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Global health inequalities of chronic kidney disease

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Supplementary Material Table of Contents

Supplementary Methods

***Risk of bias assessment adapted from Stanifer et al*[1]**

1. Subject sampling and precision
   a. Are the included people representative of the general population?
      i. If people were included on the basis of hospital records, insurance claims, or health-care facilities then they should not be considered representative of the general population
   b. People are not included or excluded on the basis of specific risk factors
      i. High risk people such as those with diabetes, HIV, hypertension, should not be sought out specifically for inclusion or exclusion
   c. Is the sample size adequate to address the question of prevalence in the studied population?
      i. At least 500 participants included
2. Sampling technique
   a. Were the people recruited at random?
      i. Methods should address the issue of enrolling consecutive participants, people likely to have the disease or at high risk, and convenience sampling
3. Response rate
   a. Does the article report a response rate in total sample?
   b. Is the response rate 40% of higher?
4. Exclusion rate
   a. Does the article report an exclusion rate in the total sample?
   b. Is the exclusion rate 10% or less?
5. Measurement and method of determination of kidney disease
   a. Does the study report the method used for determination of kidney disease
   b. Does the study use a consistent method for determination of kidney disease

High quality studies: answer yes to all questions

Medium quality studies: yes to the following

1. If participants are not representative of the general population, then are they representative of the population in question?
2. If participants were not recruited at random, then were they recruited in a random non-health care convenience method from the entire population in question?
3. Is the study sample size adequate to answer the question of prevalence in the studied population?
4. Does the study use a consistent method for determination of kidney disease?

Low quality studies: would be unable to answer yes to all of the above questions

R packages used for statistical analysis

Meta-analyses of pooled prevalence was performed using the metaprop function from the R package “meta”[2] and results were presented as forest plots. GOSH[3] (graphic display of heterogeneity) plots were created using the “metafor”[4] package to identify any clusters within the data. Influence analysis was carried out by creating Baujat plots and generating influence diagnostics according to Viechtbauer *et al*[5] using the “dmetar” package.[6]

Methods of exploration of heterogeneity

A study was considered to be an outlier if its confidence interval did not overlap with the confidence interval of the pooled effect, which led to a large number of outlying studies being identified. However, as demonstrated in the sensitivity analysis, there was not a markedly different pooled prevalence when removing these studies.

Influence diagnostics were also carried out. Baujat plots were generated to visually identify studies having a significant influence on effect size and heterogeneity, and forest plots using the leave-one-out method were also generated. GOSH (graphical display of between-study heterogeneity) plots were created to identify particular clusters within the data. Sensitivity analyses were carried out by excluding outliers and influential cases, as well as excluding papers with a high risk of bias.

Supplementary table S1: Search strategy for Medline. Search adapted for other databases as required.

1	Exp Kidney failure, chronic (MESH)
2	Exp Renal insufficiency, chronic (MESH)
3	Exp Glomerular Filtration Rate (MESH)
4	Chronic renal impairment (keyword)
5	Chronic kidney disease (keyword)
6	Chronic kidney failure (keyword)
7	Chronic renal disease (keyword)
8	Reduced glomerular filtration rate (keyword)
9	Reduced egfr (keyword)
10	Low glomerular filtration rate (keyword)
11	Low egfr (keyword)
12	Low GFR (keyword)
13	CKD-EPI (keyword)
14	MDRD (keyword)
15	Cockcroft-Gault (keyword)
16	CKD (keyword)
17	ESRD (keyword)
18	End stage renal disease (keyword)
19	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
20	Exp prevalence (MESH)
21	Prevalence (keyword)
22	20 or 21
23	Exp epidemiologic studies (MESH)
24	Exp case-control studies (MESH)
25	Exp cohort studies (MESH)
26	Exp cross-sectional studies (MESH)
27	Population (keyword)
28	Community (keyword)
29	National (keyword)
30	23 or 24 or 25 or 26 or 27 or 28 or 28
31	19 and 22 and 30
32	Limit 31 to humans, English and French language only, publish date 2014 – current

Supplementary table S2: Eligibility confirmation criteria

Criteria	**Yes**	**No**
Inclusion		
Study describes CKD prevalence		
Study conducted in the general population		
Study published from 1st September 2014 – 28th September 2022		
Study participants aged 18 or over		
CKD defined as either presence of albuminuria/proteinuria and/or an eGFR of <60ml/min/1.73m^2		
Study is an observational, quantitative design		
Exclusion		
Study is a qualitative study, case report/case series, animal study, opinion piece		
Study only discusses CKD stages 1 and 2		
Study reported in language other than English or French		
CKD not defined as per KDIGO criteria		

Supplementary table S3: Definitions of specific CKD stages. ACR=albumin to creatinine ratio; e GFR=estimated glomerular filtration rate in mL/min/1.73m^2

Stage 1	eGFR ≥90, ACR >3mg/mmol
Stage 2	eGFR 60 – 89, ACR >3mg/mmol
Stage 3A	eGFR 45 – 59
Stage 3B	eGFR 30 – 44
Stage 4	eGFR 15 – 29
Stage 5	eGFR <15

Supplementary table S4: List of elements covered within the data extraction form.

Population	Country, sample size, income status, response rate, exclusion rate, age range, mean age, number and percentage female, baseline characteristics including diabetes, hypertension, smoking, obesity, mean BMI
Intervention/exposure	How CKD was defined, method of calculating eGFR, whether chronicity was included within definition
Comparison	Not applicable
Outcome	CKD prevalence (crude or adjusted) of stages 1-5, 3-5, males, females, specific stages
Studies	Study type, sampling technique, dates between which data were collected, publication year, title and author details

Supplementary table S5: Studies included following search and full text review**.** T = total; M = male; F = female; DM = diabetes mellitus; HTN = hypertension; BMI = body mass index; NA = no available data; ROB = risk of bias; CKD-EPI = Chronic Kidney Disease Epidemiology Collaboration; MDRD = Modification of Diet in Renal Disease; CG = Cockcroft-Gault; BIS = Berlin Initiative Study; CAPA = Caucasian and Asian paediatric and adult subjects; FAS = Full Age Spectrum; EKFC = European Kidney Function Consortium; eGRF = estimated glomerular filtration rate, * = not included in meta-analysis

Author (published date)	**Country**	**Study period**	**Number included**	**Age group Mean age**	**Study design**	**Co-morbidities**	**Method of eGFR estimation**	**Overall ROB**	**CKD stages 1-5 prevalence**	**CKD stages 3-5 prevalence**	**Test for chronicity**
*Barrett-Bowling (2014)[7]	USA	1988 – 1994 1999 – 2004 2005 – 2010	1988-1994 T: 1020 M: NA F: NA 1999-2004 T: 995 M: NA F: NA 2005-2010 T: 971 M: NA F: NA	>80	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	1988-1994: T: 2.34% M: NA F: NA 1999-2004: T: 3.55% M: NA F: NA 2005-2010: T: 4.58% M: NA F: NA	No
De Nicola (2014)[8]	Italy	2008 – 2012	T: 7552 M: 3848 F: 3704	>35 56.7	Random sampling	DM: 11.8% HTN: 50.1% Smoking: 19.9% Obesity: 26.4% Mean BMI: 27.5	CKD-EPI	Moderate	T: 532 M: 290 F: 242	T: 218 M: 106 F: 112	No
Dutra (2014)[9]	Brazil	2010-2011	T: 822 M: 316 F: 506	>60 68.6	Random sampling	DM: 23.8% HTN: 86.9% Smoking: 40.7% Obesity: 37.3% Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 112 M: NA F: NA	No
*Fan (2014)[10]	Iceland	2007 – 2011	T: 805 M: 355 F: 450	NA 80.3	Random sampling	DM: 23.6% HTN: NA Smoking: NA Obesity: 19.0% Mean BMI: 27	CKD-EPI BIS, CAPA, Japanese equation (not used for meta-analysis)	Moderate	T: NA M: NA F: NA	T: 314 M: 126 F: 188	No
Kuo (2014)[11]	Taiwan	2005 – 2007	T: 32542 M: 19685 F: 12857	>20 NA	Other	DM: 31.7% HTN: 28.9% Smoking: NA	MDRD CG (not used in meta-analysis)	High	T: NA M: NA F: NA	T: 1643 M: 983 F: 660	No

						Obesity: NA Mean BMI: NA					
Anand (2015)[12]	India	2010 – 2011	T: 9797 M: 4559 F: 5238	>20 NA	Random sampling	DM: NA HTN: 31.2% Smoking: 20.3% Obesity: 13.9% Mean BMI: NA	CKD-EPI	Moderate	T: 817 M: NA F: NA	T: 187 M: NA F: NA	No
Aumann (2015)[13]	Germany	SHIP-1: 2002 – 2006 KORA-F4: 2006 – 2008	SHIP-1 T: 3014 M: NA F: NA KORA-F4 T: 3040 M: NA F: NA	>31 NA >31 NA	Random sampling	SHIP-1 DM: 10.6% HTN: 59.3% Smoking: 27.3% Obesity: NA Mean BMI: 27.6 KORA-F4 DM: 7% HTN: 38.1% Smoking: 18% Obesity: NA Mean BMI: 27.0	CKD-EPI	Low	SHIP-1 T: NA M: NA F: NA KORA-F4 T: NA M: NA F: NA	SHIP-1 T: 205 M: NA F: NA	No
Francis (2015)[14]	Peru	2011	T: 404 M: 203 F: 201	>35 54.9	Random sampling	DM: 9.9% HTN: 29.2% Smoking: 13.4% Obesity: 33.2% Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 68 M: 21 F: 47	No
Kaze (2015)[15]	Cameroon	2014	T: 439 M: 185 F: 254	>20 47	Random sampling	DM: 5.9% HTN: 10.7% Smoking: 9.3% Obesity: NA Mean BMI: 26.0	CKD-EPI MDRD, CG (not used in meta-analysis)	High	T: 121 M: 19 F: 39	T: 48 M: NA F: NA	Yes
Kim (2015)[16]	Korea	2007 – 2013	T: 45208 M: 20038 F: 25170	>18 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	MDRD	Moderate	T: NA M: NA F: NA	T: 1304 M: 555 F: 749	No
Lebov (2015)[17]	Nicaragua	2010 – 2011	T: 2275 M: 1054 F: 1434	>18 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI MDRD (not used for meta-analysis)	Low	T: NA M: NA F: NA	T: 170 M: 118 F: 52	No

MacLaughlin (2015)[18]	United Kingdom	2010	T: 3463 M: NA F: NA	>18 51.1	Random sampling	DM: 6% HTN: 24.8% Smoking: NA Obesity: NA Mean BMI: 27.6	CKD-EPI MDRD (not used in meta-analysis)	Moderate	T: NA M: NA F: NA	T: 204 M: NA F: NA	No
Mota (2015)[19]	Romania	2012 – 2014	T: 2717 M: NA F: NA	>20 47.7	Automated computer selection based on general practitioner databases	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI MDRD (not used for meta-analysis)	High	T: 247 M: NA F: NA	T: 102 M: NA F: NA	No
Naghibi (2015)[20]	Iran	2012	T: 1285 M: 525 F: 760	>20 41.9	Random sampling	DM: 7.9% HTN: 11.4% Smoking: 3.3% Obesity: NA Mean BMI: NA	MDRD	Moderate	T: NA M: NA F: NA	T: 65 M: 27 F: 38	No
Pan (2015)[21]	China	2010 – 2011	T: 7588 M: 3566 F: 4022	>18 47.63	Random sampling	DM: 3.4% HTN: 14.7% Smoking: 15.3% Obesity: NA Mean BMI: 21.49	CKD-EPI	High	T: 722 M: NA F: NA	T: 262 M: 111 F: 153	No
Ricardo (2015)[22]	USA	2008-2011	T: 14035 M: 6129 F: 9032	>18 41.1	Random sampling	DM: 14.6% HTN: 21.8% Smoking: 21.1% Obesity: 39.9% Mean BMI: NA	CKD-EPI	Moderate	T: 2112 M: 932 F: 1228	T: 386 M: NA F: NA	No
So (2015)[23]	United Kingdom	2010-2011	T: 313639 M: NA F: NA	>18 50.0	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	MDRD	High	T: NA M: NA F: NA	T: 18285 M: NA F: NA	Yes
Stanifer (2015)[24]	Tanzania	2014	T: 481 M: 123 F: 358	>18 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	MDRD	High	T: 57 M: 17 F: 40	T: NA M: NA F: NA	No
Wang (2015)[25]	China	2011 – 2012	T: 8659 M: 4118 F: 4541	>45 NA	Random sampling	DM: 15.2% HTN: 41.4% Smoking: NA Obesity: 9.60%	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 826 M: 422 F: 404	No

						Mean BMI: NA					
Agyemang (2016)[26]	Netherlands	2011 – 2014	T: 12888 M: 5423 F: 7456	>18 NA	Random sampling	DM: 9.9% HTN: 34.5% Smoking: NA Obesity: 26.3% Mean BMI: NA	CKD-EPI	Moderate	T: 800 M: NA F: NA	T: 171 M: NA F: NA	No
Benghanem (2016)[27]	Morocco	2009 – 2011	T: 10524 M: 5122 F: 5402	>26 NA	Random sampling	DM: 16.8% HTN: 21.9% Smoking: NA Obesity: 24.2% Mean BMI: Na	MDRD	Moderate	T: 442 M: NA F: NA	T: 284 M: NA F: NA	No
Ene-Iordache (2016)[28]	China, Mongolia, India, Nepal, Iran, Nigeria, Moldova, Bolivia	NA	T: 7340, 832, 3196, 21066, 31615, 1912, 1403, 3410 M: NA F: NA	>18 53.4, 41.4, 50.1, 40.8, 43.8. 44.3, 50.7, 41.6	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: 2195, 150, 537, 4243, 1992, 440, 358, 188 M: NA F: NA	T: 954, 80, 80, 3413, 1834, 396, 157, 58 M: NA F: NA	No
Gasparini (2016)[29]	Sweden	2006 – 2011	T: 1128058 M: 516989 F: 611160	>18 NA	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 68964 M: 27076 F: 41888	Yes
*Girndt (2016)[30]	Germany	2008 – 2011	T: 7115 M: 3410 F: 3705	>18 47.4	Random sampling	DM: 6.6% HTN: 31.7% Smoking: 29.9% Obesity: NA Mean BMI: 26.9	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 163 M: NA F: NA	No
Hallan (2016)[31]	Norway	2006 – 2008	T: 50586 M: NA F: NA	>18 53.2	Random sampling	DM: 4.7% HTN: 38.7% Smoking: 21.0% Obesity: 22.5% Mean BMI: 27.2	CKD-EPI	High	T: 5620 M: NA F: NA	T: 2408 M: NA F: NA	No
Harhay (2016)[32]	Costa Rica	2005 – 2007	T: 2657 M: 1211 F: 1446	>60 76.0	Random sampling	DM: NA HTN: 45.6% Smoking: 7.9% Obesity: 22.3% Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 744 M: 206 F: 333	No
Huang (2016)[33]	China	2014	T: 24886 M: 11216 F: 13670	>65	Routine dataset	DM: 25.6% HTN: 41.4% Smoking: 9.9% Obesity: 4.8%	CKD-EPI	High	T: 4078 M: 1869 F: 2209	T: NA M: NA F: NA	No

						Mean BMI: NA					
*Ji (2016)[34]	Korea	2011 – 2012	T: 10636 M: 4758 F: 5878	>19 45.8	Random sampling	DM: 9,3% HTN: 27.8% Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: 1127 M: 488 F: 639	T: 380 M: 188 F: 192	No
Koeda (2016)[35]	Japan	2002 – 2004	T: 22975 M: 7841 F: 15134	>40 62.9	Random sampling	DM: 6.6% HTN: 41.5% Smoking; 12% Obesity: NA Mean BMI: 24	CKD-EPI	High	T: 6599 M: 2275 F: 4238	T: NA M: NA F: NA	No
Nalado (2016)[36]	Nigeria	NA	T: 450 M: 171 F: 279	>18 39.6	Random sampling	DM: 2.2% HTN: 18.4% Smoking: 8.2% Obesity: NA Mean BMI: 23.3	CG	High	T: 117 M: 45 F: 72	T: 10 M: NA F: NA	No
Okparavero (2016)[37]	Iceland	2007 – 2011	T: 3173 M: 1347 F: 1826	>66 80.1	Random sampling	DM: 12% HTN: NA Smoking: 8% Obesity: NA Mean BMI: 27	CKD-EPI	High	T: 1434 M: NA F: NA	T: 1257 M: 502 F: 755	No
Panday (2016)[38]	Suriname	2014 – 2017	T: 1117 M: 417 F: 700	>18 42.2	Random sampling	DM: 14.6% HTN: 40.4% Smoking: 30.3% Obesity: 36.6% Mean BMI: 27.8	CKD-EPI (eGFR >60) MDRD (eGFR <60)	High	T: 60 M: 27 F: 33	T: 34 M: NA F: NA	No
*Park (2016)[39]	Korea	2011 – 2013	T: 15319 M: 6891 F: 8428	>20 46.1	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: 8.2% M: 7.5% F: 8.9%	T: 2.5% M: 2.43% F: 2.5%	No
Peck (2016)[40]	Tanzania	2012 – 2013	T: 1043 M: 477 F: 566	>18 35.5	Random sampling	DM: 0.9% HTN: 17.3% Smoking: 10.4% Obesity: 6.6% Mean BMI: NA	CKD-EPI	Low	T: NA M: NA F: NA	T: 69 M: 35 F: 34	No
Pereira (2016)[41]	Brazil	2011 – 2013	T: 511 M: 165 F: 346	>20 45.2	Random sampling	DM: 11.5% HTN: 30.2% Smoking: 13.1% Obesity: NA	CG	High	T: NA M: NA F: NA	T: 25 M: 25 F: 31	No

