	exp Korea/
61	exp Malaysia/
62	exp Mongolia/
63	exp Myanmar/
64	exp Nepal/
65	exp Pakistan/
66	exp Philippines/
67	exp Singapore/
68	exp Sri Lanka/
69	exp Taiwan/
70	exp Thailand/
71	exp Vietnam/
72	(Australia* or New Zealand* or Bangladesh* or Cambodia* or Emirat* or UAE* or United Arab Emirat* or Hong Kong* or India* or Indonesia* or Iran* or Japan* or Korea* or Malaysia* or

	Mongolia* or Myanm* or Burm* or Nepal* or Pakistan* or Philippines* or Filip* or Singapore* or Sri Lanka* or Taiwan* or Thai* or Viet*).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]
73	49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72
74	33 and 48 and 73

Supplementary Table 2. Characteristics of the studies included in the meta-analysis and systematic review

(N = 31)

First author, year	Location (Country and City)	Study design and study duration	Total sample size	Males	Mean (SD) or Median age (IQR)	Total no. of all-cause mortality (%)	Total no. of ICU admissions	No. with CMRF (%)	NOS Quality score
Alamdari et al, 2020[1]	Iran	Retrospective cross-sectional, 30/1/2020 to 5/4/2020	459	320 (69.7)	61.8, SD = 11.9	185 (40.3)	63 (13.7)	• DM = 119 (25.2) • HTN = 214 (46.6) • CVD = 185 (40.3) • Obesity = 36 (7.8) CVD = coronary heart disease	8
Baqi et al, 2021[2]	Pakistan	Retrospective observational, 24/4/2020 to 24/8/2020	299	221 (73.9)	60, IQR = 50-65	95/252 (37.6)	166/252 (65.9)	• DM = 153 (51.2) • HTN = 150 (50.3) • CVD = 45 (15.0) • Obesity = 23 (7.7) CVD defined as ischemic heart disease	7
Chen et al, 2020[3]	China, Hubei	Retrospective cohort, 15/1/2020 to 26/3/2020	792	432 (27.1)	55 IQR = 36-68	68 (8.6)	94 (11.9)	• DM = 142 (17.9) • HTN = 215 (27.1)	9
Cho et al, 2020[4]	Korea	Retrospective cohort, 1/2/2020 to 15/5/2020	7327	2964 (40.5)	47 SD = 19	223 (3.0)	-	• DM = 1223 (16.7) • HTN = 1559 (21.3)	9
Deeb et al, 2021[5]	Abu Dhabi	Retrospective observational, 1/3/2020 to End May	1075	972 (90.4)	51 SD = 306	101 (9.4)	-	• DM = 284 (26.4) • HTN = 214 (19.9) • CVD = 87 (8.9) CVD defined as a composite of ischemic heart disease and heart failure, individual subgroup numbers not indicated	7
Du et al, 2020[6]	China, Wuhan	Retrospective cohort, 15/14/2020 to 14/3/2020 Median follow-up time = 42 days	164	84 (51.2)	61.8 SD = 13.6	6/164 (3.7)	-	• DM = 31 (18.9) • HTN = 52 (31.7) • CVD = 23 (14.0) • Obesity = 55(33.5) • HLD = 63 (38.4) • Smoking history = 17 (10.4) CVD = cardio-cerebrovascular disease	7
Eskandarian et al, 2021[7]	Iran	Prospective cohort, 03/2020 to 11/2020	3008	1684 (56.0)	59.3 SD = 18.7	373 (12.4)	-	• DM = 588 (19.5) • HTN = 695 (23.1) • CVD = 586 (19.5) • Smoking history = 50 (1.7)	7

Goshayeshi et al, 2020[8]	Iran	Retrospective cohort, 5/3/2020 to 12/5/2020	1278	793 (62)	56.9 SD = 18.7	353 (27.6)	151 (11.8)	• DM = 208 (16.3) • HTN = 172 (13.5) • CVD = 268 (21.0) CVD = cardiovascular disorder	9
Gupta et al, 2021[9]	India	Prospective observational, 28/3/2020 to 31/8/2020	710	530 (74.6)	48.4 SD = 16.4	50 (7.0)	65 (9.2)	• DM = 52 (7.5) • HTN = 87 (12.0) CVD = heart disease	7
Hatami et al, 2021[10]	Iran	Retrospective observational, 20/2/2020 to 14/5/2020	665	370 (55.6)	59.5 SD = 16.7	-	118 (17.7)	• DM = 182 (27.5) • HTN = 222 (33.5) • CVD = 130 (19.5) • Obesity = 92 (28.0)	9
He et al, 2021[11]	China, Wuhan	Retrospective cohort 20/1/2020 to 10/4/2020	173	111 (64.2)	73 IQR = 64-80.5	87 (50.3)	-	• DM = 29 (16.8) • HTN = 72 (41.6) • CVD = 29 (16.8) CVD defined as coronary heart disease	9
Islam et al, 2020[12]	Bangladesh	Retrospective observational, March to June 2020	1016	651 (64.1)	37 IQR = 28-49	25 (2.5)	-	• DM = 179 (17.6) • HTN = 145 (14.3) • CVD = 40 (3.9) • Smoking history = 185 (18.2)	7
Khoshnood et al, 2020[13]	Iran	Retrospective cohort, 22/2/2020 to 30/5/2020	1083	671 (61.9)	50.8 SD = 19.3	131 (12.1)	-	• DM = 134 (12.4) • HTN = 157 (14.5) • CVD = 150 (13.9) CVD defined as cardiovascular disease	9
Kim et al, 2021[14]	Korea	Retrospective cohort, 3 years prior COVID-19 patient diagnosis to 23 May 2020.	7590	3095 (40.8)	46.7 SD = 19.8	-	-	• DM = 1635 (21.5) • HTN = 1957 (25.8) • CVD = 670 (8.8) CVD defined as ischemic heart disease	8
Kim et al, 2021[15]	Korea	Retrospective cohort, 18/2/2020 to 10/7/2020	2254	808 (35.8)	57 IQR = 42-72	179 (7.9)	159 (7.1)	• DM = 375 (16.6) • HTN = 646 (28.7) • CVD = 110 (4.88) • Obesity = 426 (18.9) • Smoking history = 155 (6.9) CVD defined as ischemic heart disease	9
Kim et al, 2020[16]	Korea	Retrospective cohort, All COVID-19 patients up to 30/4/2020	2959	1179 (39.8)	-	-	133 (4.49)	• DM = 431 (14.6) • HTN = 697 (23.6) • CVD = 112 (3.8) • Obesity = 1781 (60.2)	9
Lee et al, 2020[17]	Korea	Retrospective cohort All COVID-19 up to 15/5/2020	7339	2970 (40.1)	47.1 SD = 19	227 (3.1)	927(12.6)	• DM = 857 (11.6) • HTN = 1373 (18.6) • CVD = 455 (6.2) CVD defined as cardiovascular and cerebrovascular disease	9

