

S5 Appendix. Characteristic of included studies and Newcastle-Ottawa quality assessment scale (NOS).

Abbreviations:

eGFR, estimated glomerular filtration rate; CKD, chronic kidney disease; EPI, epidemiology collaboration equation; MDRD₁₈₆, Modification of Diet in Renal Disease Study with constant factor of 186; MDRD₁₇₅, Modification of Diet in Renal Disease Study with constant factor of 175; N/A, not applicable from studies.

Table S3. Characteristic of studies included in the meta-analysis.

Author	Year	Country	Targeted-population	Number of participants	Male (%)	HT (%)	DM (%)	Medication use (%)	Study design	eGFR equation	Newcastle-Ottawa Scale
Aekplakorn et al. *, † [1]	2021	Thailand	Age ≥20 years	17,329	48	28.5	9.8	-	Cross-sectional study	CKD-EPI	High
Alam et al. *, † [2]	2014	Pakistan	Age ≥15 years	350	36	20.9	8.6	-	Cross-sectional study	MDRD 186	High
Anand et al. *, † [3]	2014	Bangladesh	Age >30 years	357	51	37.2	-	-	Cross-sectional study	CKD-EPI	High
Anand et al. *, † [4]	2017	India	Age >40 years without self-reported heart disease or stroke	5,294	48.4	37.0	23.7	-	Cross-sectional study	CKD-EPI	High
Anupama et al. *, † [5]	2014	India	Age ≥18 years	2,091	45.6	33.6	3.8	-	Cross-sectional study	MDRD 186	High
Anupama et al. *, † [6]	2017	India	Age ≥18 years	1,331	44	32.6	6.6	-	Cross-sectional study	MDRD 186	High
Bahadoran et al.* [7]	2016	Iran	Age ≥20 years	3,462	13.4	17.9	11.5	-	Cross-sectional study	CKD-EPI	High
Bragg-Gresham et al. * [8]	2020	India	Age range of 18 - 69 years	2,002	58.2	48.2	4.0	-	Cross-sectional study	CKD-EPI	High
Cao et al. *, † [9]	2013	China	Age >18 years, all HIV-infected and ART-naïve patients	538	74.2	2.8	-	-	Cross-sectional study	MDRD 186	High
Chen et al.* [10]	2008	China	Age ≥20 years	6,101	-	19.2	5.5	-	Cross-sectional study	eMDRD 175	High
Chen et al. *, † [11]	2011	China	Age ≥18 years	1,289	-	38.8	2.9	-	Cross-sectional study	eMDRD 175	High
Das et al. * [12]	2019	Bangladesh	Age ≥19 years	218,888	56.6	-	-	-	Cross-sectional study	CKD-EPI	High
Dhimal et al.* [13]	2019	Nepal	Age ≥20 years	13,200	42.2	-	8.5	-	Cross-sectional study	N/A	Moderate
Ding et al. * [14]	2012	China	Men ≥55 years and women ≥65 years with stable premature coronary artery disease (CAD)	512	41	68	18.8	-	Cohort study	MDRD 186	Moderate
Domrongkitthaiporn et al. *, † [15]	2004	Thailand	Age range of 35 - 54 years	3,499	77.2	-	6.8	-	Cohort study	MDRD 186	Moderate
Du et al. *, † [16]	2017	China	Age range of 20 - 49 years, married group	3,091,379	48.3	4.1	0.7	-	Cross-sectional study	CKD-EPI	Moderate
Duan et al. *, † [17]	2019	China	Age ≥18 years	23,869	40.2	28.9	11.4	-	Cross-sectional study	CKD-EPI	High
Fan et al.* [18]	2013	China	Age range of 18 - 74 years	4,473	46.7	-	-	-	Cross-sectional study	CKD-EPI	High
Farag et al. *, † [19]	2020	India	Age ≥18 years	1,184	44.0	45.5	22.1	-	Cross-sectional study	CKD-EPI	Moderate
Farhadnejad et al.* [20]	2019	Tehran, Iran	Age ≥20 years	1,797	48	17.7	11.7	-	Cross-sectional study	MDRD 186	High
Fatema et al.* [21]	2013	Bangladesh	Age ≥18 years	634	88.3	25.2	8.5	-	Cross-sectional study	MDRD 186	Moderate
Feng et al. *, † [22]	2019	Bangladesh, Pakistan and Sri Lanka	Age ≥40 years, hypertensive adults	Bangladesh:868, Pakistan: 685, Sri Lanka:796	Bangladesh: 36.2, Pakistan: 39.3, Sri Lanka: 31.7	100.0	26.7	-	Cross-sectional study	CKD-EPI	High