						Mean BMI: 26.8					
Zdrojewski (2016)[42]	Poland	2011	T: 2413 M: 1168 F: 1245	>18 NA	Random sampling	DM: 6.7% HTN: 31.9% Smoking: NA Obesity: 22.3% Mean BMI: 26.7	CKD-EPI MDRD (not used for meta-analysis)	Moderate	T: 164 M: 62 F: 77	T: 80 M: 19 F: 27	No
Abdulkader (2017)[43]	Brazil	2010	T: 1253 M: 500 F: 753	>60 NA	Random sampling	DM: 27.9% HTN: 78.6% Smoking: NA Obesity: NA Mean BMI: NA	MDRD	Moderate	T: NA M: NA F: NA	T: 242 M: NA F: NA	No
Alkerwi (2017)[44]	Luxembourg	2007 – 2009	T: 1359 M: 662 F: 697	>18 NA	Random sampling	DM: 4.9% HTN: 38.0% Smoking: 21.9% Obesity: 23.5% Mean BMI: NA	CKD-EPI MDRD (not used for meta-analysis)	Moderate	T: 82 M: 44 F: 45	T: 15 M: NA F: NA	No
Cabarkapa (2017)[45]	Serbia	2015	T: NA M: 3060 F: NA	>18 NA	Convenience sampling from The Workers Health Care Centre	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: 27.2	CKD-EPI	High	T: NA M: 239 F: NA	T: NA M: 42 F: NA	No
Ebert (2017)[46]	Germany	2009 – 2011	T: 2069 M: 981 F: 1088	>70 80.4	Convenience sampling through insurance company	DM: 26.1% HTN: 78.8% Smoking: NA Obesity: 26.5% Mean BMI: NA	CKD-EPI MDRD, Lund Malmo, CG, BIS1, BIS2, CAPA (not used for meta-analysis)	High	T: NA M: NA F: NA	T: 784 M: NA F: NA	No
Faye (2017)[47]	Senegal	2012	T: 1411 M: 359 F: 1052	>35 48	Random sampling	DM: 7.2% HTN: 46.4% Smoking: 2.5% Obesity: 13% Mean BMI: NA	MDRD	High	T: 515 M: NA F: NA	T: 206 M: NA F: NA	No
Gergei (2017)[48]	Germany	2003 – 2007	T: 4080 M: 1623 F: 2457	>18 58.9	Routine dataset	DM: 23.3% HTN: 52.5% Smoking: 12.2% Obesity: NA Mean BMI: 27	CKD-EPI MDRD (not used for meta-analysis)	High	T: NA M: NA F: NA	T: 1426 M: 454 F: 972	No
Greffin (2017)[49]	Brazil	2011 – 2012	T: 581 M: 222	>45 59.35	Routine dataset	DM: 24.3% HTN: 71.3%	CKD-EPI	High	T: 162 M: NA	T: NA M: NA	No

			F: 359			Smoking: 51.4% Obesity: NA Mean BMI: 27.8			F: NA	F: NA	
Iwagami (2017)[50]	United Kingdom	2014	T: 2761755 M: 1352258 F: 1409497	>25 53	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 173162 M: NA F: NA	Yes
Kalyesubula (2017)[51]	Uganda	2012 – 2013	T: 955 M: 315 F: 640	>18 NA	Random sampling	DM: 2.4% HTN: 11.9% Smoking: 2.7% Obesity: 6.4% Mean BMI: NA	CKD-EPI MDRD, CG (not used for meta-analysis)	Moderate	T: 94 M: 41 F: 104	T: 2 M: NA F: NA	No
Konig (2017)[52]	Germany	2009 – 2014	T: 1628 M: 793 F: 835	>60 68.7	Random sampling	DM: 12.4% HTN: 77.1% Smoking: 9.3% Obesity: NA Mean BMI: 26.8	CKD-EPI MDRD, CG, FAS, Lund Malmo, BIS (not used for meta-analysis_	Moderate	T: 267 M: NA F: NA	T: 156 M: NA F: NA	No
Okwuonu (2017)[53]	Nigeria	2014	T: 328 M: 139 F: 189	>18 54.8	Random sampling	DM: 7.9% HTN: 36.9% Smoking: 6.1% Obesity: 11.6% Mean BMI: NA	MDRD	High	T: 25 M: 7 F: 18	T: 15 M: NA F: NA	Yes
Oluyombo (2017)[54]	Nigeria	2013	T: 1084 M: 362 F: 722	>18 56.3	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMIl NA	MDRD	Moderate	T: NA M: NA F: NA	T: 154 M: 28 F: 126	No
Piccolli (2017)[55]	Brazil	NA	T: 5216 M: 1877 F: 3339	>18 45	Random sampling	DM: 7.7% HTN: 29.5% Smoking: NA Obesity: NA Mean BMI: 27	MDRD	Moderate	T: 580 M: 173 F: 407	T: 439 M: NA F: NA	No
Sepanlou (2017)[56]	Iran	2010 – 2012	T: 11373 M: 5413 F: 5996	>40 56.2	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: 27.1	MDRD	Moderate	T: NA M: NA F: NA	T: 2700 M: 1112 F: 1588	No
Tran (2017)[57]	Vietnam	NA	T: 2037 M: 929 F: 1108	>19 42.3	Random sampling	DM: NA HTN: 28,3% Smoking: NA	MDRD	Low	T: 165 M: 113 F: 147	T: 48 M: NA F: NA	Yes

						Obesity: NA					
Trocchi (2017)[58]	Germany	2008 – 2011	T: 7001 M: 3364 F: 3637	>18 46.9	Random sampling	DM: 6.6% HTN: 31.5% Smoking: NA Obesity: NA Mean BMI: 26.2	CKD-EPI MDRD, Lund-Malmo, FAS (not used for meta-analysis)	Moderate	T: NA M: NA F: NA	T: 161 M: 57 F: 102	No
Zdrojewski (2017)[59]	Poland	NA	T: 918 M: 466 F: 452	>75 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	MDRD	Moderate	T: NA M: NA F: NA	T: 196 M: 67 F: 129	No
Cole (2018)[60]	United Kingdom	NA	T: 1213679 M: 1831031 F: 617352	>18 NA	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: 85519 M: NA F: NA	T: 78153 M: NA F: NA	Yes
Gorostidi (2018)[61]	Spain	2008 – 2010	T: 11505 M: 1362 F: 5675	>18 47	Random sampling	DM: 6.7% HTN: 32.9% Smoking: 27.2% Obesity: 22.6% Mean BMI: 26.8	CKD-EPI	Moderate	T: 1740 M: 1311 F: 426	T: 1362 M: NA F: NA	No
Ravi (2018)[62]	India	2015 – 2016	T: 2796 M: 1693 F: 1103	>18 46.16	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 120 M: 52 F: 68	No
Tsai (2018)[63]	Taiwan	1999 – 2009	T: 106094 M: 42091 F: 64003	>20 NA	Random sampling	DM: 5% HTN: 13% Smoking: NA Obesity: NA Mean BMI: 24.3	CKD-EPI	Moderate	T: 16402 M: 4549 F: 5065	T: 9614 M: NA F: NA	No
Amaral (2019)[64]	Brazil	2014	T: 983 M: 406 F: 577	>60 NA	Random sampling	DM: 16.4% HTN: 23.5% Smoking: 16.7% Obesity: 25.2% Mean BMI: NA	CKD-EPI	Moderate	T: 219 M: 96 F: 123	T: 140 M: NA F: NA	No
Bakhshayeshkaram (2019)[65]	Iran	2011 – 2012	T: 819 M: 340 F: 479	>18 43	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 136 M: 46 F: 90	No

						Mean BMI: NA					
Bello (2019)[66]	Canada	2010 – 2015	T: 559745 M: 221449 F: 338296	>18 48.5	Routine dataset	DM: 19.6% HTN: 33.6% Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 41501 M: NA F: NA	Yes
Chukwuonye (2019)[67]	Nigeria	2016	T: 400 M: 179 F: 221	>18 46.5	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 30 M: 9 F: 21	No
Duan (2019)[68]	China	2015 – 2017	T: 23869 M: 9597 F: 14272	>18 NA	Random sampling	DM: 11.4% HTN: 28.9% Smoking: 17.4% Obesity: NA Mean BMI: 24.4	CKD-EPI	Low	T: 4347 M: 777 F: 1199	T: 635 M: 125 F: 128	No
Herath (2019)[69]	Sri Lanka	2015	T: 7768 M: 2246 F: 5522	>18 45.9	Other	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI MDRD (not used for meta-analysis)	High	T: NA M: NA F: NA	T: 821 M: 357 F: 464	No
Ji (2019)[70]	China	2016	T: 34588 M: 14977 F: 19611	>60 71	Random sampling	DM: 24.8% HTN: 70.6% Smoking: NA Obesity: NA Mean BMI: NA	MDRD	Moderate	T: 3945 M: 1592 F: 2353	T: 1377 M: 490 F: 887	No
Kumar (2019)[71]	India	2016 – 2017	T: 422 M: 187 F: 235	>50 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: 42.4% Mean BMI: NA	MDRD	High	T: 102 M: 44 F: 58	T: 18 M: 10 F: 8	No
Lloyd (2019)[72]	New Zealand	2009 – 2014	T: 211980 M: 102165 F: 109713	>20 NA	Routine dataset	DM: 5.4% HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: 25012 M: 10475 F: 14529	T: 20640 M: NA F: NA	No
Orantes-Navarro (2019)[73]	El Salvador	2014 – 2015	T: 4817 M: 1706 F: 3111	>20 44.9	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	NA	Moderate	T: 617 M: 307 F: 271	T: 409 M: 225 F: 156	No
Radford (2019)[74]	Australia	2013 – 2016	T: 1309511 M: 555396	>20 NA	Routine dataset	DM: 17.12% HTN: 14.76%	CKD-EPI	High	T: NA M: NA	T: 61097 M: 27152	Yes

			F: 754115			Smoking: NA Obesity: NA Mean BMI: NA			F: NA	F: 33945	
Rai (2019)[75]	India	2015	T: 198 M: 124 F: 74	>45 NA	Health camp recruitment	DM: 13.6% HTN: 22.2% Smoking: 5.6% Obesity: 12% Mean BMI: NA	MDRD	High	T: 58 M: 34 F: 24	T: 34 M: NA F: NA	No
Shen (2019)[76]	China	2015	T: 1627 M: 602 F: 1025	>18 59.47	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: 23.73	MDRD	Moderate	T: 202 M: 44 F: 113	T: 39 M: NA F: NA	No
Tatapudi (2019)[77]	India	NA	T: 2210 M: 980 F: 1230	>18 43.2	Random sampling	DM: 7.2% HTN: 26.7% Smoking: 17.2% Obesity: NA Mean BMI: 22.6	MDRD	Moderate	T: 403 M: 187 F: 216	T: 307 M: 140 F: 167	No
Wei (2019)[78]	China	2012 – 2013	T: 350881 M: 163454 F: 187427	>65 71.9	Health screening convenience sampling	DM: 12.5% HTN: 60.5% Smoking: NA Obesity: NA Mean BMI: 23.2	MDRD	High	T: 56543 M: 24765 F: 31778	T: 43949 M: 18528 F: 25421	No
Yamada (2019)[79]	Japan	2011 – 2017	T: 71233 M: NA F: NA	>40 NA	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: 4053 M: NA F: NA	T: NA M: NA F: NA	Yes
Aguiar (2020)[80]	Brazil	2014 – 2015	T: 7457 M: NA F: NA	>18 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 483 M: NA F: NA	No
Bikbov (2020)[81]	Russia	2015 – 2017	T: 5841 M: 2550 F: 3291	>40 58.9	Random sampling	DM: 11.6% HTN: 84.5% Smoking: 12.6% Obesity: NA Mean BMI: 27.9	CKD-EPI	Low	T: NA M: NA F: NA	T: 1674 M: 504 F: 1170	No

Boyle (2020)[82]	USA	2016 – 2017	T: 23692 M: 9403 F: 14289	>18 43.5	Routine dataset	DM: 10.69% HTN: 27.28% Smoking: 42.13% Obesity: NA Mean BMI: NA	NA	High	T: NA M: NA F: NA	T: 2461 M: 1015 F: 1446	No
Bragg-Gresham (2020)[83]	India	2014 – 2015	T: 2002 M: NA F: NA	>18 38.3	Random sampling	DM: 7.7% HTN: 48.2% Smoking: 7.5% Obesity: 28.9% Mean BMI: 24.6	CKD-EPI	Moderate	T: 955 M: NA F: NA	T: 41 M: NA F: NA	No
Duan (2020)[84]	China	2017 – 2018	T: 5231 M: 2945 F: 2286	>18 42.5	Random sampling	DM: 7.6% HTN: 34.6% Smoking: 21.6% Obesity: NA Mean BMI: 24.1	CKD-EPI	Moderate	T: 945 M: 565 F: 313	T: 132 M: 24 F: 108	No
Ferguson (2020)[85]	Nicaragua	2012 – 2014	T: 1227 M: 472 F: 608	>18 40.4	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI, MDRD	High	T: NA M: NA F: NA	T: 43 M: NA F: NA	Yes
Gummidi (2020)[86]	India	2011 – 2012	T: 2402 M: 1180 F: 1222	>18 45.7	Random sampling	DM: 13.04% HTN: 41.55% Smoking: 42.96% Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: 506 M: 297 F: 209	T: 246 M: 144 F: 102	Yes
Hirst (2020)[87]	United Kingdom	2013 – 2017	T: 3207 M: NA F: NA	>60 74	Random sampling	DM: 15.4% HTN: 59.3% Smoking: 4.4% Obesity: NA Mean BMI: 28.1	MDRD	High	T: 584 M: NA F: NA	T: 447 M: NA F: NA	Yes
Jin (2020)[88]	China	2015 – 2016	T: 6706 M: 3326 F: 3380	>60 NA	Random sampling	DM: 11.5% HTN: 41.3% Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 630 M: 299 F: 331	No
Jonsson (2020)[89]	Iceland	2008 – 2016	T: 218437 M: 102494 F: 115943	>18 NA	Routine dataset	DM: 13.5% HTN: 30.3% Smoking: NA Obesity: NA	CKD-EPI	High	T: 25996 M: 11758 F: 14238	T: 21206 M: 9415 F: 11791	Yes

Kibria (2020)[90]	USA	2003 – 2018	T: 39569 M: 19182 F: 20387	>20 47	Random sampling	DM: 11.2% HTN: 44.9% Smoking: 21.2% Obesity: 36.5% Mean BMI: NA	CKD-EPI	Moderate	T: 7161 M: NA F: NA	T: NA M: NA F: NA	No
Masimango (2020)[91]	Democratic Republic of Congo	2016 – 2017	T: 1317 M: 515 F: 802	>18 41.1	Random sampling	DM: 4.3% HTN: 20.2% Smoking: 5.4% Obesity: 8.9% Mean BMI: 23.3	CKD-EPI	Low	T: 128 M: 38 F: 90	T: 67 M: 17 F: 50	No
Mohanty (2020)[92]	India	NA	T: 2978 M: 1112 F: 1866	>20 NA	Random sampling	DM: NA HTN: NA Smoking: 5.9% Obesity: 2.1% Mean BMI: NA	MDRD	Low	T: 426 M: 231 F: 195	T: NA M: NA F: NA	No
Olanrewaju (2020)[93]	Nigeria	NA	T: 1353 M: 595 F: 758	>18 44.3	Random sampling	DM: 6.1% HTN: 20.6% Smoking: NA Obesity: NA Mean BMI: 26	CKD-EPI	High	T: NA M: NA F: NA	T: 236 M: 80 F: 156	No
Peer (2020)[94]	South Africa	NA	T: 1092 M: 392 F: 700	>21 43.5	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 64 M: 17 F: 47	No
Saminathan (2020)[95]	Malaysia	2017 – 2018	T: 890 M: 366 F: 523	>18 48.8	Random sampling	DM: 19.6% HTN: 51% Smoking: 61.% Obesity: 24.6%	CKD-EPI	Moderate	T: 158 M: 59 F: 99	T: 65 M: NA F: NA	No
*Vart (2020)[96]	USA	2017 – 2020	T: 54554 M: 48.3% F: 51.7%	>20 46.2	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: 2011/12 – 6055 2013/14 – 6110 T: 2015/16 – 6165 M: NA F: NA	T: 2011/12 – 3655 2013/14 – 3655 2015/16 – 3655 M: NA F: NA	No
Vinhas (2020)[97]	Portugal	Not clear	T: 3135 M: 1086 F: 2049	>18 56.7	Routine dataset	DM: 18.6% HTN: 41.2% Smoking: NA Obesity: 30.7%	CKD-EPI	High	T: 655 M: 217 F: 445	T: 333 M: NA F: NA	Yes