Marimuthu et al, 2021[18]	India	Record-based longitudinal study 06/2020 to 09/2020, patients followed till discharge or death from the hospital	854	483 (56.6)	45.3 SD = 17.2	87 (10.2)	-	• DM = 200 (23.4) • HTN = 198 (23.2) • CVD = 37 (4.3) • Smoking history = 10 (1.2) CVD = cardiac illnesses	9
Moftakhar et al, 2021[19]	Iran	Retrospective observational 03/2020 to 09/2020 followed up till final outcome	16391	8940 (54.6)	38 IQR = 30-51	691/16391 (4.2)	-	• DM = 1365 (8.3) • HTN = 896 (5.5) • CVD = 815 (5.0) • HLD = 52 (0.3) CVD = cardiovascular disease	9
Mohandas et al, 2021[20]	India	Retrospective cohort 8/4/2020 to 7/8/2020	3345	2314 (69.2)	47.6 SD = 16.7	142 (4.2)	13.2%	• DM = 1240 (37.1) • HTN = 974 (29.1) • CVD = 200 (6.0) CVD = coronary artery disease	7
Nikpouraghdam et al, 2020[21]	Iran	Retrospective cohort 19/2/2020 to 15/4/2020	2964	1955 (66.0)	Mean: 55.5 SD = 15.2 Median: 56 IQR = 46-65	239 (8.1)	-	• DM = 113 (3.81) • HTN = 59 (2.0) • CVD = 37 (1.3) CVD = cardiovascular disease	9
Priya et al, 2021[22]	India	Cross-sectional Patients included from 03/2020 to 08/2020. Study period was from 09/2020 to 10/2020	4530	2720 (60.0)	Mean = 46.6 Median = 48	381 (8.4)	-	• DM = 638 (14.1) • HTN = 289 (6.4) • CVD = 53 (1.2) CVD = heart disease	9
Rashidi et al, 2021[23]	Iran	Prospective cohort 20/2/2020 to 10/4/2020, followed up for a minimum of 45 days after hospital discharge	1529	832 (54.4)	56 IQR = 32-80	51 (3.3)	-	• DM = 274 (17.9) • HTN = 438 (28.7) • CVD = 186 (12.2) • Obesity = 206 (13.5) CVD = ischemic cardiac disease	9
Sharif et al, 2021[24]	Bangladesh	Retrospective observational 10/12/2020 to 10/02/2021	799	526 (65.8)	49 SD = 7.8	40%	-	• DM = 32.7% • CVD = 42.2% • Obesity = 18% Did not state what CVD constitutes in the study	8
Shi et al, 2020[25]	China, Wuhan	Retrospective cohort 1/1/2020 to 8/1/2020	306	75 (49.0)	64 IQR = 56-72	47 (18.4)	39 (15.2)	• DM = 153 (50.0) • HTN = 131 (51.2) • CVD = 49 (19.1) • Smoking history = 16 (6.3)	9
Surendra et al, 2021[26]	Indonesia	Retrospective cohort 2/3/2020 to 31/7/2020	4265	2217 (52%)	46 IQR = 32-57	497 (12%)	102 (3%)	• DM = 501 (12%) • HTN = 795 (19%) • CVD = 392 (10%)	9
Terada et al, 2021[27]	Japan	Observational cohort 16/1/31 to 31/5/2020	3373	2062 (61.1)	non-severe, n = 2196: age (median	243 (7.2)	-	• DM = 562 (16.7) • HTN = 623 (18.5) • CVD = 183 (5.4) • Obesity = 178 (5.3) • HLD = 333 (9.87)	9

					IQR)) = 50 (35, 64) severe, n = 1180: age (median IQR)) = 67 (53, 78)			CVD consists of myocardial infarction, congestive heart failure, peripheral vascular disease	
Wei et al, 2021[28]	China, Multicentered	Retrospective observational 3/1/2020 to 26/2/2020, followed up till 8/3/2020	498	259 (52.0)	49 IQR = 37-59	10 (2.0)	56 (11.2)	• DM = 43 (86.3) • HTN = 81 (16.2) • HLD = 14 (2.8)	8
Yan et al, 2020[29]	China	Retrospective cohort 13/1/2020 to 13/4/2020	1160	606 (52.2)	Median = 46 Q1, Q3 - 33.0, 57.0	-	158/1160 (13.6)	• DM = 89 (7.7) • HTN = 188 (16.2) • CVD = 73 (6.3)	9
You et al, 2020[30]	Korea	Retrospective observational 20/1/2020 to 31/3/2020 followed up until death from COVID-19 or discharge from hospital	5473	2439 (44.6)	-	84 (1.5)	154 (2.8)	• DM = 495 (9.0) • HTN = 1064 (19.4)	9
Yu et al, 2020[31]	China, Shanghai	Retrospective observational all confirmed cases up to 19/2/2020	333	172 (51.7)	50 IQR = 35-63	-	-	• DM = 28 (8.4) • HTN = 64 (19.2) • CVD = 24 (7.2) • Obesity = 146 (43.8) • Smoking = 26 (7.8) Did not state what CVD constitutes in the study	9

CMRF, cardiometabolic risk factors; CVD, cardiovascular disease; DM, diabetes mellitus; HLD, hyperlipidaemia; HTN, hypertension; IQR, interquartile range; SD, standard deviation

Supplementary Table 3. Pooled incidence and prevalence rates of mortality, ICU admission rates and cardiometabolic factors

Factors	Number of studies	Pooled rates (95% CI)
Mortality	26	9.4% (6.5%-13.3%)
ICU admission	9	9.6% (6.3%-14.3%)
DM	26	18.2% (14.0%-23.2%)
Hypertension	25	20.6% (15.5%-27.0%)
Cardiovascular diseases	22	9.5% (6.3%-13.9%)
Obesity	8	9.5% (6.0%-14.7%)
Smoking	7	7.0% (3.0%-15.4%)
Hyperlipidemia	3	2.1% (0.4%-10.2%)

CI, confidence intervals; DM, diabetes mellitus; ICU, intensive care unit

Supplementary Table 4. Risk of bias assessment of studies using the Newcastle-Ottawa Score (NOS)

Author (Year)	Patients with CVRF or CVD (exposure) truly/somewhat representative of the community	Patients without CVRF or CVD drawn from the same community	Ascertainment of CVRF or CVD	Outcome of interest (mortality/ ICU admission) not present at the start of study	Cohorts adjusted for age	Cohorts adjusted for other important confounding factors	Quality of outcome assessment	Follow-up/observation long enough for outcomes to occur	Adequacy of following-up of cohorts	NOS Quality score
Alamdari et al, 2020[1]	✓	✓	✓	✓	✗	✓	✓	✓	✓	8
Baqi et al, 2021[2]	✓	✓	✓	✓	✗	✗	✓	✓	✓	7
Chen et al, 2020[3]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Cho et al, 2020[4]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Deeb et al, 2021[5]	✓	✓	✓	✓	✓	✓	✓	✗	✗	7
Du et al, 2020[6]	✓	✓	✓	✓	✓	✓	✓	✗	✗	7
Eskandarian et al, 2021[7]	✓	✓	✓	✓	✗	✗	✓	✓	✓	7
Goshayeshi et al, 2020[8]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Gupta et al, 2021[9]	✓	✓	✓	✓	✗	✗	✓	✓	✓	7
Hatami et al, 2021[10]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
He et al, 2021[11]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Islam et al, 2020[12]	✓	✓	✓	✓	✗	✗	✓	✓	✓	7
Khoshnood et al, 2020[13]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Kim et al, 2021[14]	✓	✓	✓	✗	✓	✓	✓	✓	✓	8
Kim et al, 2021[15]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Kim et al, 2020[16]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Lee et al, 2020[17]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Marimuthu et al, 2021[18]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Moftakhar et al, 2021[19]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Mohandas et al, 2021[20]	✓	✓	✓	✓	✗	✗	✓	✓	✓	7
Nikpouraghdam et al, 2020[21]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Priya et al, 2021[22]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Rashidi et al, 2021[23]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Sharif et al, 2021[24]	✓	✓	✓	✓	✓	✓	✓	✓	✗	8
Shi et al, 2020[25]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Surendra et al, 2021[26]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Terada et al, 2021[27]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Wei et al, 2021[28]	✓	✓	✓	✓	✓	✓	✓	✗	✓	8
Yan et al, 2020[29]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
You et al, 2020[30]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Yu et al, 2020[31]	✓	✓	✓	✓	✓	✓	✓	✓	✓	9

Supplementary Table 5. Sensitivity analysis performed based on regional differences between North and South Asia for Mortality