						Mean BMI: 27.9					
Walbaum (2020)[98]	Chile	2009 – 2010 2016 – 2017	T: 4583 M: NA F: NA T: 5084 M: NA F: NA	>18 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 186 M: NA F: NA T: 272 M: NA F: NA	No
Xu (2020)[99]	China	2018	T: 395541 M: 190258 F: 205283	>18 55.34	Routine dataset	DM: NA HTN: 19.9% Smoking: NA Obesity: 35.3% Mean BMI: 24.51	CKD-EPI	High	T: NA M: NA F: NA	T: 8065 M: 3389 F: 4676	No
Alvand (2021)[100]	Iran	2016 – 2019	T: 30041 M: 10748 F: 19293	>20 41.7	Random sampling	DM: 15.4% HTN: 20.1% Smoking: 10.8% Obesity: NA Mean BMI: 27.6	CKD-EPI MDRD (not used for meta-analysis)	Moderate	T: NA M: NA F: NA	T: 1651 M: 674 F: 977	No
Cheng (2021)[101]	China	2015	T: 10407 M: 4084 F: 6323	>18 NA	Random sampling	DM: 17.25% HTN: 59.43% Smoking: 22.21% Obesity: NA Mean BMI: 24.75	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 412 M: NA F: NA	No
*Duggal (2021)[102]	USA	2015 – 2016	T: 5369 (VA) and 4477675 (NHANES) M: 2167195 (NHANES), 4934 (VA) F: 2310480 (NHANES), 435 (VA)	>18 47.4 (NHANES), 62.9 (VA)	Random sampling and convenience sampling from VA cohort	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 291049 (NHANES), 1052 (VA)	No
Gbaguidi (2021)[103]	Benin	2019	T: 1360 M: 495 F: 865	>25 NA	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI MDRD (not used in meta-analysis)	Moderate	T: NA M: NA F: NA	T: 192 M: NA F: NA	No
Jose (2021)[104]	Australia	2004 – 2017	T: 193816 M: NA	>18 NA	Routine dataset	DM: NA HTN: NA	CKD-EPI	High	T: 27178 M: 13568	T: 22537 M: 10629	Yes

			F: NA			Smoking: NA Obesity: NA Mean BMI: NA			F: 13610	F: 11908	
Kaze (2021)[105]	Cameroon	2018	T: 433 M: 212 F: 221	>20 45	Random sampling	DM: NA HTN: 33.9% Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: 55 M: 24 F: 31	T: 15 M: 6 F: 9	Yes
Miller (2021)[106]	Guatemala	2018 – 2019	T: 807 M: 280 F: 527	>18 39.5	Random sampling	DM: 12.3% HTN: 8.6% Smoking: NA Obesity: 25.1% Mean BMI: 27.1	CKD-EPI	Moderate	T: 56 M: NA F: NA	T: 32 M: 9 F: 17	No
Nagai (2021)[107]	Japan	2014 – 2015	T: 763104 M: 320901 F: 442203	>20 NA	Convenience sampling from people undergoing health check-ups	DM: 11.9% HTN: 43.6% Smoking: NA Obesity: NA Mean BMI: NA	Japanese Society of Nephrology	High	T: 111413 M: 50414 F: 59963	T: 76234 M: 34850 F: 40594	Yes
Okafor (2021)[108]	Nigeria	NA	T: 466 M: 106 F: 360	>18 35.7	Health camp recruitment	DM: 3.1% HTN: 25.3% Smoking: NA Obesity: 17.3% Mean BMI: 25.8	MDRD	High	T: 108 M: NA F: NA	T: 30 M: NA F: NA	No
Olie (2021)[109]	France	2014 – 2016	T: 2422 M: 1163 F: 1259	>18 46.9	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI and EKFC	High	T: NA M: NA F: NA	T: 56 M: 15 F: 21	No
Sarker (2021)[110]	Bangladesh	2020	T: 872 M: 381 F: 490	>18 48.2	Routine dataset	DM: 16.9% HTN: 40.7% Smoking: 19.6% Obesity: NA Mean BMI: 23.5	CKD-EPI	Moderate	T: 192 M: 73 F: 119	T: 54 M: NA F: NA	Yes
Xu (2021)[111]	China	2018	T: 37533 M: 18172 F: 19361	>65 73.76	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: 24.69	CKD-EPI	High	T: 6636 M: 3187 F: 3449	T: 2160 M: NA F: NA	No

Cook (2022)[112]	Russia, Norway	2015 – 2018	Russia: T: 4046 M: 1700 F: 2346 Norway: T: 17561 M: 9261 F: 8309	>40 NA	Random sampling	Russia: DM: 14.1% HTN: NA Smoking: 24.7% Obesity: NA Mean BMI: NA Norway: DM: 5.4% HTN: NA Smoking: 14.9% Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	Russia: T: 263 M: NA F: NA Norway: T: 808 M: NA F: NA	Russia: T: 145 M: 81 F: 64 Norway: T: 264 M: 147 F: 117	No
Dehghani (2022)[113]	Iran	2016	T: 9781 M: 4921 F: 4860	>30 48.39	Random sampling	DM: 17.5% HTN: 20.8% Smoking: 22.6% Obesity: 34% Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 2685 M: 1186 F: 1499	No
Domislovic (2022)[114]	Croatia	2018 – 2020	T: 781 M: 271 F: 510	>18 59	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	Moderate	T: NA M: NA F: NA	T: 79 M: 26 F: 53	No
Eguiguren (2022)[115]	Ecuador	2019 – 2021	T: 813 M: 316 F: 497	>18 NA	Routine dataset	DM: 3.8% HTN: 11.9% Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 58 M: 25 F: 33	No
Kebede (2022)[116]	Ethiopia	2018	T: 326 M: 131 F: 195	>18 33.9	Random sampling	DM: 3.4% HTN: 21.8% Smoking: NA Obesity: NA Mean BMI: 23.84	CKD-EPI MDRD, CG (not used for meta-analysis)	High	T: 24: M: 6 F: 18	T: 1 M: NA F: NA	No
Khadda (2022)[117]	Morocco	2019	T: 431 M: 229 F: 202	>18 49.15	Random sampling	DM: 9.28% HTN: 27.3% Smoking: NA Obesity: 11.8% Mean BMI: NA	MDRD	High	T: 28 M: NA F: NA	T: 13 M: NA F: NA	Yes
Kim (2022)[118]	Korea	2018 – 2020	T: 106021 M: 51503 F: 54518	>20 NA	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 2202 M: NA F: NA	Np

						Mean BMI: NA					
Ndulue (2022)[119]	Nigeria	NA	T: 391 M: 142 F: 249	>18 NA	Random sampling	DM: 21.7% HTN: 47.6% Smoking: 26.1% Obesity: NA Mean BMI: NA	CKD-EPI	High	T: 42 M: 9 F: 34	T: 26 M: NA F: NA	No
Poudyal (2022)[120]	Nepal	2016 – 2018	T: 12109 M: 4708 F: 7401	>20 NA	Random sampling	DM: 7.3% HTN: 35.96% Smoking: 31.4% Obesity: NA Mean BMI: NA	MDRD	Low	T: 728 M: 313 F: 415	T: NA M: NA F: NA	Yes
Ranivohar (2022)[121]	Madagascar	2018	T: 210 M: 134 F: 76	>18 40	Random sampling	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: NA M: NA F: NA	T: 29 M: NA F: NA	No
Sundstrom (2022)[122]	Belgium, Canada, Israel, Netherlands, Portugal, Sweden		T: 208921, 12553761, 1298633, 2187962, 106482, 2570327	>18 NA	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	NA	High	T: 11744, 883310, 84229, 49413, 10455, 156230 M: NA F: NA	T: NA M: NA F: NA	Yes
Umebayashi (2022)[123]	Japan	2019	T: 88420 M: 37233 F: 51187	>40 NA	Routine dataset	DM: NA HTN: NA Smoking: NA Obesity: NA Mean BMI: NA	NA	High	T: 25417 M: NA F: NA	T: 17126 M: NA F: NA	No
Wijewickrama (2022)[124]	Sri Lanka	NA	T: 352 M; 47 F: 33	>18 47	Random sampling	DM: 7.7% HTN: 8.8% Smoking: NA Obesity: NA Mean BMI: NA	CKD-EPI	High	T: 47 M: NA F: NA	T: 33 M: NA F: NA	No
Xiao (2022)[125]	China	2017 – 2018	T: 1969 M: 715 F: 1254	>40 58.96	Method of recruitment unclear	DM: 12.8% HTN: 54.6% Smoking: NA Obesity: NA Mean BMI: 24.4	CKD-EPI	High	T: 407 M: 152 F: 255	T: NA M: NA F: NA	No

Supplementary table S6: Studies excluded following full text review

Author (Published date)	**Reason for exclusion**
Aitken (2014)[126]	Published before September 2014
Alam (2014)[127]	Published before September 2014
Anand (2014)[128]	Published before September 2014
Anupama (2014)[129]	Published before September 2014
Burkhaltera (2014)[130]	Not conducted in the general population
Chudek (2014)[131]	Published before September 2014
Cueto-Manzano (2014)[132]	Published before September 2014
Egbi (2014)[133]	Not conducted in the general population
Fraser (2014)[134]	Published before September 2014
Hong (2014)[135]	Published before September 2014
Jain (2014)[136]	Published before September 2014
Jameson (2014)[137]	Published before September 2014
Jessani (2014)[138]	Published before September 2014
Khajehdehi (2014)[139]	Published before September 2014
Li (2014)[140]	Doesn't describe CKD prevalence
Lin (2014)[141]	Published before September 2014
Mendy (2014)[142]	Published before September 2014
Mitchell (2014)[143]	Published before September 2014
Olszewski (2014)[144]	Published before September 2014
Pani (2014)[145]	Published before September 2014
Seck (2014)[146]	Duplicate
Seck (2014)[147]	Duplicate
Seck (2014)[148]	Published before September 2014
Shin (2014)[149]	Published before September 2014
Stack (2014)[150]	Not conducted in the general population
Van Blijderveen (2014)[151]	Published before September 2014
Van Pottelbergh (2014)[152]	Published before September 2014
Xue (2014)[153]	Not conducted in the general population
Fraser (2015)[154]	Included participants <18 years of age
Imran (2015)[155]	Not conducted in the general population
Kaze (2015)[156]	Duplicate
Khurram (2015)[157]	Not conducted in the general population
Lawton (2015)[158]	Included participants <18 years of age
Liu (2015)[159]	Not conducted in the general population
Otero Gonzalez (2015)[160]	Not conducted in the general population
Robles (2015)[161]	Not conducted in the general population
Thawornchaisit (2015)[162]	Not conducted in the general population
Uchida (2015)[163]	Published before September 2014
Ullah (2015)[164]	Not conducted in the general population
Acuna (2016)[165]	Foreign language
Al Wakeel (2016)[166]	Not conducted in the general population
Barreto (2016)[167]	Not conducted in the general population
Forni Ogna (2016)[168]	Included participants <18 years of age
Ji (2016)[169]	Not conducted in the general population
Murphy (2016)[170]	Only described stages 3 – 4
Kang (2016)[171]	Not conducted in the general population
Crews (2017)[172]	Not conducted in the general population
Herrera-Anazco (2017)[173]	Not conducted in the general population
Saber (2017)[174]	Included participants <18 years of age
Adjei (2018)[175]	Not conducted in the general population
Ginawi (2018)[176]	Unable to source full text
Han (2018)[177]	Not conducted in the general population
Hirst (2018)[178]	Not conducted in the general population
Major (2018)[179]	Not conducted in the general population
Oyebisi (2018)[180]	Unable to source full text
Polkinghorne (2018)[181]	Not conducted in the general population
Ranasinghe (2018)[182]	Not conducted in the general population
Ranivoharisoa (2018)[183]	Conference abstract subsequently published and included
Tomlinson (2018)[184]	Wrong study design
Tuttle (2018)[185]	Not conducted in the general population
Wang (2018)[186]	Not conducted in the general population
Wang (2018)[187]	Not conducted in the general population
Corsonello (2019)[188]	Not conducted in the general population
Fabian (2019)[189]	Included participants <18 years of age

Okafor (2019)[108]	Conference abstract subsequently published and included
Rothenbacher (2019)[190]	Not conducted in the general population
Vart (2019)[96]	Duplicate
Weldegiorgis (2019)[191]	Doesn't describe CKD prevalence
Amaral (2020)[192]	Foreign language
Bragg-Gresham (2020)[193]	Not conducted in the general population
Hounkpatin (2020)[194]	Included participants <18 years of age
Llisterri (2020)[195]	Foreign language
Marino (2020)[196]	Included participants <18 years of age
Yue (2020)[197]	Not conducted in the general population
Akpan (2021)[198]	Doesn't describe CKD prevalence
Bavanandam (2021)[199]	Conference abstract subsequently published and included
Huisman (2021)[200]	Doesn't describe CKD prevalence
Borg (2022)[201]	Doesn't describe CKD prevalence
Oliver (2022)[202]	Not conducted in the general population
Nanda (2022)[203]	Not original data
Paparazzo (2022)[204]	Not conducted in the general population
Tafuna'i (2022)[205]	Included participants <18 years of age
Tafuna'i (2022)[206]	Included participants <18 years of age
Walther (2022)[207]	Doesn't describe CKD prevalence

Supplementary table S7: Results of sensitivity analyses

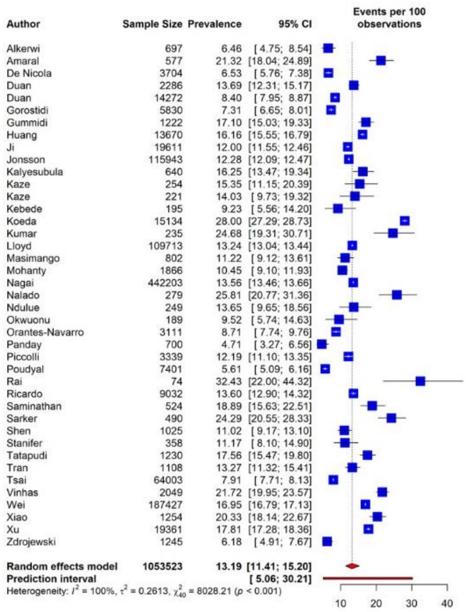
Analysis	**Pooled prevalence (95% CI)**	**Prediction interval (%)**	**I^2 (%)**	**df**
		Stages 1 – 5		
Main	13.04 (11.31 – 14.98)	3.46 – 38.51	100	77
Outliers removed	12.65 (11.78 – 13.56)	9.43 – 16.75	99.2	18
High risk of bias excluded	13.10 (10.76 – 15.84)	3.45 – 38.86	99.7	40
Influential cases removed	13.39 (11.68 – 15.32)	4.03 – 36.27	99.9	68
		Stages 3 – 5		
Main	6.61 (5.61 – 7.78)	1.11 – 30.76	99.9	110
Outliers removed	6.29 (5.91 – 6.69)	4.72 – 8.33	97.9	29
High risk of bias excluded	6.34 (5.03 – 7.95)	0.93 – 32.80	99.8	64
Influential cases removed	6.37 (5.30 – 7.63)	1.00 – 31.36	99.8	96

Supplementary table S8: Results of trim and fill analysis for CKD stages 1 – 5

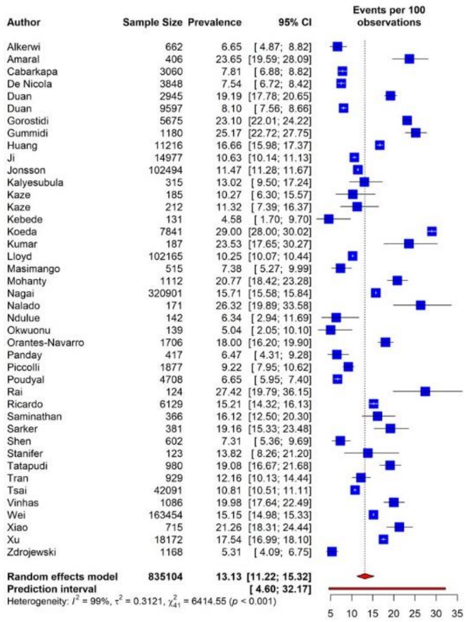
Analysis	**Pooled prevalence (95% CI)**	**Prediction interval (%)**	**I^2 (%)**	**df**
Trim and fill	8.02 (6.62 – 9.70)	1.00 – 42.96)	100	107

Supplementary figure S1: Pooled prevalence of CKD stages 1 – 5 in a) females; and b) males