Clinical characteristics	No. of included studies	Pooled OR (95% CI)	p-value	Test for heterogeneity: chi-squared	df	p-value	I^2
DM	24	2.85 (2.25-3.62)	<0.001	222.62	23	<0.001	90.22%
North Asia	8	3.56 (2.33-5.43)	<0.001	43.66	7	<0.001	89.71%
*South Asia**	16	2.55 (1.94-3.37)	<0.001	147.42	15	<0.001	89.14%
Hypertension	23	2.51 (1.93-3.27)	<0.001	250.93	22	<0.001	91.14%
North Asia	8	3.17 (1.91-5.27)	<0.001	89.9	7	<0.001	92.02%
*South Asia**	15	2.21 (1.66-2.95)	<0.001	139.14	14	<0.001	88.82%
CVD	19	2.75 (2.09-3.62)	<0.001	115.48	18	<0.001	86.26%
North Asia	5	4.37 (3.23-5.92)	<0.001	10.96	4	0.027	64.81%
*South Asia**	14	2.28 (1.68-3.20)	<0.001	92.9	13	<0.001	85.79%
CVD-only subgroup†	15	2.33 (1.73-3.16)	<0.001	90.52	14	<0.001	83.73%
HLD	2	1.07 (0.70-1.61)	0.76	0.78	1	0.38	0
Obesity	4	1.18 (0.74-1.89)	0.49	7.08	3	0.069	60.48%
Smoking	6	1.83 (0.93-3.58)	0.079	28.42	5	<0.001	83.04%

*Inclusive of Indonesia

† refers to CVD with cerebrovascular diseases and heart failure

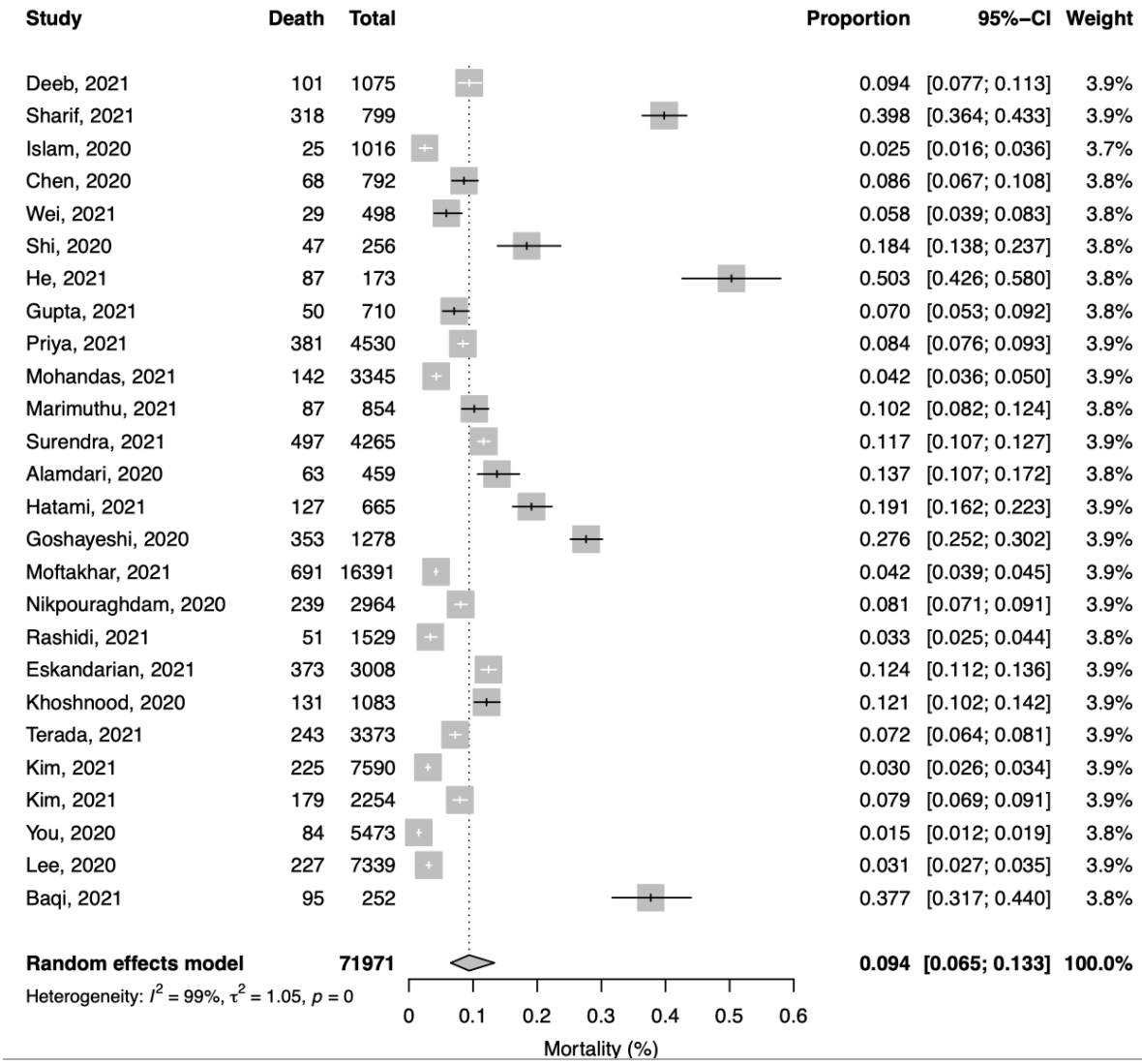
CI, confidence intervals; CVD, cardiovascular disease; df, degree of freedom; DM, diabetes mellitus; HLD, hyperlipidaemia; OR, odds ratio

Supplementary Table 6. Univariate and multivariate regression performed on DM, hypertension and CVD

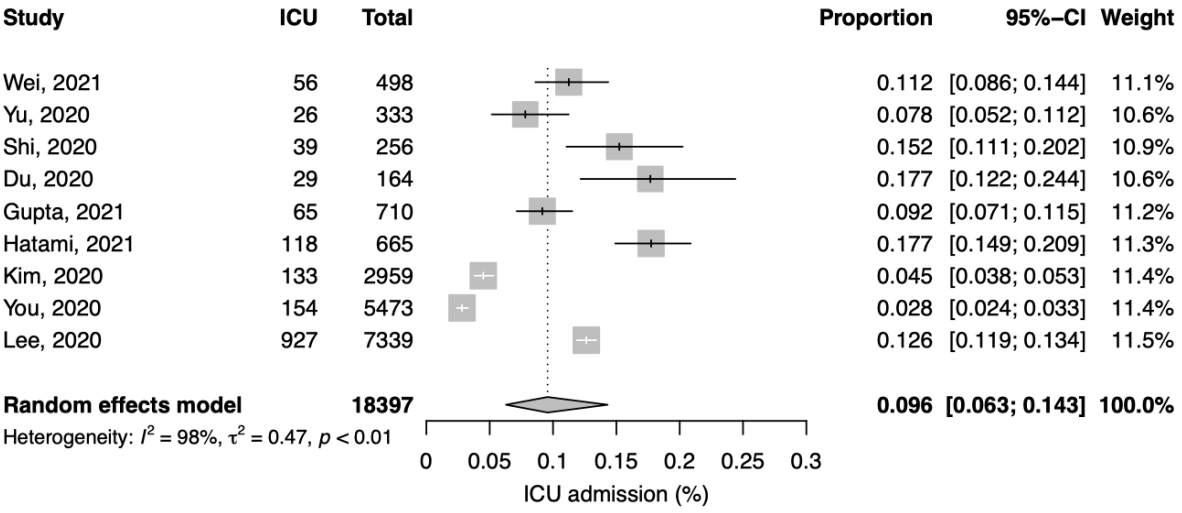
		Univariate Regression		Multivariate Regression	
Factors	**covariates**	**Coef. (95% CI)**	**p-value**	**Coef. (95% CI)**	**p-value**
DM	Male	-0.020 (-0.038, -0.003)	0.025	-0.017 (-0.030, -0.004)	0.013
	Age	-0.052 (-0.076, -0.027)	<0.0001	-0.049 (-0.071, -0.028)	<0.0001
	Location (North vs South)*	0.34 (-0.15, 0.83)	0.18		
HTN	Male	-0.022 (-0.042, -0.002)	0.031	-0.020 (-0.037, -0.0026)	0.024
	Age	-0.04 (-0.069, -0.010)	0.009	-0.037 (-0.064, -0.0099)	0.007
	Location (North vs South)*	0.37 (-0.17, 0.92)	0.18		
CVD	Male	-0.02 (-0.04, 0.0002)	0.052		
	Age	-0.05 (-0.08, -0.014)	0.005	-0.052 (-0.077, -0.027)	<0.0001
	Location (North vs South)*	0.60 (0.05, 1.16)	0.033	0.57 (0.24, 0.90)	0.0007

CVD, cardiovascular disease; DM, diabetes mellitus; HTN, hypertension

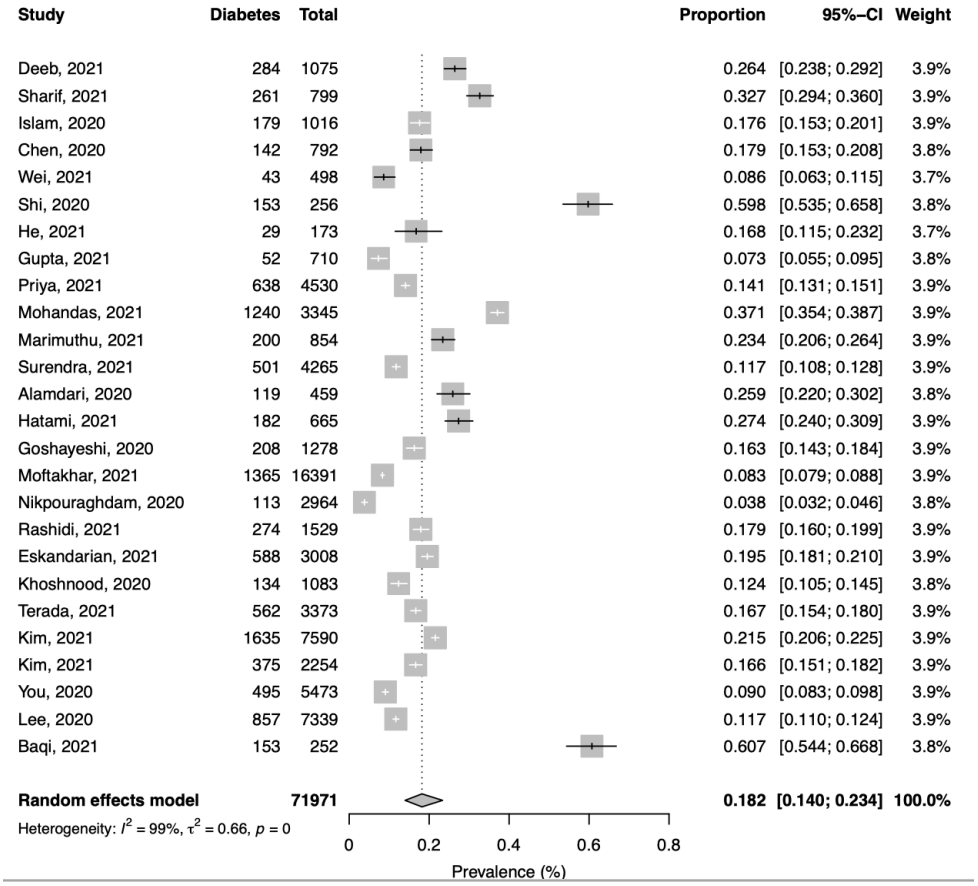
Supplementary Figure 1. Meta-analyses of the pooled mortality from COVID-19 in the Asia Pacific region