A

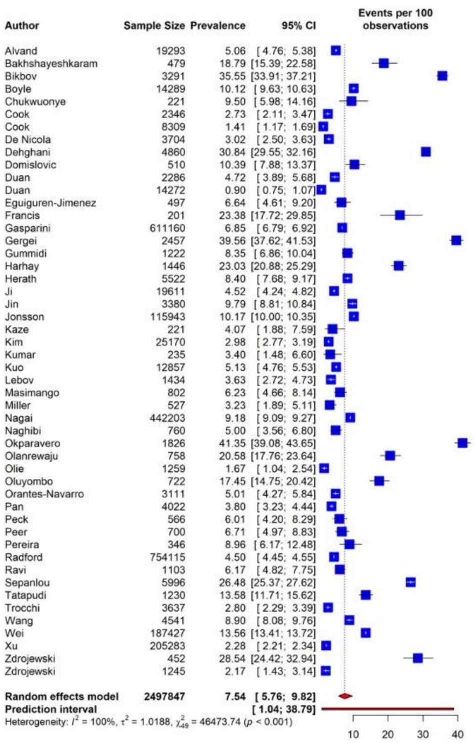


B



Supplementary figure S2: Pooled prevalence of CKD stages 3 – 5 in a) females; and b) males

A



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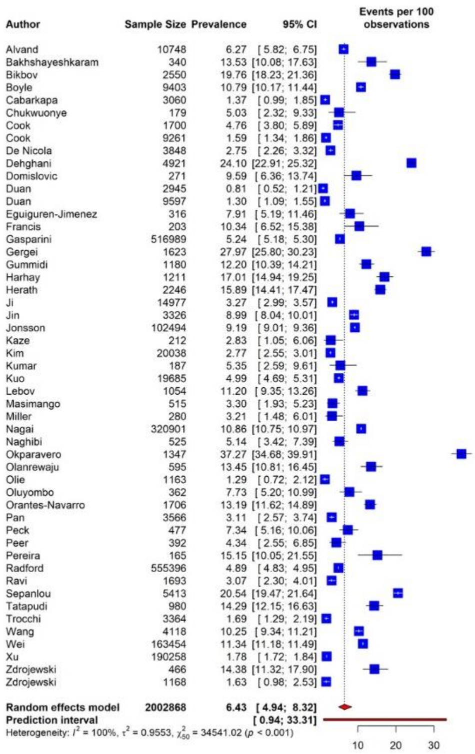
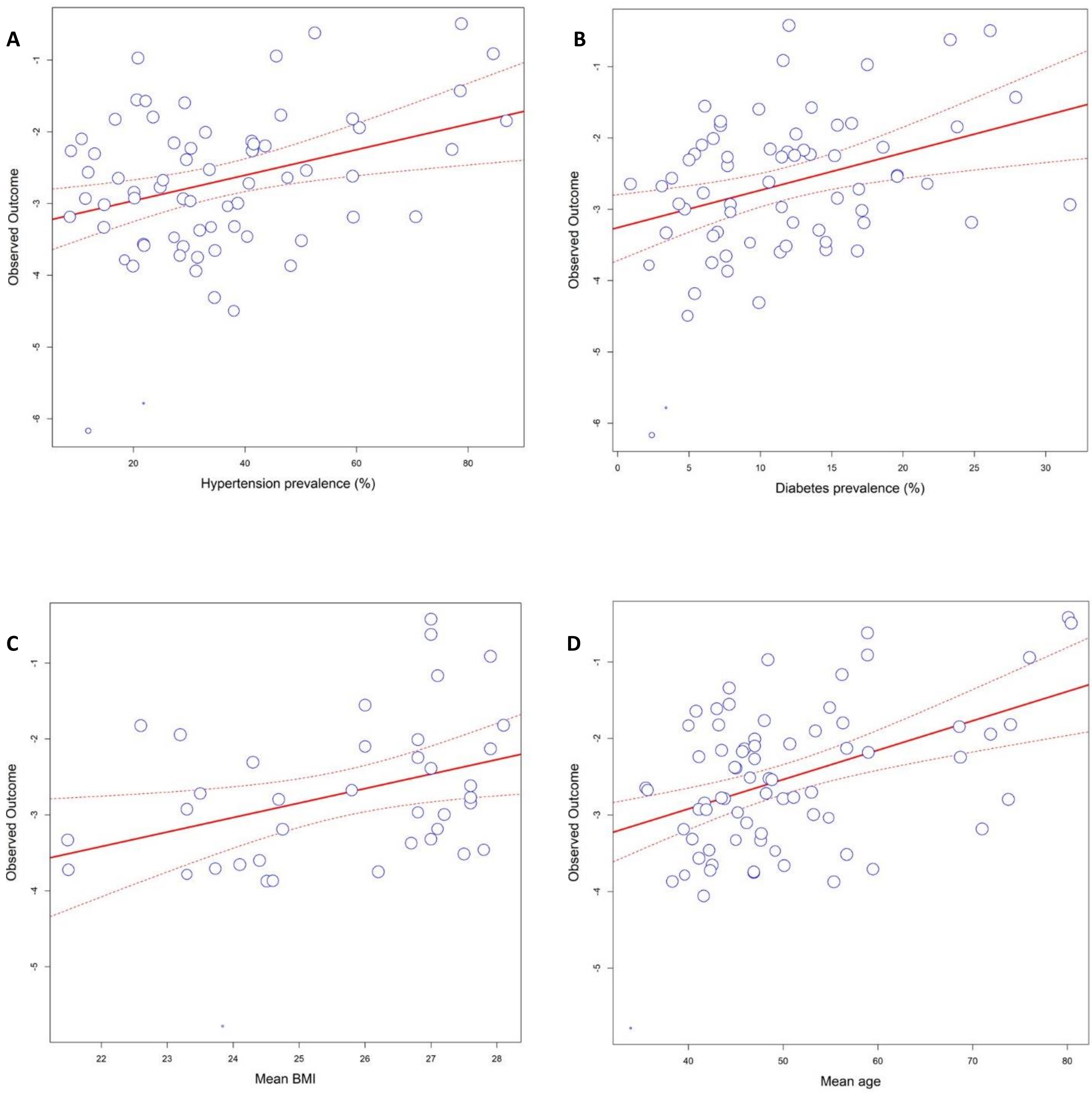
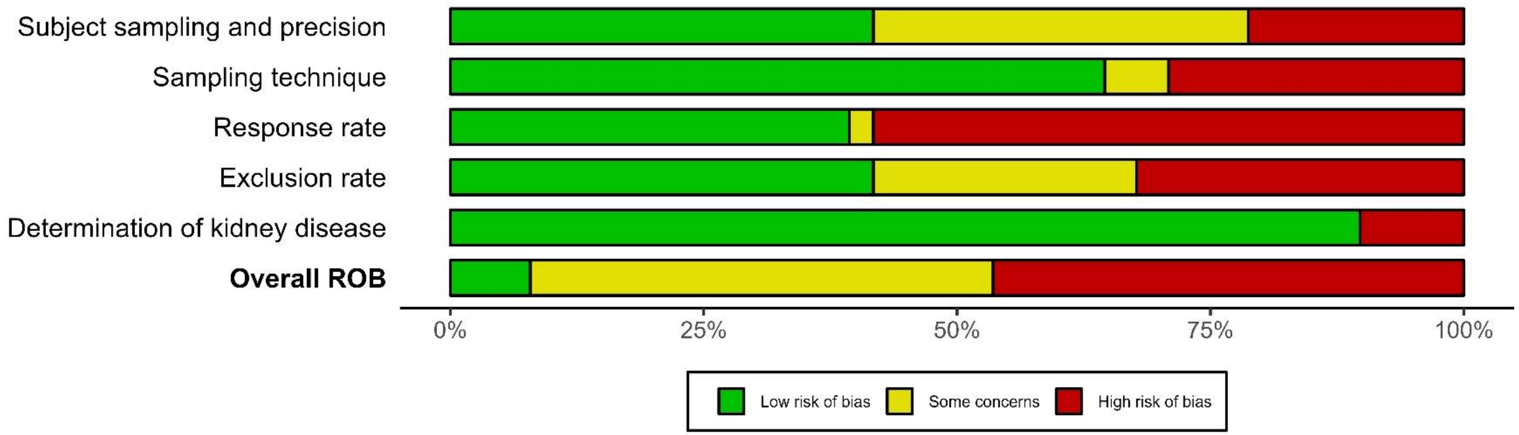


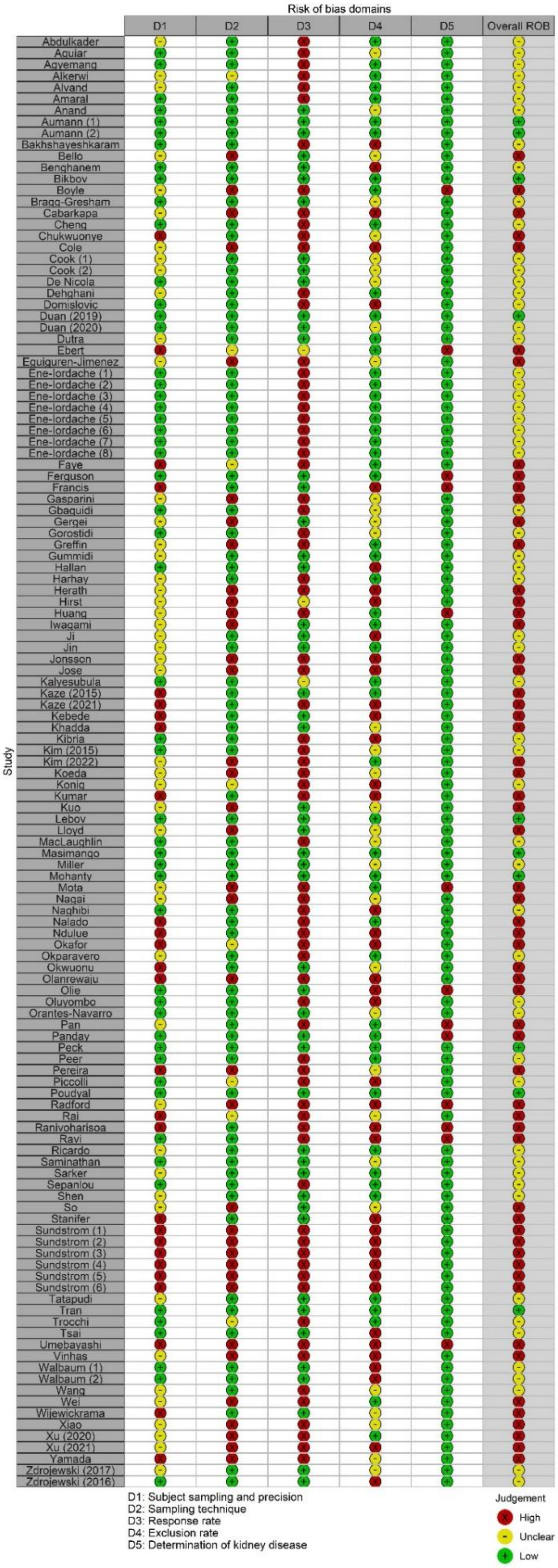
Supplementary figure S3: Bubble plots demonstrating the significant findings from uni-variable meta-regression for CKD stages 3 – 5. A = hypertension; B = diabetes; C = mean BMI; D = mean age



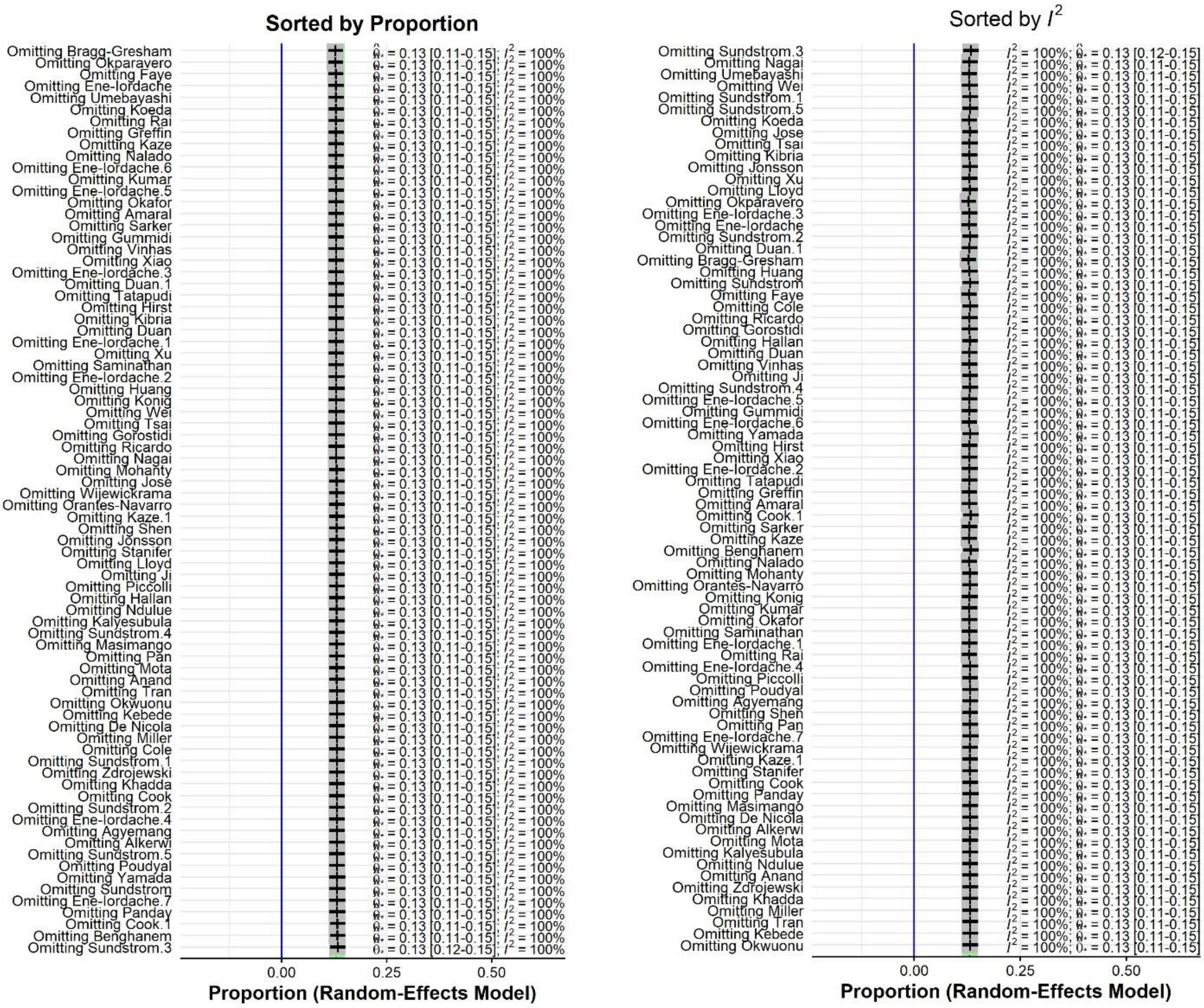
Supplementary figure S4: Risk of bias summary plot



Supplementary figure S5: Risk of bias traffic light plot

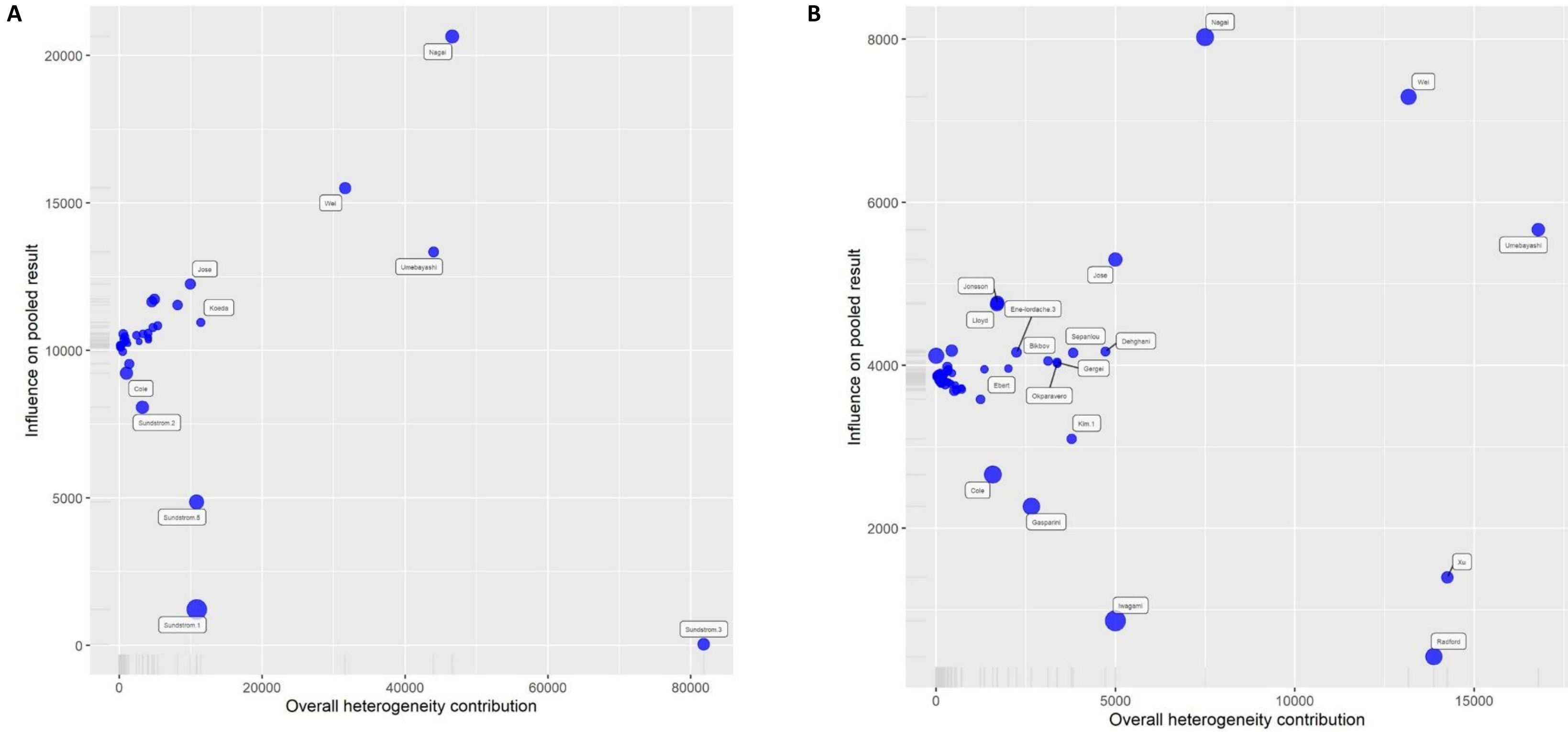


Supplementary figure S6: Leave-one-out forest plots sorted by proportion and I^2 for CKD stages 1 – 5



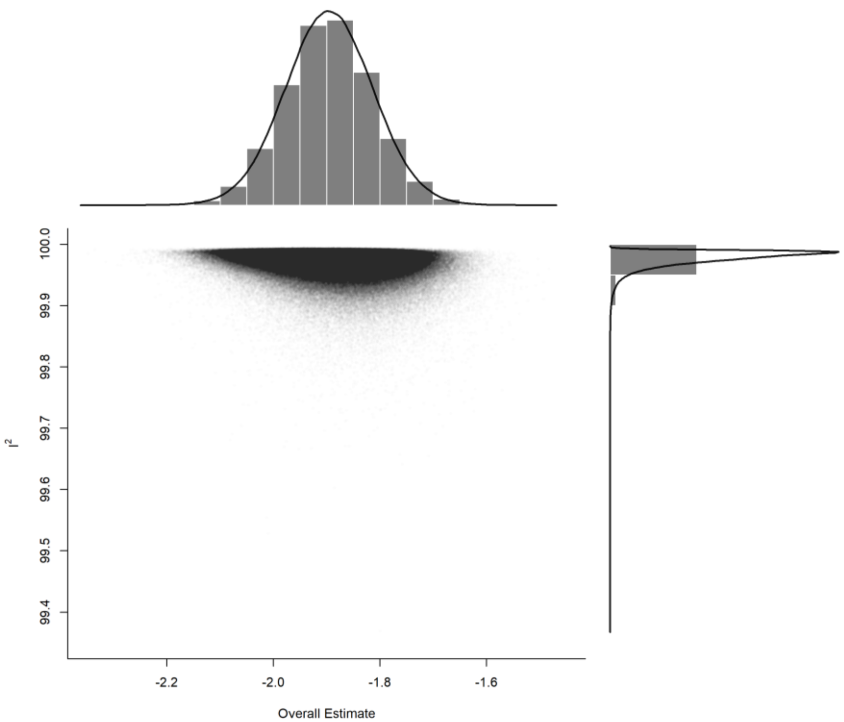
Supplementary figure S7: Leave-one-out forest plots sorted by proportion and I^2 for CKD stages 3 – 5

Supplementary figure S8: Baujat plots assessing for underlying influence and heterogeneity contribution for a) CKD stages 1 – 5; and b) CKD stages 3 – 5

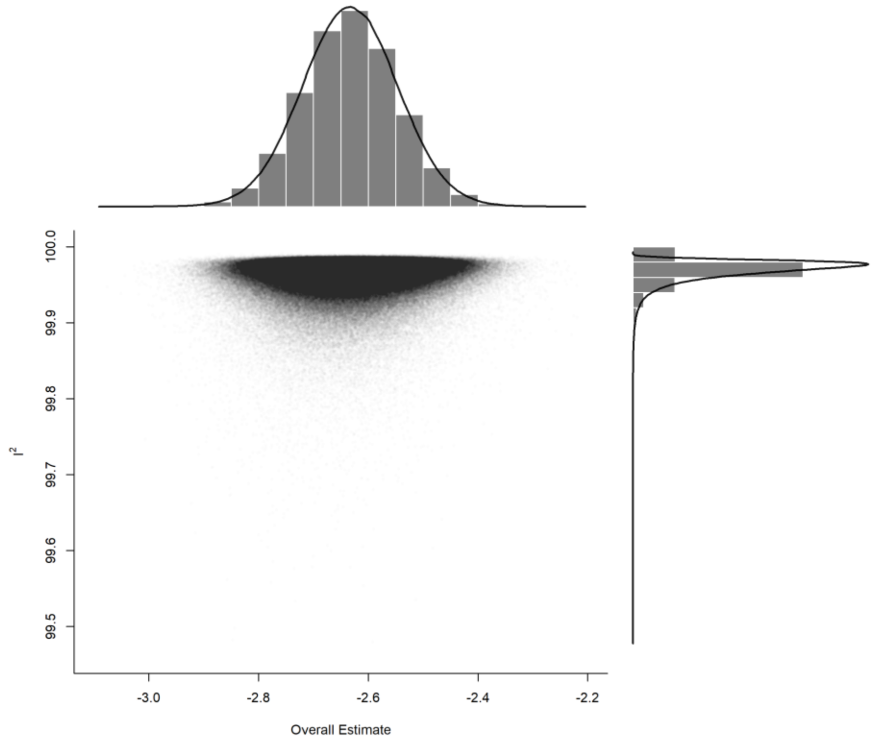


Supplementary figure S9: GOSH plots for a) CKD stages 1 – 5; and b) CKD stages 3 – 5. Note no diagnostics were performed on these plots as there were no clear visual clusters suggestive of a significant impact on results.

A

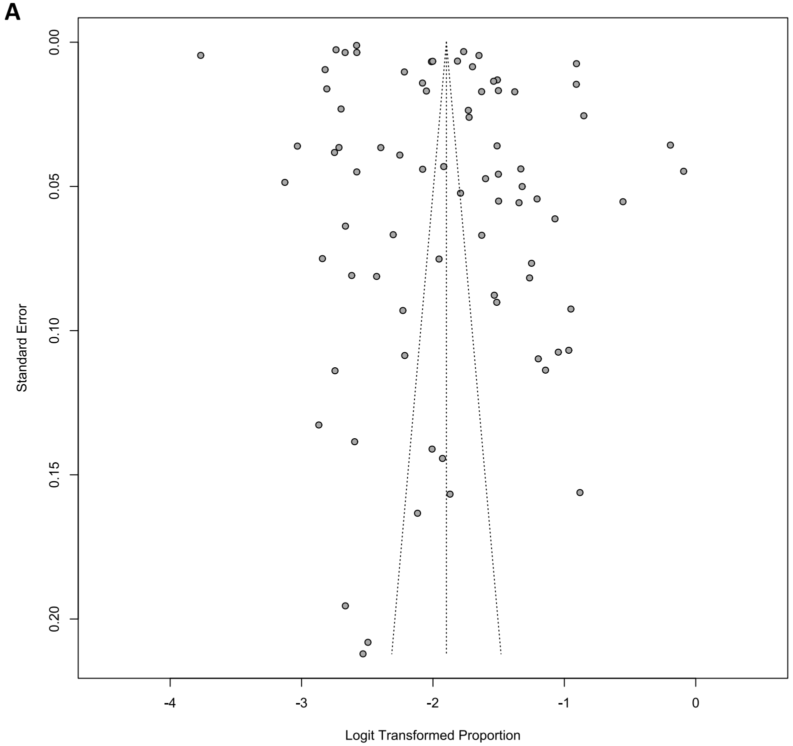


B



Supplementary figure S10: a) Funnel plot and b) contour enhanced funnel plot for CKD stages 1 – 5, assessing for underlying publication bias

A



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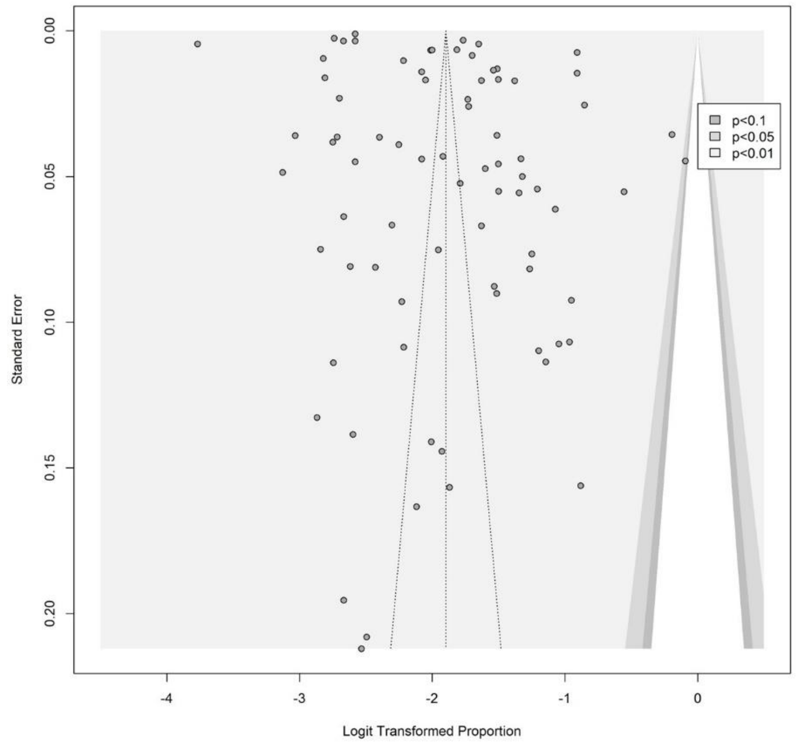
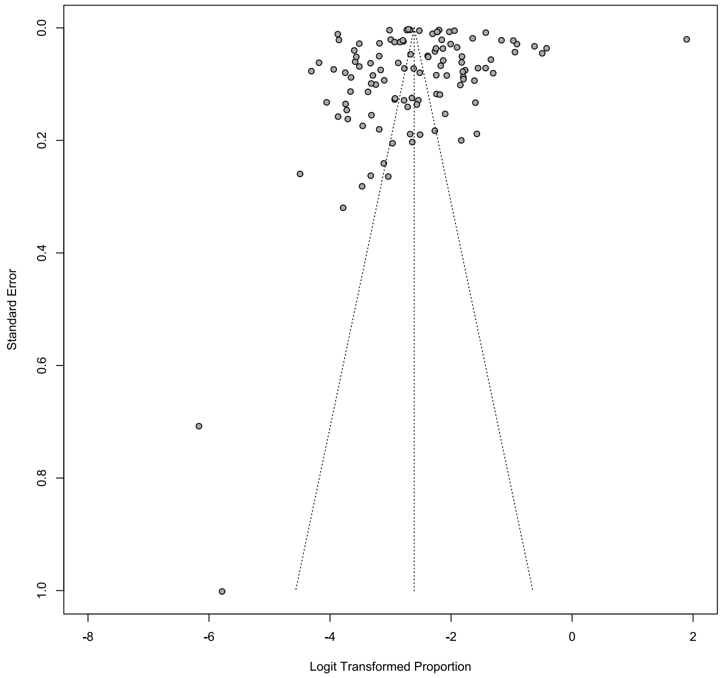


Supplementary figure S11: Funnel plot for CKD stages 3 – 5



Supplementary References

1. Stanifer JW, Jing B, Tolan S, et al. The epidemiology of chronic kidney disease in sub-Saharan Africa: A systematic review and meta-analysis. *Lancet Glob Health*. 2014;2(3):e174-e181. doi:10.1016/S2214-109X(14)70002-6

2. Schwarzer G, Carpenter JR, Rücker G. *Meta-Analysis with R*. Springer International Publishing; 2015. doi:10.1007/978-3-319-21416-0

3. Olkin I, Dahabreh IJ, Trikalinos TA. GOSH - a graphical display of study heterogeneity. *Res Synth Methods*. 2012;3(3):214-223. doi:10.1002/jrsm.1053

4. Viechtbauer W. Conducting Meta-Analyses in *R* with the **metafor** Package. *J Stat Softw*. 2010;36(3). doi:10.18637/jss.v036.i03

5. Viechtbauer W, Cheung MWL. Outlier and influence diagnostics for meta-analysis. *Res Synth Methods*. 2010;1(2):112-125. doi:10.1002/jrsm.11

6. Harrer M, Cuijpers P, Furukawa T, Ebert D. *Companion R Package For The Guide "Doing Meta-Analysis in R."*; 2019.

7. Bowling CB, Sharma P, Muntner P. Prevalence, trends and functional impairment associated with reduced estimated glomerular filtration rate and albuminuria among the oldest-old U.S. adults. In: *American Journal of the Medical Sciences*. Vol 348. Lippincott Williams and Wilkins; 2014:115-120. doi:10.1097/MAJ.0000000000000294

8. de Nicola L, Donfrancesco C, Minutolo R, et al. Prevalence and cardiovascular risk profile of chronic kidney disease in Italy: Results of the 2008-12 National Health Examination Survey. *Nephrology Dialysis Transplantation*. 2015;30(5):806-814. doi:10.1093/ndt/gfu383

9. Dutra MC, Uliano EJM, Machado DFG de P, Martins T, Schuelter-Trevisol F, Trevisol DJ. Assessment of kidney function in the elderly: a population-based study. *J Bras Nefrol*. 2014;36(3):297-303. doi:10.5935/0101-2800.20140043

10. Fan L, Levey AS, Gudnason V, et al. Comparing GFR Estimating Equations Using Cystatin C and Creatinine in Elderly Individuals. *J Am Soc Nephrol*. 2015;26(8):1982-1989.

11. Kuo CF, Yu KH, Shen YM, See LC. The chinese version of the modification of diet in renal disease (MDRD) equation is a superior screening tool for chronic kidney disease among middle-aged taiwanese than the original MDRD and Cockcroft-Gault equations. *Biomed J*. 2014;37(6):398-405. doi:10.4103/2319-4170.132886

12. Anand S, Shivashankar R, Ali MK, et al. Prevalence of chronic kidney disease in two major Indian cities and projections for associated cardiovascular disease. *Kidney Int*. 2015;88(1):178-185. doi:10.1038/ki.2015.58

13. Aumann N, Baumeister SE, Rettig R, et al. Regional variation of chronic kidney disease in Germany: Results from two population-based surveys. *Kidney Blood Press Res*. 2015;40(3):231-243. doi:10.1159/000368499

14. Francis ER, Kuo CC, Bernabe-Ortiz A, et al. Burden of chronic kidney disease in resource-limited settings from Peru: A population-based study. *BMC Nephrol*. 2015;16(1). doi:10.1186/s12882-015-0104-7

15. Kaze FF, Meto DT, Halle MP, Ngogang J, Kengne AP. Prevalence and determinants of chronic kidney disease in rural and urban Cameroonians: A cross-sectional study. *BMC Nephrol*. 2015;16(1). doi:10.1186/s12882-015-0111-8

16. Kim TH, Lee MJ, Yoo KB, Han E, Choi JW. Association of demographic and socioeconomic factors with risk factors for chronic kidney disease. *Journal of Preventive Medicine and Public Health*. 2015;48(3):170-177. doi:10.3961/jpmph.15.002

17. Lebov JF, Valladares E, Peña R, et al. A population-based study of prevalence and risk factors of chronic kidney disease in León, Nicaragua. *Can J Kidney Health Dis*. 2015;2(1). doi:10.1186/s40697-015-0041-1

18. Maclaughlin HL, Hall WL, Sanders TAB, Macdougall IC. Risk for chronic kidney disease increases with obesity: Health Survey for England 2010. *Public Health Nutr*. 2015;18(18):3349-3354. doi:10.1017/S1368980015000488

19. Moţa E, Popa SG, Moţa M, et al. Prevalence of chronic kidney disease and its association with cardio-metabolic risk factors in the adult Romanian population: the PREDATORR study. *Int Urol Nephrol*. 2015;47(11):1831-1838. doi:10.1007/s11255-015-1109-7

20. Naghibi M, Mojahedi MJ, Jarrahi L, et al. Prevalence of Chronic Kidney Disease and Its Risk Factors in Gonabad, Iran. *Iran J Kidney Dis*. 2015;9(6):449-453. www.ijkd.org