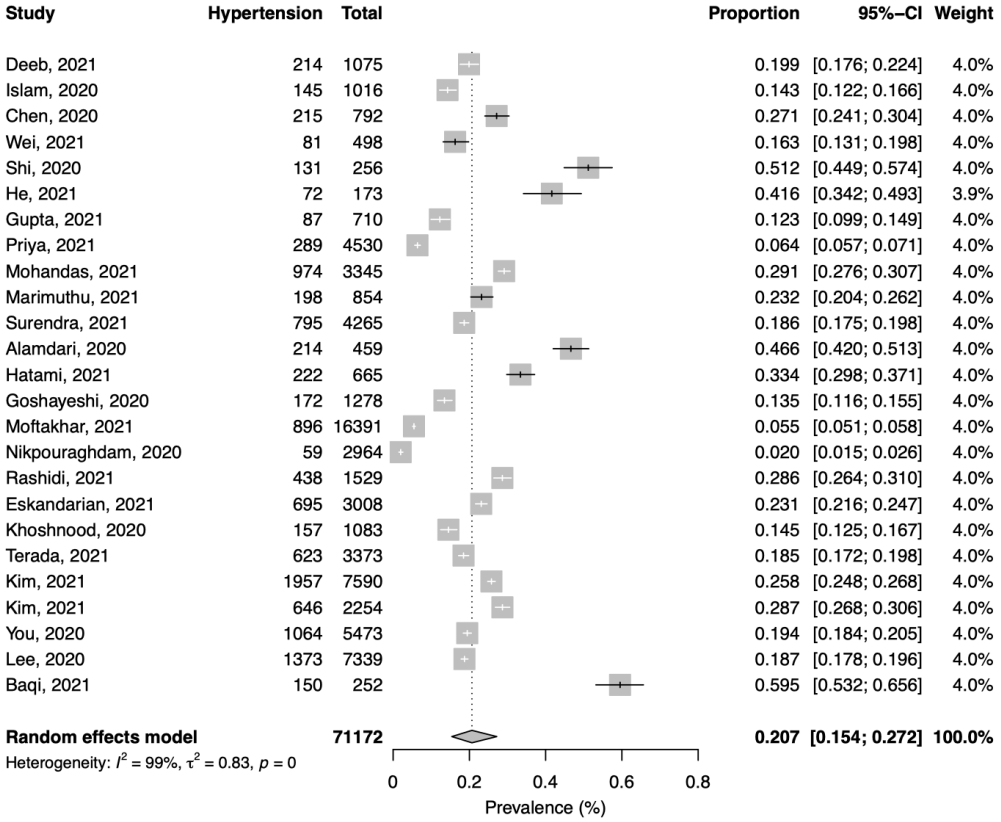
Supplementary Figure 2. Meta-analyses of the pooled ICU admission rates from COVID-19 in the Asia Pacific region



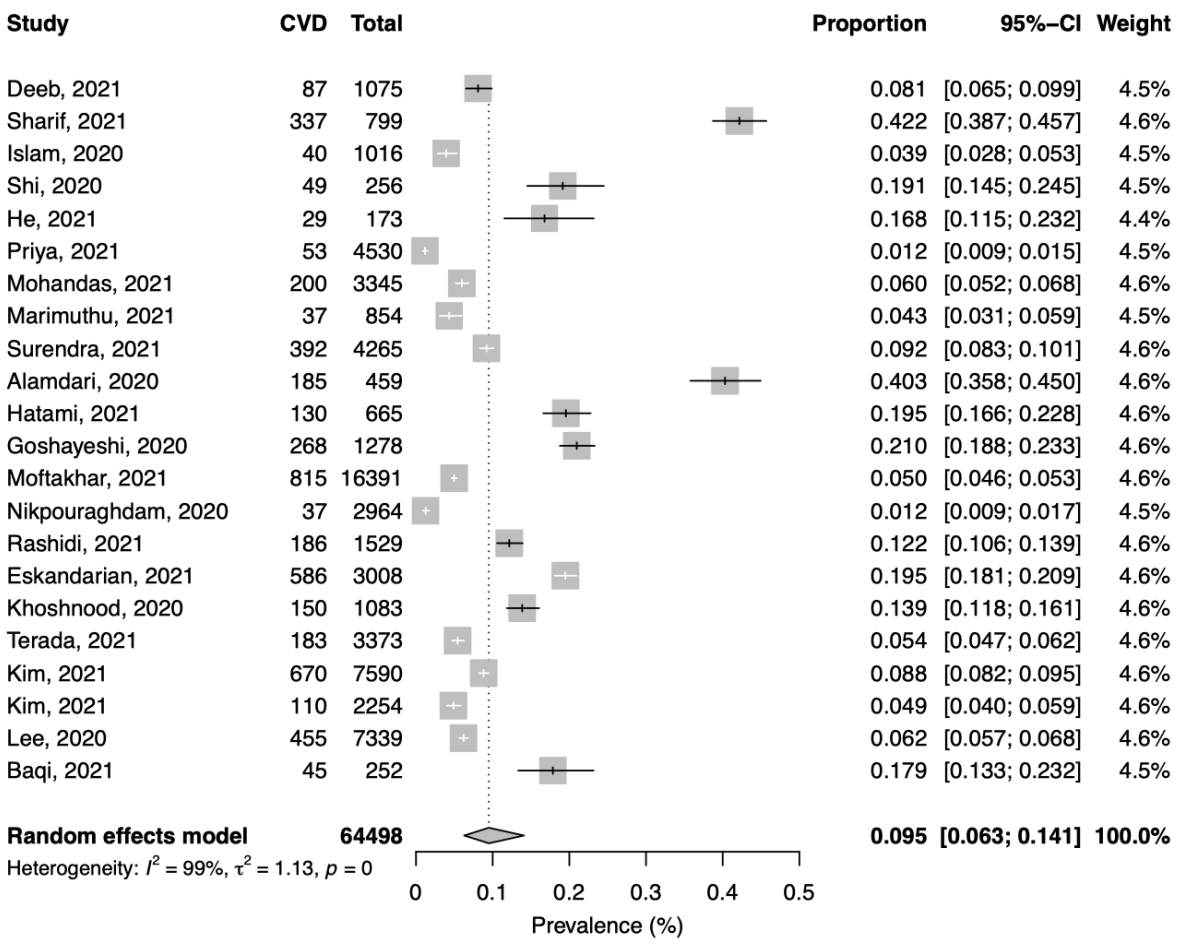
Supplementary Figure 3. Meta-analyses of the prevalence of diabetes