21. Pan L, Ma R, Wu Y, et al. Prevalence and risk factors associated with chronic kidney disease in a Zhuang ethnic minority area in China. *Nephrology*. 2015;20(11):807-813. doi:10.1111/nep.12510

22. Ricardo AC, Flessner MF, Eckfeldt JH, et al. Prevalence and correlates of CKD in hispanics/latinos in the United States. *Clinical Journal of the American Society of Nephrology*. 2015;10(10):1757-1766. doi:10.2215/CJN.02020215

23. So BH, Methven S, Hair MD, Jardine AG, MacGregor MS. Socio-economic status influences chronic kidney disease prevalence in primary care: A community-based cross-sectional analysis. *Nephrology Dialysis Transplantation*. 2015;30(6):1010-1017. doi:10.1093/ndt/gfu408

24. Stanifer JW, Maro V, Egger J, et al. The epidemiology of chronic kidney disease in Northern Tanzania: A population-based survey. *PLoS One*. 2015;10(4). doi:10.1371/journal.pone.0124506

25. Wang S, Chen R, Liu Q, Shu Z, Zhan S, Li L. Prevalence, awareness and treatment of chronic kidney disease among middle-aged and elderly: The China Health and Retirement Longitudinal Study. In: *Nephrology*. Vol 20. ; 2015:474-484. doi:10.1111/nep.12449

26. Agyemang C, Snijder MB, Adjei DN, et al. Ethnic disparities in CKD in the Netherlands: The healthy life in an Urban Setting (HELIUS) Study. *American Journal of Kidney Diseases*. 2016;67(3):391-399. doi:10.1053/j.ajkd.2015.07.023

27. Benghanem Gharbi M, Elseviers M, Zamd M, et al. Chronic kidney disease, hypertension, diabetes, and obesity in the adult population of Morocco: how to avoid “over”- and “under”-diagnosis of CKD. *Kidney Int*. 2016;89(6):1363-1371. doi:10.1016/j.kint.2016.02.019

28. Ene-Iordache B, Perico N, Bikbov B, et al. Chronic kidney disease and cardiovascular risk in six regions of the world (ISN-KDDC): A cross-sectional study. *Lancet Glob Health*. 2016;4(5):e307-e319. doi:10.1016/S2214-109X(16)00071-1

29. Gasparini A, Evans M, Coresh J, et al. Prevalence and recognition of chronic kidney disease in Stockholm healthcare. *Nephrology Dialysis Transplantation*. 2016;31(12):2086-2094. doi:10.1093/ndt/gfw354

30. Girndt M, Trocchi P, Scheidt-Nave C, Markau S, Stang A. The Prevalence of Renal Failure. Results from the German Health Interview and Examination Survey for Adults, 2008-2011 (DEGS1). *Dtsch Arztebl Int*. 2016;113(6):85-91. doi:10.3238/arztebl.2016.0085

31. Hallan SI, Øvrehus MA, Romundstad S, et al. Long-term trends in the prevalence of chronic kidney disease and the influence of cardiovascular risk factors in Norway. *Kidney Int*. 2016;90(3):665-673. doi:10.1016/j.kint.2016.04.012

32. Harhay MN, Harhay MO, Coto-Yglesias F, Rosero Bixby L. Altitude and regional gradients in chronic kidney disease prevalence in Costa Rica: Data from the Costa Rican Longevity and Healthy Aging Study. *Tropical Medicine and International Health*. 2016;21(1):41-51. doi:10.1111/tmi.12622

33. Huang YP, Zheng T, Zhang DH, Chen LY, Mao PJ. Community-based study on elderly CKD subjects and the associated risk factors. *Ren Fail*. 2016;38(10):1672-1676. doi:10.1080/0886022X.2016.1229987

34. Ji E, Kim YS. Prevalence of chronic kidney disease defined by using CKD-EPI equation and albumin-to-creatinine ratio in the Korean adult population. *Korean Journal of Internal Medicine*. 2016;31(6):1120-1130. doi:10.3904/kjim.2015.193

35. Koeda Y, Tanaka F, Segawa T, et al. Comparison between urine albumin-tocreatinine ratio and urine protein dipstick testing for prevalence and ability to predict the risk for chronic kidney disease in the general population (Iwate-KENCO study): A prospective community-based cohort study. *BMC Nephrol*. 2016;17(1). doi:10.1186/s12882-016-0261-3

36. Nalado A, Abdu A, Adamu B, et al. Prevalence of chronic kidney disease markers in Kumbotso, rural Northern Nigeria. *Afr J Med med Sci*. 2016;3:45.

37. Okparavero A, Foster MC, Tighiouart H, et al. Prevalence and complications of chronic kidney disease in a representative elderly population in Iceland. *Nephrology Dialysis Transplantation*. 2016;31(3):439-447. doi:10.1093/ndt/gfv370

38. Nannan Panday R, Haan Y, Diemer F, et al. Chronic kidney disease and kidney health care status: the healthy life in Suriname (HeliSur) study. *Intern Emerg Med*. 2019;14(2):249-258. doi:10.1007/s11739-018-1962-3

39. Park JI, Baek H, Jung HH. Prevalence of chronic kidney disease in Korea: The Korean National Health and Nutritional Examination Survey 2011-2013. *J Korean Med Sci*. 2016;31(6):915-923. doi:10.3346/jkms.2016.31.6.915

40. Peck R, Baisley K, Kavishe B, et al. Decreased renal function and associated factors in cities, towns and rural areas of Tanzania: A community-based population survey. *Tropical Medicine and International Health*. 2016;21(3):393-404. doi:10.1111/tmi.12651

41. Pereira ERS, Pereira A de C, Andrade GB de, et al. Prevalence of chronic renal disease in adults attended by the family health strategy. *J Bras Nefrol*. 2016;38(1):22-30. doi:10.5935/0101-2800.20160005

42. Zdrojewski L, Zdrojewski T, Rutkowski M, et al. Prevalence of chronic kidney disease in a representative sample of the Polish population: Results of the NATPOL 2011 survey. *Nephrology Dialysis Transplantation*. 2016;31(3):433-439. doi:10.1093/ndt/gfv369

43. Abdulkader RCRM, Burdmann EA, Lebrão ML, Duarte YAO, Zanetta DMT. Aging and decreased glomerular filtration rate: An elderly population-based study. *PLoS One*. 2017;12(12). doi:10.1371/journal.pone.0189935

44. Alkerwi A, Sauvageot N, el Bahi I, et al. Prevalence and related risk factors of chronic kidney disease among adults in Luxembourg: Evidence from the observation of cardiovascular risk factors (ORISCAV-LUX) study. *BMC Nephrol*. 2017;18(1). doi:10.1186/s12882-017-0772-6

45. Cabarkapa V, Ilinčić B, Derić M, et al. Screening for Chronic Kidney Disease in Adult Males in Vojvodina: A Cross-Sectional Study. *J Med Biochem*. 2017;36(2):153-162. doi:10.1515/jomb-2017-0006

46. Ebert N, Jakob O, Gaedeke J, et al. Prevalence of reduced kidney function and albuminuria in older adults: The Berlin initiative study. *Nephrology Dialysis Transplantation*. 2017;32(6):997-1005. doi:10.1093/ndt/gfw079

47. Faye M, Tall Lemrabott A, Moustapha Cissé M, et al. *Renal Data from Asia-Africa Prevalence and Risk Factors of Chronic Kidney Disease in an African Semi-Urban Area: Results from a Cross-Sectional Survey in Gueoul, Senegal*. Vol 28.; 2017:1389-1396. doi:10.4103/1319-2442.220878

48. Gergei I, Klotsche J, Woitas RP, et al. Chronic kidney disease in primary care in Germany. *Journal of Public Health (Germany)*. 2017;25(2):223-230. doi:10.1007/s10389-016-0773-0

49. Greffin S, André MB, Matos JPS de, et al. Chronic kidney disease and metabolic syndrome as risk factors for cardiovascular disease in a primary care program. *Jornal Brasileiro de Nefrologia*. 2017;39(3). doi:10.5935/0101-2800.20170040

50. Iwagami M, Tomlinson LA, Mansfield KE, et al. Validity of estimated prevalence of decreased kidney function and renal replacement therapy from primary care electronic health records compared with national survey and registry data in the United Kingdom. *Nephrology Dialysis Transplantation*. 2017;32:ii142-ii150. doi:10.1093/ndt/gfw318

51. Kalyesubula R, Nankabirwa JI, Ssinabulya I, et al. Kidney disease in Uganda: a community based study. *BMC Nephrol*. 2017;18(1). doi:10.1186/s12882-017-0521-x

52. König M, Gollasch M, Demuth I, Steinhagen-Thiessen E. Prevalence of Impaired Kidney Function in the German Elderly: Results from the Berlin Aging Study II (BASE-II). *Gerontology*. 2017;63(3):201-209. doi:10.1159/000454831

53. Okwuonu CG, Chukwuonye II, Adejumo OA, Agaba EI, Ojogwu LI. Prevalence of chronic kidney disease and its risk factors among adults in a semi-urban community of South-East Nigeria. *Niger Postgrad Med J*. 2017;24(2):81-87. doi:10.4103/npmj.npmj_34_17

54. Oluyombo R, Olamoyegun MA, Ayodele OE, Akinwusi PO, Akinsola A. Clustering of chronic kidney disease and cardiovascular risk factors in South-West Nigeria. *J Nephropathol*. 2017;6(3):196-203. doi:10.15171/jnp.2017.33

55. Piccolli AP, Nascimento MM do, Riella MC. Prevalence of chronic kidney disease in a population in southern Brazil (Pro-Renal Study). *J Bras Nefrol*. 2017;39(4):384-390. doi:10.5935/0101-2800.20170070

56. Sepanlou SG, Barahimi H, Najafi I, et al. Prevalence and determinants of chronic kidney disease in northeast of Iran: Results of the Golestan cohort study. *PLoS One*. 2017;12(5). doi:10.1371/journal.pone.0176540

57. Tran HTB, Du TTN, Phung ND, et al. A simple questionnaire to detect chronic kidney disease patients from Long An province screening data in Vietnam. *BMC Res Notes*. 2017;10(1). doi:10.1186/s13104-017-2847-7

58. Trocchi P, Girndt M, Scheidt-Nave C, Markau S, Stang A. Impact of the estimation equation for GFR on population-based prevalence estimates of kidney dysfunction. *BMC Nephrol*. 2017;18(1). doi:10.1186/s12882-017-0749-5

59. Zdrojewski Ł, Król E, Rutkowski B, et al. Chronic kidney disease in Polish elderly population aged 75+: results of the WOBASZ Senior Survey. *Int Urol Nephrol*. 2017;49(4):669-676. doi:10.1007/s11255-016-1477-7

60. Cole NI, Liyanage H, Suckling RJ, et al. An ontological approach to identifying cases of chronic kidney disease from routine primary care data: A cross-sectional study. *BMC Nephrol*. 2018;19(1). doi:10.1186/s12882-018-0882-9

61. Gorostidi M, Sánchez-Martínez M, Ruilope LM, et al. Chronic kidney disease in Spain: Prevalence and impact of accumulation of cardiovascular risk factors. *Nefrología*. 2018;38(6):606-615. doi:10.1016/j.nefro.2018.04.004

62. Ravi R, Vijayan M, Ravi R, et al. Prevalence and staging of chronic kidney disease among adults in Chennai metropolitan area. *J Indian Med Assoc*. 2018;116(2):47-50.

63. Tsai MH, Hsu CY, Lin MY, et al. Incidence, prevalence, and duration of chronic kidney disease in Taiwan: Results from a community-based screening program of 106,094 individuals. *Nephron*. 2018;140(3):175-184. doi:10.1159/000491708

64. Amaral TLM, Amaral C de A, de Vasconcellos MTL, Monteiro GTR. Prevalence and factors associated to chronic kidney disease in older adults. *Rev Saude Publica*. 2019;53. doi:10.11606/S1518-8787.2019053000727

65. Bakhshayeshkaram M, Roozbeh J, Heydari ST, et al. A Population-Based Study on the Prevalence and Risk Factors of Chronic Kidney Disease in Adult Population of Shiraz, Southern Iran. *Galen Medical Journal*. 2019;8:935. doi:10.31661/gmj.v0i0.935

66. Bello AK, Ronksley PE, Tangri N, et al. Prevalence and Demographics of CKD in Canadian Primary Care Practices: A Cross-sectional Study. *Kidney Int Rep*. 2019;4(4):561-570. doi:10.1016/j.ekir.2019.01.005

67. Chukwuonye II, Ohagwu KA, Adelowo OO, et al. Prevalence and Predictors of Chronic Kidney Disease in a Semiurban Community in Lagos. *Int J Nephrol*. 2019;2019. doi:10.1155/2019/1625837

68. Duan J, Wang C, Liu D, et al. Prevalence and risk factors of chronic kidney disease and diabetic kidney disease in Chinese rural residents: a cross-sectional survey. *Sci Rep*. 2019;9(1). doi:10.1038/s41598-019-46857-7

69. Herath N, Dassanayake R, Dissanayake M, et al. Normality data of eGFR and validity of commonly used screening tests for CKD in an area with endemic CKD of unknown etiology; Need for age and sex based precise cutoff values. *BMC Nephrol*. 2019;20(1). doi:10.1186/s12882-019-1477-9

70. Ji A, Pan C, Wang H, et al. Prevalence and associated risk factors of chronic kidney disease in an elderly population from eastern China. *Int J Environ Res Public Health*. 2019;16(22). doi:10.3390/ijerph16224383

71. Kumar P R, Dongre A, Muruganandham R, Deshmukh P, Rajagovindan D. Prevalence of Chronic Kidney Disease and Its Determinants in Rural Pondicherry, India-A Community Based Cross-Sectional Study. *Open Urol Nephrol J*. 2019;12(1):14-22. doi:10.2174/1874303x01912010014

72. Lloyd H, Li G, Tomlin A, Tilyard MW, Walker R, Schollum J. Prevalence and risk factors for chronic kidney disease in primary health care in the southern region of New Zealand. *Nephrology*. 2019;24(3):308-315. doi:10.1111/nep.13395

73. Manuel Orantes-Navarro C, Almaguer-López MS MM, Alonso-Galbán PM, et al. *The Chronic Kidney Disease Epidemic in El Salvador: A Cross-Sectional Study*. Vol 21. doi:10.37757/MR2019.V21.N2-3.7

74. Radford J, Kitsos A, Stankovich J, et al. Epidemiology of chronic kidney disease in Australian general practice: National Prescribing Service MedicineWise MedicineInsight dataset. *Nephrology*. 2019;24(10):1017-1025. doi:10.1111/nep.13537

75. Rai PK, Rai P, Bhat RG, Bedi S. Chronic Kidney Disease among Middle-Aged and Elderly Population: A Cross-Sectional Screening in a Hospital Camp in Varanasi, India. *Saudi J Kidney Dis Transpl*. 2019;30(4):795-802. http://www.sjkdt.org

76. Shen Q, Jin W, Ji S, Chen X, Zhao X, Behera TR. The association between socioeconomic status and prevalence of chronic kidney disease A cross-sectional study among rural residents in eastern China. *Medicine (United States)*. 2019;98(11). doi:10.1097/MD.0000000000014822

77. Tatapudi RR, Rentala S, Gullipalli P, et al. High Prevalence of CKD of Unknown Etiology in Uddanam, India. *Kidney Int Rep*. 2019;4(3):380-389. doi:10.1016/j.ekir.2018.10.006

78. Wei H, Yan Y, Gong J, Dong J. Prevalence of kidney damage in Chinese elderly: A large-scale population-based study. *BMC Nephrol*. 2019;20(1). doi:10.1186/s12882-019-1525-5

79. Yamada Y, Ikenoue T, Saito Y, Fukuma S. Undiagnosed and untreated chronic kidney disease and its impact on renal outcomes in the Japanese middle-aged general population. *J Epidemiol Community Health (1978)*. 2019;73(12):1122-1127. doi:10.1136/jech-2019-212858

80. Aguiar LK de, Ladeira RM, Machado ÍE, Bernal RTI, Moura L de, Malta DC. Factors associated with chronic kidney disease, according to laboratory criteria of the National Health Survey. *Brazilian Journal of Epidemiology*. 2020;23:e200101. doi:10.1590/1980-549720200101

81. Bikbov MM, Zainullin RM, Kazakbaeva GM, et al. Chronic kidney disease in Russia: The Ural eye and medical study. *BMC Nephrol*. 2020;21(1). doi:10.1186/s12882-020-01843-4

82. Boyle SM, Zhao Y, Chou E, Moore K, Harhay MN. Neighborhood context and kidney disease in Philadelphia. *SSM Popul Health*. 2020;12. doi:10.1016/j.ssmph.2020.100646

83. Bragg-Gresham J, Thakur JS, Jeet G, et al. Population-based comparison of chronic kidney disease prevalence and risk factors among adults living in the Punjab, Northern India and the USA (2013-2015). *BMJ Open*. 2020;10(12). doi:10.1136/bmjopen-2020-040444

84. Duan JY, Duan GC, Wang CJ, et al. Prevalence and risk factors of chronic kidney disease and diabetic kidney disease in a central Chinese urban population: A cross-sectional survey. *BMC Nephrol*. 2020;21(1). doi:10.1186/s12882-020-01761-5

85. Ferguson R, Leatherman S, Fiore M, et al. Prevalence and Risk Factors for CKD in the General Population of Southwestern Nicaragua. *Journal of the American Society of Nephrology*. 2020;31(7):1585-1593. doi:10.1681/ASN.2019050521

86. Gummidi B, John O, Ghosh A, et al. A Systematic Study of the Prevalence and Risk Factors of CKD in Uddanam, India. *Kidney Int Rep*. 2020;5(12):2246-2255. doi:10.1016/j.ekir.2020.10.004

87. Hirst JA, Ordóñez Mena JM, Taylor CJ, et al. Prevalence of chronic kidney disease in the community using data from OxRen: A UK population-based cohort study. *British Journal of General Practice*. 2020;70(693):E285-E293. doi:10.3399/bjgp20X708245

88. Jin H, Zhou J, Wu C. Prevalence and health correlates of reduced kidney function among community-dwelling Chinese older adults: The China Health and Retirement Longitudinal Study. *BMJ Open*. 2020;10(12). doi:10.1136/bmjopen-2020-042396

89. Jonsson AJ, Lund SH, Eriksen BO, Palsson R, Indridason OS. The prevalence of chronic kidney disease in Iceland according to KDIGO criteria and age-adapted estimated glomerular filtration rate thresholds. *Kidney Int*. 2020;98(5):1286-1295. doi:10.1016/j.kint.2020.06.017

90. Kibria GM al, Crispen R. Prevalence and trends of chronic kidney disease and its risk factors among US adults: An analysis of NHANES 2003-18. *Prev Med Rep*. 2020;20. doi:10.1016/j.pmedr.2020.101193

91. Masimango MI, Sumaili EK, Wallemacq P, et al. Prevalence and Risk Factors of CKD in South Kivu, Democratic Republic of Congo: A Large-Scale Population Study. *Kidney Int Rep*. 2020;5(8):1251-1260. doi:10.1016/j.ekir.2020.05.028

92. Mohanty NK, Sahoo KC, Pati S, Sahu AK, Mohanty R. Prevalence of chronic kidney disease in cuttack district of Odisha, India. *Int J Environ Res Public Health*. 2020;17(2). doi:10.3390/ijerph17020456

93. Olanrewaju TO, Aderibigbe A, Popoola AA, et al. Prevalence of chronic kidney disease and risk factors in North-Central Nigeria: a population-based survey. *BMC Nephrol*. 2020;21(1). doi:10.1186/s12882-020-02126-8

94. Peer N, George J, Lombard C, Steyn K, Levitt N, Kengne AP. Prevalence, concordance and associations of chronic kidney disease by five estimators in South Africa. *BMC Nephrol*. 2020;21(1). doi:10.1186/s12882-020-02018-x

95. Saminathan TA, Hooi LS, Mohd Yusoff MF, et al. Prevalence of chronic kidney disease and its associated factors in Malaysia; Findings from a nationwide population-based cross-sectional study. *BMC Nephrol*. 2020;21(1). doi:10.1186/s12882-020-01966-8

96. Vart P, Powe NR, McCulloch CE, et al. National Trends in the Prevalence of Chronic Kidney Disease among Racial/Ethnic and Socioeconomic Status Groups, 1988-2016. *JAMA Netw Open*. 2020;3(7). doi:10.1001/jamanetworkopen.2020.7932

97. Vinhas J, Aires I, Batista C, et al. RENA Study: Cross-Sectional Study to Evaluate CKD Prevalence in Portugal. *Nephron*. 2020;144(10):479-487. doi:10.1159/000508678

98. Walbaum M, Scholes S, Pizzo E, Paccot M, Mindell JS. Chronic kidney disease in adults aged 18 years and older in Chile: findings from the cross-sectional Chilean National Health Surveys 2009-2010 and 2016-2017. *BMJ Open*. 2020;10(9):e037720. doi:10.1136/bmjopen-2020-037720

99. Xu L, Liu J, Yang H, et al. Prevalence of chronic renal insufficiency in the Chinese population: A cross-sectional study. Published online 2020. doi:10.21203/rs.3.rs-17894/v1

100. Alvand S, Abolnezhadian F, Alatab S, et al. Prevalence of impaired renal function and determinants in the southwest of Iran. *BMC Nephrol*. 2021;22(1). doi:10.1186/s12882-021-02484-x

101. Cheng Y, Liu M, Liu Y, et al. Chronic kidney disease: prevalence and association with handgrip strength in a cross-sectional study. *BMC Nephrol*. 2021;22(1). doi:10.1186/s12882-021-02452-5

102. Duggal V, Thomas IC, Montez-Rath ME, Chertow GM, Tamura MK. National estimates of CKD prevalence and potential impact of estimating glomerular filtration rate without race. *Journal of the American Society of Nephrology*. 2021;32(6):1454-1463. doi:10.1681/ASN.2020121780

103. Gbaguidi GN, Houehanou CY, Amidou SA, Vigan J, Houinato DS, Lacroix P. Prevalence of abnormal kidney function in a rural population of Benin and associated risk factors. *BMC Nephrol*. 2021;22(1). doi:10.1186/s12882-021-02316-y

104. Jose M, Raj R, Jose K, et al. Island medicine: Using data linkage to establish the kidney health of the population of Tasmania, Australia. *Int J Popul Data Sci*. 2021;6(1). doi:10.23889/IJPDS.V6I1.1665

105. Kaze FF, Maimouna M, Beybey AF, et al. Prevalence and determinants of chronic kidney disease in urban adults' populations of northern Cameroon. *Clin Exp Nephrol*. 2021;25(7):718-726. doi:10.1007/s10157-021-02036-5

106. Miller AC, Tuiz E, Shaw L, et al. Population Estimates of GFR and Risk Factors for CKD in Guatemala. *Kidney Int Rep*. 2021;6(3):796-805. doi:10.1016/j.ekir.2020.12.015

107. Nagai K, Asahi K, Iseki K, Yamagata K. Estimating the prevalence of definitive chronic kidney disease in the Japanese general population. *Clin Exp Nephrol*. 2021;25(8):885-892. doi:10.1007/s10157-021-02049-0

108. Okafor U, Nebo C, Asogwa P, Ogbobe O, Ugwu N. Screening for kidney disease in an urban population in Nigeria. ISN World Congress of Nephrology 2020. doi:10.1016/j.ekir.2020.02.675

109. Olié V, Cheddani L, Stengel B, et al. Prevalence of chronic kidney disease in France, Esteban study 2014–2016. *Nephrologie et Therapeutique*. 2021;17(7):526-531. doi:10.1016/j.nephro.2021.05.006

110. Sarker MHR, Moriyama M, Rashid HU, et al. Community-based screening to determine the prevalence, health and nutritional status of patients with CKD in rural and peri-urban Bangladesh. *Ther Adv Chronic Dis*. 2021;12. doi:10.1177/20406223211035281

111. Xu L, Liu J, Li D, Yang H, Zhou Y, Yang J. Association between metabolic syndrome components and chronic kidney disease among 37,533 old Chinese individuals. *Int Urol Nephrol*. 2022;54(6):1445-1454. doi:10.1007/s11255-021-03013-3

112. Cook S, Solbu MD, Eggen AE, et al. Comparing prevalence of chronic kidney disease and its risk factors between population-based surveys in Russia and Norway. *BMC Nephrol*. 2022;23(1). doi:10.1186/s12882-022-02738-2

113. Dehghani A, Alishavandi S, Nourimajalan N, Fallahzadeh H, Rahmanian V. Prevalence of chronic kidney diseases and its determinants among Iranian adults: results of the first phase of Shahedieh cohort study. *BMC Nephrol*. 2022;23(1). doi:10.1186/s12882-022-02832-5

114. Domislovic M, Gellineo L, Jelakovic A, et al. Prevalence of chronic kidney disease - preliminary results EH-UH study (Croatian Scientific Foundation). In: *European Society of Hypertension*. ; 2022.

115. Eguiguren-Jimenez L, Miles J, Ocampo J, Andrade JM. Prevalence and associated risk factors of chronic kidney disease: A case study within SIME clinics in Quito, Ecuador 2019–2021. *Front Med (Lausanne)*. 2022;9. doi:10.3389/fmed.2022.908551

116. Kebede KM, Abateneh DD, Teferi MB, Asres A. Chronic kidney disease and associated factors among adult population in Southwest Ethiopia. *PLoS One*. 2022;17(3 March). doi:10.1371/journal.pone.0264611

117. ben Khadda Z, Berni I, Sqalli Houssaini T. Prevalence and risk factors associated with chronic kidney disease in Moroccan rural communes: Fez-Meknes region. *Nephrologie et Therapeutique*. 2022;18(2):121-128. doi:10.1016/j.nephro.2021.11.005

118. Kim H, Hur M, Lee S, Lee GH, Moon HW, Yun YM. European Kidney Function Consortium Equation vs. Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) Refit Equations for Estimating Glomerular Filtration Rate: Comparison with CKD-EPI Equations in the Korean Population. *J Clin Med*. 2022;11(15). doi:10.3390/jcm11154323

119. Ndulue C, Jisieike N, Odenigbo U C, Ulasi I I. Gender differences in the prevalence of kidney disease and distribution of risk factors for kidney disease in rural Nigerians. ISN World Congress of Nephrology 2022. doi:10.1016/j.ekir.2022.01.322

120. Poudyal A, Karki KB, Shrestha N, et al. Prevalence and risk factors associated with chronic kidney disease in Nepal: Evidence from a nationally representative population-based cross-sectional study. *BMJ Open*. 2022;12(3). doi:10.1136/bmjopen-2021-057509

121. Ranivoharisoa ÉM, Randriamahazo TR, Raherinandrasana AH, et al. Prevalence of chronic kidney disease in Antananarivo, Madagascar. *Nephrologie et Therapeutique*. 2022;18(1):29-34. doi:10.1016/j.nephro.2021.08.009

122. Sundström J, Bodegard J, Bollmann A, et al. Prevalence, outcomes, and cost of chronic kidney disease in a contemporary population of 2.4 million patients from 11 countries: The CaReMe CKD study. *The Lancet Regional Health - Europe*. 2022;20:100438. doi:10.1016/j.lanepe.2022.100438

123. Umebayashi R, Uchida HA, Matsuoka-Uchiyama N, Sugiyama H, Wada J. Prevalence of Chronic Kidney Disease and Variation of Its Risk Factors by the Regions in Okayama Prefecture. *J Pers Med*. 2022;12(1). doi:10.3390/jpm12010097

124. Wijewickrama ES, Thakshila WAG, Ekanayake EMD, et al. Prevalence of CKD of Unknown Etiology and its Potential Risk Factors in a Rural Population in Sri Lanka. *Kidney Int Rep*. 2022;7(10):2303-2307. doi:10.1016/j.ekir.2022.07.012

125. Xiao H, Shao X, Gao P, Zou H, Zhang X. Metabolic Syndrome Components and Chronic Kidney Disease in a Community Population Aged 40 Years and Older in Southern China: A Cross-Sectional Study. *Diabetes Metab Syndr Obes*. 2022;15:839-848. doi:10.2147/DMSO.S353305

126. Aitken GR, Roderick PJ, Fraser S, et al. Change in prevalence of chronic kidney disease in England over time: comparison of nationally representative cross-sectional surveys from 2003 to 2010. *BMJ Open*. 2014;4(9):e005480-e005480. doi:10.1136/bmjopen-2014-005480

127. Alam A, Amanullah F, Baig-Ansari N, Lotia-Farrukh I, Khan FS. Prevalence and risk factors of kidney disease in urban Karachi: Baseline findings from a community cohort study. *BMC Res Notes*. 2014;7(1). doi:10.1186/1756-0500-7-179

128. Anand S, Khanam MA, Saquib J, et al. High prevalence of chronic kidney disease in a community survey of urban Bangladeshis: A cross-sectional study. *Global Health*. 2014;10(1). doi:10.1186/1744-8603-10-9

129. Anupama Y, Uma G. Prevalence of chronic kidney disease among adults in a rural community in South India: Results from the kidney disease screening (KIDS) project. *Indian J Nephrol*. 2014;24(4):214. doi:10.4103/0971-4065.132990

130. Burkhalter F, Sannon H, Mayr M, Dickenmann M, Ernst S. Prevalence and risk factors for chronic kidney disease in a rural region of Haiti. *Swiss Med Wkly*. Published online December 23, 2014. doi:10.4414/smw.2014.14067

131. Chudek J, Wieczorowska-Tobis K, Zejda J, et al. The prevalence of chronic kidney disease and its relation to socioeconomic conditions in an elderly Polish population: Results from the national population-based study PolSenior. *Nephrology Dialysis Transplantation*. 2014;29(5):1073-1082. doi:10.1093/ndt/gft351

132. Cueto-Manzano AM, Cortés-Sanabria L, Martínez-Ramírez HR, Rojas-Campos E, Gómez-Navarro B, Castillero-Manzano M. Prevalence of chronic kidney disease in an adult population. *Arch Med Res*. 2014;45(6):507-513. doi:10.1016/j.arcmed.2014.06.007

133. Egbi OG, Okafor UH, Miebodei KE, Kasia BE, Kunle-Olowu OE, Unuigbe EI. Prevalence and correlates of chronic kidney disease among civil servants in Bayelsa state, Nigeria. *Niger J Clin Pract*. 2014;17(5):602-607. doi:10.4103/1119-3077.141426

134. Fraser SDS, Roderick PJ, Aitken G, et al. Chronic kidney disease, albuminuria and socioeconomic status in the Health Surveys for England 2009 and 2010. *J Public Health (Bangkok)*. 2014;36(4):577-586. doi:10.1093/pubmed/fdt117

135. Hong N, Oh J, Lee Y ho, et al. Comparison of association of glomerular filtration rate with metabolic syndrome in a community-based population using the CKD-EPI and MDRD study equations. *Clinica Chimica Acta*. 2014;429:157-162. doi:10.1016/j.cca.2013.12.008

136. Jain P, Calvert M, Cockwell P, McManus RJ. The need for improved identification and accurate classification of stages 3-5 chronic kidney disease in primary care: Retrospective cohort study. *PLoS One*. 2014;9(8). doi:10.1371/journal.pone.0100831

137. Jameson K, Jick S, Hagberg KW, Ambegaonkar B, Giles A, O'Donoghue D. Prevalence and management of chronic kidney disease in primary care patients in the UK. *Int J Clin Pract*. 2014;68(9):1110-1121. doi:10.1111/ijcp.12454

138. Jessani S, Bux R, Jafar TH. Prevalence, determinants, and management of chronic kidney disease in Karachi, Pakistan - A community based cross-sectional study. *BMC Nephrol*. 2014;15(1). doi:10.1186/1471-2369-15-90

139. Khajehdehi P, Malekmakan L, Pakfetrat M, Roozbeh J, Sayadi M. Prevalence of Chronic Kidney Disease and Its Contributing Risk Factors in Southern Iran A Cross-sectional Adult Population-based Study. *Iran J Kidney Dis*. 2014;8(2):109-124. www.ijkd.org

140. Li Y, Chen Y, Liu X, et al. Metabolic syndrome and chronic kidney disease in a Southern Chinese population. *Nephrology*. 2014;19(6):325-331. doi:10.1111/nep.12219

141. Lin B, Shao L, Luo Q, et al. Prevalence of chronic kidney disease and its association with metabolic diseases: A cross-sectional survey in Zhejiang province, Eastern China. *BMC Nephrol*. 2014;15(1). doi:10.1186/1471-2369-15-36

142. Mendy VL, Azevedo MJ, Sarpong DF, et al. The association between individual and combined components of metabolic syndrome and chronic kidney disease among African Americans: The Jackson Heart Study. *PLoS One*. 2014;9(7). doi:10.1371/journal.pone.0101610

143. Mitchell T, Hadlow N, Chakera A. Impact of routine reporting of estimated glomerular filtration rate using the CKD-EPI formula in a community population: A cross-sectional cohort study. *Nephrology*. 2014;19(9):581-586. doi:10.1111/nep.12283

144. Olszewski A, Olszewska W, Pawłowska A, et al. Chronic kidney disease in elderly - Fact or fiction? *Polish Annals of Medicine*. 2014;21(2):90-95. doi:10.1016/j.poamed.2014.07.008

145. Pani A, Bragg-Gresham J, Masala M, et al. Prevalence of CKD and Its Relationship to eGFR-Related Genetic Loci and Clinical Risk Factors in the SardiNIA Study Cohort. *Journal of the American Society of Nephrology*. 2014;25(7):1533-1544. doi:10.1681/ASN.2013060591

146. Seck SM, Doupa D, Guéye L, Dia CA. Epidemiology of chronic kidney disease in northern region of Senegal: A community-based study in 2012. *Pan African Medical Journal*. 2014;18. doi:10.11604/pamj.2014.18.307.3636

147. Seck SM, Doupa D, Gueye L, Dia CA. Prevalence of Chronic kidney Disease and associated factors in Senegalese populations: A community-based study in Saint-Louis. *Nephrourol Mon*. 2014;6(5). doi:10.5812/numonthly.19085

148. Mohamed Seck S, Doupa D, Guéye L, Ba I, Anta Diop Dakar C. Chronic Kidney Disease Epidemiology in Northern Senegal: A Cross-sectional Study. *Iran J Kidney Dis*. 2014;8(4):286-291. www.ijkd.org

149. Shin SY, Kwon MJ, Park H, Woo HY. Comparison of chronic kidney disease prevalence examined by the chronic kidney disease epidemiology collaboration equation with that by the modification of diet in renal disease equation in korean adult population. *J Clin Lab Anal*. 2014;28(4):320-327. doi:10.1002/jcla.21688

150. Stack AG, Casserly LF, Cronin CJ, et al. Prevalence and variation of Chronic Kidney Disease in the Irish health system: Initial findings from the National Kidney Disease Surveillance Programme. *BMC Nephrol*. 2014;15(1). doi:10.1186/1471-2369-15-185

151. Van Blijderveen JC, Straus SM, Zietse R, Stricker BH, Sturkenboom MC, Verhamme KM. A population-based study on the prevalence and incidence of chronic kidney disease in the Netherlands. *Int Urol Nephrol*. 2014;46(3):583-592. doi:10.1007/s11255-013-0563-3

152. Van Pottelbergh G, Vaes B, Adriaensen W, et al. The glomerular filtration rate estimated by new and old equations as a predictor of important outcomes in elderly patients. *BMC Med*. 2014;12(27). doi:10.1186/1741-7015-12-27

153. Xue L, Lou Y, Feng X, Wang C, Ran Z, Zhang X. Prevalence of chronic kidney disease and associated factors among the Chinese population in Taian, China Epidemiology and Health Outcomes. *BMC Nephrol*. 2014;15(1). doi:10.1186/1471-2369-15-205

154. Fraser SDS, Aitken G, Taal MW, et al. Exploration of chronic kidney disease prevalence estimates using new measures of kidney function in the health survey for England. *PLoS One*. 2015;10(2). doi:10.1371/journal.pone.0118676

155. Imran S, Sheikh A, Saeed Z, et al. Burden of chronic kidney disease in an urban city of Pakistan, a cross-sectional study. *J Pak Med Assoc*. 2015;65(4):366-369.