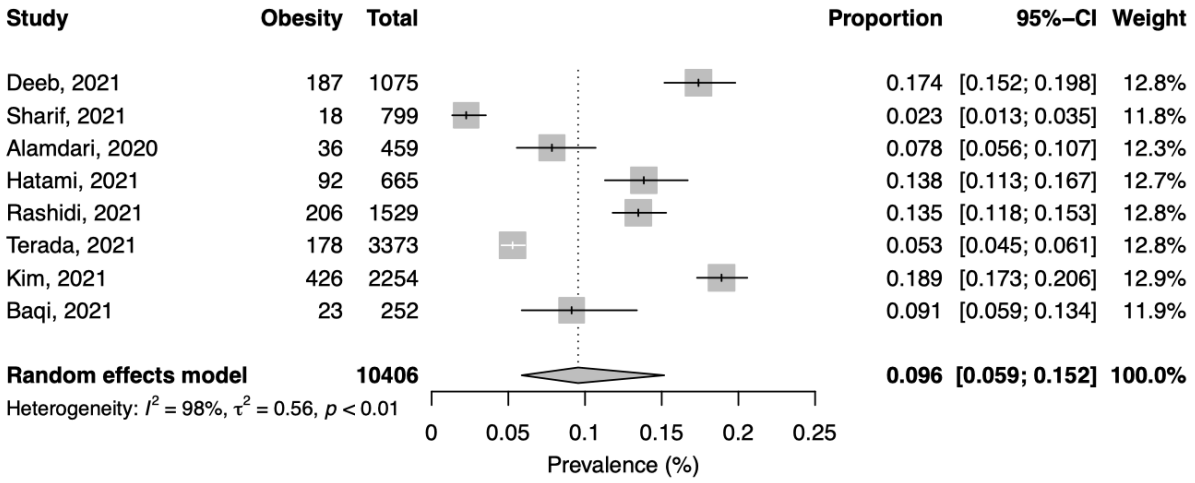
Supplementary Figure 4. Meta-analyses of the prevalence of hypertension



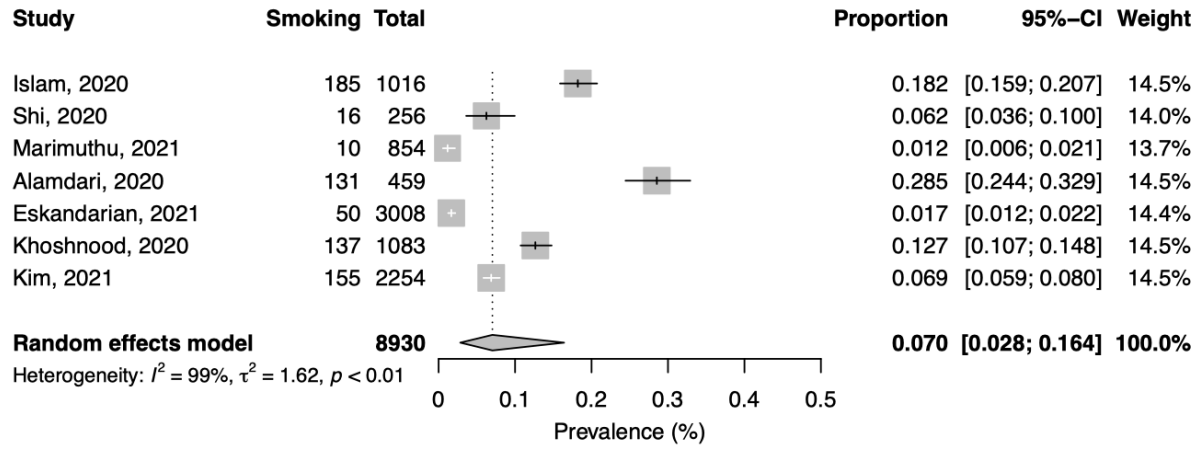
Supplementary Figure 5. Meta-analyses of the prevalence of cardiovascular disease