156. Kaze FF, Halle MP, Mopa HT, et al. Prevalence and risk factors of chronic kidney disease in urban adult Cameroonians according to three common estimators of the glomerular filtration rate: A cross-sectional study. *BMC Nephrol*. 2015;16(1). doi:10.1186/s12882-015-0102-9

157. Khurram A, Danial K, Qazi A, Ahmed K, Basr S. To Assess and Evaluate the Risk Factors Associated With Chronic Kidney Diseases in Karachi, Pakistan. A cross sectional study. *Pakistan Journal of Medical and Health Sciences*. 2015;9(4).

158. Lawton PD, Cunningham J, Hadlow N, Zhao Y, Jose MD. Chronic kidney disease in the Top End of the Northern Territory of Australia, 2002-2011: A retrospective cohort study using existing laboratory data. *BMC Nephrol*. 2015;16(1). doi:10.1186/s12882-015-0166-6

159. Liu W, Yu F, Wu Y, et al. A retrospective analysis of kidney function and risk factors by Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation in elderly Chinese patients. *Ren Fail*. 2015;37(8):1323-1328. doi:10.3109/0886022X.2015.1068513

160. Otero Gonzalez A, Prol MPB, Caride MJC, et al. Estimated glomerular filtration rate (eGFR), 25(OH) D3, chronic kidney disease (CKD), the MYH9 (myosin heavy chain 9) gene in old and very elderly people. *Int Urol Nephrol*. 2015;47(8):1403-1408. doi:10.1007/s11255-015-1041-x

161. Perez-Monteoliva NRR, Felix FJ, Lozano L, Miranda I, Fernandez-Berges D, Macías JF. The H.U.G.E. formula (hematocrit, urea, sex) for screening chronic kidney disease (CKD) in an age-stratified general population. *J Nutr Health Aging*. 2015;19(6):688-692. doi:10.1007/s12603-015-0504-1

162. Thawornchaisit P, de Looze F, Reid CM, Seubsman S ang, Tran TT am, Sleigh A. Health-Risk Factors and the Prevalence of Chronic Kidney Disease: Cross-Sectional Findings from a National Cohort of 87,143 Thai Open University Students. *Glob J Health Sci*. 2015;7(5):59-72. doi:10.5539/gjhs.v7n5p59

163. Uchida D, Kawarazaki H, Shibagaki Y, et al. Underestimating chronic kidney disease by urine dipstick without serum creatinine as a screening tool in the general Japanese population. *Clin Exp Nephrol*. 2015;19(3):474-480. doi:10.1007/s10157-014-1019-5

164. Ullah K, Butt G, Masroor I, Kanwal K, Kifayat F. Epidemiology of chronic kidney disease in a Pakistani population. *Saudi Journal of Kidney Diseases and Transplantation*. 2015;26(6):1307. doi:10.4103/1319-2442.168694

165. Acuña L, Sánchez P, Soler LA, Alvis LF. Kidney disease in Colombia: Priority for risk management. *Rev Panam Salud Publica*. 2016;40(1):16-22.

166. Al Wakeel J. Comparison of Estimated Glomerular Filtration Rate using CKD-EPI and MDRD equations in screening prevalence of CKD in healthy Saudi population. *Kuwait Medical Journal*. 2016;48(3).

167. Barreto SM, Ladeira RM, Duncan BB, et al. Chronic kidney disease among adult participants of the ELSA-Brasil cohort: Association with race and socioeconomic position. *J Epidemiol Community Health (1978)*. 2015;70(4):380-389. doi:10.1136/jech-2015-205834

168. Forni Ogna V, Ogna A, Ponte B, et al. Prevalence and determinants of chronic kidney disease in the Swiss population. *Swiss Med Wkly*. 2016;146:w14313. doi:10.4414/smw.2016.14313

169. Ji M, Lee YH, Hur M, et al. Comparing results of five glomerular filtration rate-estimating equations in the Korean general population: MDRD Study, revised Lund-Malmö, and three CKD-EPI equations. *Ann Lab Med*. 2016;36(6):521-528. doi:10.3343/alm.2016.36.6.521

170. Murphy D, McCulloch CE, Lin F, et al. Trends in prevalence of chronic kidney disease in the United States. *Ann Intern Med*. 2016;165(7):473-481. doi:10.7326/M16-0273

171. Kang YH, Jeong DW, Son SM. Prevalence of reduced kidney function by estimated glomerular filtration rate using an equation based on creatinine and cystatin C in metabolic syndrome and its components in Korean adults. *Endocrinology and Metabolism*. 2016;31(3):446-453. doi:10.3803/EnM.2016.31.3.446

172. Crews DC, Campbell KN, Liu Y, Bussue O, Dawkins I, Young BA. Chronic kidney disease and risk factor prevalence in Saint Kitts and Nevis: A cross-sectional study. *BMC Nephrol*. 2017;18(1). doi:10.1186/s12882-016-0424-2

173. Herrera-Añazco P, Taype-Rondan A, Lazo-Porras M, Alberto Quintanilla E, Ortiz-Soriano VM, Hernandez A V. Prevalence of chronic kidney disease in Peruvian primary care setting. *BMC Nephrol*. 2017;18(1). doi:10.1186/s12882-017-0655-x

174. Saber A, Tahami AN, Najafipour H, Azmandian J. Assessment of prevalence of chronic kidney disease and its predisposing factors in Kerman city. *Nephrourol Mon*. 2017;9(2). doi:10.5812/numonthly.41794

175. Adjei DN, Stronks K, Adu D, et al. Chronic kidney disease burden among African migrants in three European countries and in urban and rural Ghana: The RODAM cross-sectional study. *Nephrology Dialysis Transplantation*. 2018;33(10):1812-1822. doi:10.1093/ndt/gfx347

176. Ginawi IA. Occurrence of chronic kidney disease among population in Saudi Arabia's North region. *Biochem Cell Arch*. 2018;18(1):649-653. www.connectjournals.com/bca

177. Han Q, Zhang D, Mao R, et al. Research on the prevalence of chronic kidney disease and risk factors in northern populations of China. *Int J Clin Exp Med*. 2018;11(8):8585-8592.

178. Hirst JA, Vazquez Montes MDLA, Taylor CJ, et al. Impact of a single eGFR and eGFR-estimating equation on chronic kidney disease reclassification: A cohort study in primary care. *British Journal of General Practice*. 2018;68(673):e524-e530. doi:10.3399/bjgp18X697937

179. Major RW, Shepherd D, Brunskill NJ. Reclassification of chronic kidney disease stage, eligibility for cystatin-c and its associated costs in a UK primary care cohort. *Nephron*. 2018;139(1):39-46. doi:10.1159/000487091

180. Oyebisi OO, Okunola OO, Jaiyesimi AE, et al. Prevalence and Pattern of Chronic Kidney Disease and its Associated Risk Factors in a Rural Community in South Western Nigeria. *West Afr J Med*. 2018;35(2):109-116.

181. Polkinghorne KR, Wolfe R, Jachno KM, et al. Prevalence of chronic kidney disease in the elderly using the ASPirin in Reducing Events in the Elderly study cohort. *Nephrology*. 2019;24(12):1248-1256. doi:10.1111/nep.13565

182. Ranasinghe AV, Kumara GWGP, Karunarathna RH, et al. The incidence, prevalence and trends of Chronic Kidney Disease and Chronic Kidney Disease of uncertain aetiology (CKDu) in the North Central Province of Sri Lanka: An analysis of 30,566 patients. *BMC Nephrol*. 2019;20(1). doi:10.1186/s12882-019-1501-0

183. Ranivoharisoa EM, Randriamahazo TR, Raherinandrasana AH, et al. Prevalence of kidney failure among adult population in Madagascar. In: *Kidney Week 2019, Washington DC*. ; 2019.

184. Tomlinson LA, Clase CM. Sex and the incidence and prevalence of kidney disease. *Clinical Journal of the American Society of Nephrology*. 2019;14(11):1557-1559. doi:10.2215/CJN.11030919

185. Tuttle KR, Alicic RZ, Duru OK, et al. Clinical Characteristics of and Risk Factors for Chronic Kidney Disease Among Adults and Children: An Analysis of the CURE-CKD Registry. *JAMA Netw Open*. 2019;2(12):e1918169. doi:10.1001/jamanetworkopen.2019.18169

186. Wang H, Lou Y, Ma Y, Shan X. Estimating the glomerular filtration rate and tubular dysfunction in an elderly population with normoalbuminuria in China. *Clinica Chimica Acta*. 2019;495:377-381. doi:10.1016/j.cca.2019.05.009

187. Wang Q, Zhen D, Su S, Zhang D, Han Y, Yang Y. Analysis of chronic kidney disease and risk factors under various blood glucose conditions in northwest China. In: *23rd Scientific Meeting of the Chinese Diabetes Society*. ; 2019.

188. Corsonello A, Fabbietti P, Formiga F, et al. Chronic kidney disease in the context of multimorbidity patterns: The role of physical performance. *BMC Geriatr*. 2020;20. doi:10.1186/s12877-020-01696-4

189. Fabian J, Kalyesubula R, Tomlinson LA, Crampin M, Naicker S. Epidemiology of chronic kidney disease in East and Southern Sub-Saharan Africa - a multi-center study from Uganda, Malawi and South Africa (The Ark Study). In: *ISN World Congress of Nephrology*. Vol 4. Elsevier BV; 2019. doi:10.1016/j.ekir.2019.05.595

190. Rothenbacher D, Rehm M, Iacoviello L, et al. Contribution of cystatin C- and creatinine-based definitions of chronic kidney disease to cardiovascular risk assessment in 20 population-based and 3 disease cohorts: the BiomarCaRE project. *BMC Med*. 2020;18(1). doi:10.1186/s12916-020-01776-7

191. Weldegiorgis M, Smith M, Herrington WG, Bankhead C, Woodward M. Socioeconomic disadvantage and the risk of advanced chronic kidney disease: Results from a cohort study with 1.4 million participants. *Nephrology Dialysis Transplantation*. 2020;35(9):1562-1570. doi:10.1093/ndt/gfz059

192. Amaral TLM, Amaral C de A, de Vasconcellos MTL, Monteiro GTR. Chronic kidney disease among adults in Rio Branco, State of Acre: A population-based survey. *Ciencia e Saude Coletiva*. 2021;26(1):339-350. doi:10.1590/1413-81232020261.22402018

193. Bragg-Gresham J, Zhang X, Le D, et al. Prevalence of Chronic Kidney Disease among Black Individuals in the US after Removal of the Black Race Coefficient from a Glomerular Filtration Rate Estimating Equation. *JAMA Netw Open*. 2021;4(1). doi:10.1001/jamanetworkopen.2020.35636

194. Hounkpatin HO, Harris S, Fraser SDS, et al. Prevalence of chronic kidney disease in adults in England: Comparison of nationally representative cross-sectional surveys from 2003 to 2016. *BMJ Open*. 2020;10(8). doi:10.1136/bmjopen-2020-038423

195. Llisterri JL, Micó-Pérez RM, Velilla-Zancada S, et al. Prevalence of chronic kidney disease and associated factors in the Spanish population attended in primary care: Results of the IBERICAN study. *Med Clin (Barc)*. 2021;156(4):157-165. doi:10.1016/j.medcli.2020.03.005

196. Marino C, Ferraro PM, Bargagli M, et al. Prevalence of chronic kidney disease in the Lazio region, Italy: A classification algorithm based on health information systems. *BMC Nephrol*. 2020;21(1). doi:10.1186/s12882-020-1689-z

197. Yue L, Fan L, Du X. Age- And Sex-Specific Reference Values of Estimated Glomerular Filtration Rate in Chinese Population. *Gerontology*. 2021;67(4):397-402. doi:10.1159/000513451

198. Akpan EE, Ekrikpo UE, Udo AIA, Umoh VA, Nkanta AS. Comparability of serum creatinine-Based glomerular filtration rate equations in West African adult communities. *Niger J Clin Pract*. 2021;24(5):674-679. doi:10.4103/njcp.njcp_485_20

199. Bavanandam S, Saminathan Thamil Arasu TA, Hooi LS, et al. SAT-212 Is Chronic Kidney Disease on the rise in Malaysia? Findings from a nationwide study. *Kidney Int Rep*. 2019;4(7):S95-S96. doi:10.1016/j.ekir.2019.05.247

200. Huisman BJM V, Agyemang C, Van Den Born BJH, Peters RJG, Snijder MB, Vogt L. Discrepancies in estimated glomerular filtration rate and albuminuria levels in ethnic minority groups − The multiethnic HELIUS cohort study. *EClinicalMedicine*. 2022;5. doi:10.1016/j.eclinm.2022.101324

201. Borg R, Kriegbaum M, Grand MK, Lind BS, Andersen CL, Persson F. Chronic kidney disease in primary care and the risk of cardiovascular morbidity and mortality. In: *Nephrology Dialysis Transplantation*. https://academic.oup.com/ndt/article/37/Supplement_3/gfac071.049/6578238

202. Oliver JD, Nee R, Grunwald LR, et al. Prevalence and Characteristics of CKD in the US Military Health System: A Retrospective Cohort Study. *Kidney Med*. 2022;4(7). doi:10.1016/j.xkme.2022.100487

203. Aashima, Nanda M, Sharma R, Jani C. The burden of chronic kidney disease in Asia, 1990–2019: Examination of estimates from global burden of disease 2019 study. *Nephrology*. 2022;27(7):610-620. doi:10.1111/nep.14051

204. Paparazzo E, Geracitano S, Lagani V, et al. Clinical and Prognostic Implications of Estimating Glomerular Filtration Rate by Three Different Creatinine-Based Equations in Older Nursing Home Residents. *Front Med (Lausanne)*. 2022;9. doi:10.3389/fmed.2022.870835

205. Tafuna'i M, Turner R, Matalavea B, et al. Results of a community-based screening programme for chronic kidney disease and associated risk factors, (obesity, diabetes and hypertension) in a Samoan cohort. *BMJ Open*. 2022;12(4). doi:10.1136/bmjopen-2021-056889

206. Tafuna'i M, Turner RM, Richards R, Sopoaga F, Walker R. The prevalence of chronic kidney disease in Samoans living in Auckland, New Zealand. *Nephrology*. 2022;27(3):248-259. doi:10.1111/nep.13990

207. Walther CP, Winkelmayer WC, Navaneethan SD. Updated US Prevalence Estimates for Chronic Kidney Disease Stage and Complications Using the New Race-Free Equation to Estimate Glomerular Filtration Rate. *JAMA Netw Open*. 2022;5(2):E220460. doi:10.1001/jamanetworkopen.2022.0460