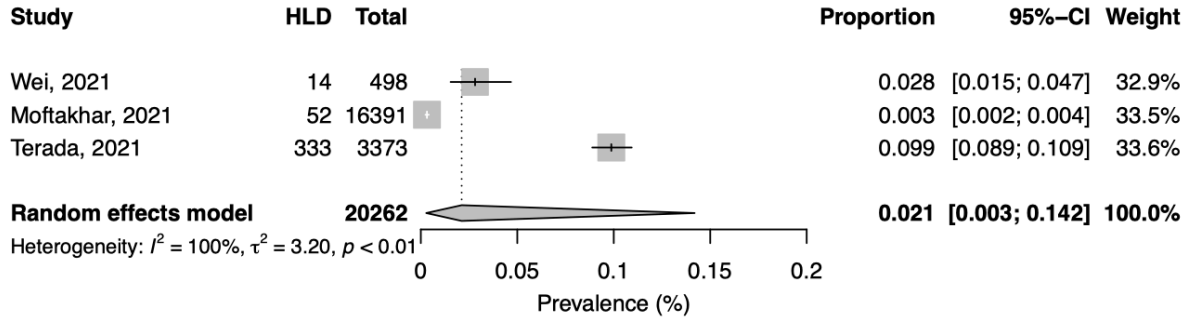
Supplementary Figure 6. Meta-analyses of the prevalence of obesity



Supplementary Figure 7. Meta-analyses of the prevalence of smoking

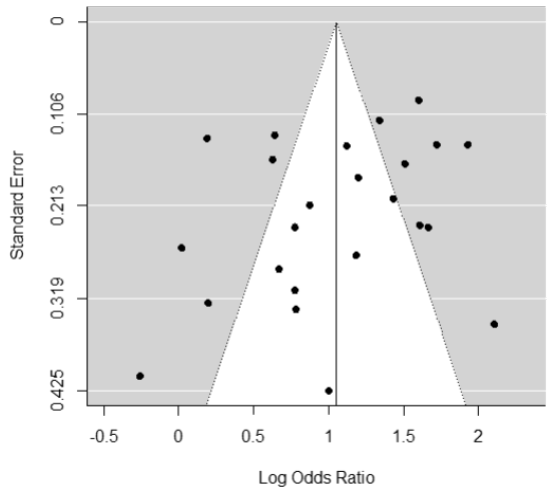


Supplementary Figure 8. Meta-analyses of the prevalence of hyperlipidaemia



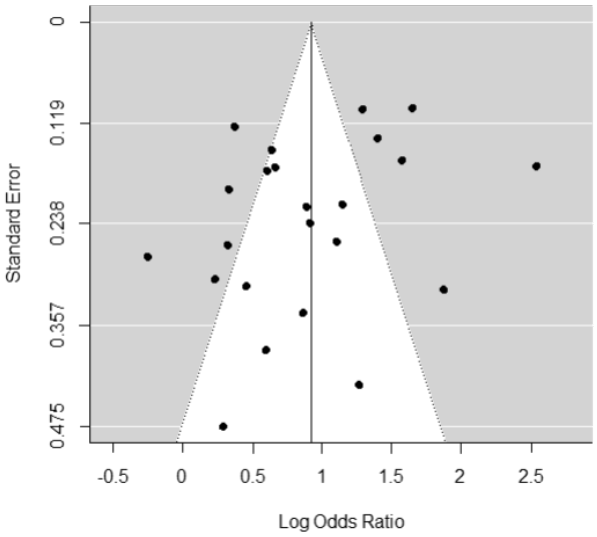
Supplementary Figure 9. Funnel plots for mortality and results of Egger's test to examine for publication bias.

(A) Diabetes Mellitus



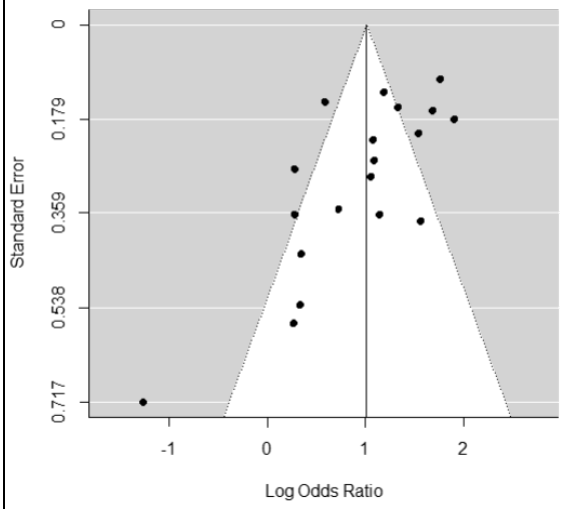
Egger's test: p = 0.15

(B) Hypertension



Egger's test: p = 0.13

(C) Cardiovascular disease



Egger's test: p = 0.01

The funnel plot for the visual assessment of publication bias is given above. The horizontal line indicates the summary risk estimate of log RR, while the sloping lines indicate the expected 95% confidence intervals for a given standard error, assuming no heterogeneity between studies. Funnel plot for diabetes mellitus and hypertension studies showed no visual asymmetry. Egger's test indicates that the null hypothesis of symmetry cannot be rejected given that P>0.05. Funnel plot for cardiovascular disease showed an underrepresentation of small studies with Egger's test p = 0.01.

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