Author	Year	Country	Targeted-population	Number of participants	Male (%)	HT (%)	DM (%)	Medication use (%)	Study design	eGFR equation	Newcastle-Ottawa Scale
Gallieni et al.* [23]	2013	India	Age ≥30 years	1,526	42.7	39.4	-	-	Cross-sectional study	MDRD 186	High
Guo et al.* [24]	2017	China	Elderly patients with type 2 Diabetes mellitus	21,723	48.7	62.4	100.0	-	Cross-sectional study	CKD-EPI	Moderate
Han et al.* [25]	2019	China	Age ≥60 years	966	18.1	23.5	5.0	-	Cross-sectional study	CKD-EPI	Moderate
Hasan et al. *, † [26]	2012	Bangladesh	Age range of 18-65 years	1,240	52.4	23.2	10.4	-	Cross-sectional study	MDRD 186	Moderate
He et al.*, † [27]	2016	China	Age ≥20 years, Chinese urban adults	123,629	63.2	23.1	6.6	-	Cross-sectional study	eMDRD 175	High
Herath et al.*, † [28]	2019	Sri Lanka	Age range of 18-93 years, healthy people	7,768	28.9	-	-	-	Cross-sectional study	CKD-EPI	Moderate
Hong et al.*, † [29]	2015	China	Age ≥18 years	41,131	41.9	33.5	7.5	-	Cross-sectional study	eMDRD 175	High
Hooi et al. *, † [30]	2013	Malaysia	Age >18 years	876	47.9	38.4	19.6	NSAIDs 18.8	Cross-sectional study	CKD-EPI	Moderate
Hosseinpanah et al.*, † [31]	2009	Iran	Age >20 years	10,063	42	25.8	13.7	-	Cross-sectional study	MDRD 186	High
Huda et al.* [32]	2012	Bangladesh	Age range of 15-65 years	1,000	33.4	11.6	4.1	-	Cross-sectional study	MDRD 186	Moderate
Hussain et al.*, † [33]	2019	India	Age ≥18 years	323	48.3	68.4	100.0	-	Cross-sectional study	CKD-EPI	High
Imran et al.* [34]	2015	Pakistan	Age ≥30 years	293	65	29.2	24.0	-	Cross-sectional study	CKD-EPI	Moderate
Ingsathit et al. *, † [35]	2009	Thailand	Age ≥18 years	3,459	45.5	27.5	11.9	-	Cross-sectional study	eMDRD 175	High
Ito et al.*, † [36]	2008	Vietnam	Age >40 years	8,505	35.2	30.5	-	NSAIDs 0.1	Cross-sectional study	MDRD 186	High
Jafar et al.* [37]	2005	Pakistan	Age ≥40 years	262	54.2	48.9	10.7	-	Cross-sectional study	MDRD 186	High
Jessani et al.*, † [38]	2014	Pakistan	Age ≥40 years	2,873	47.8	44.9	21.4	-	Cross-sectional study	CKD-EPI	High
Ji et al.* [39]	2017	China	Age >65 years	1,586	44.6	52.6	19.6	-	Cross-sectional study	CKD-EPI	High
Ji et al.*, † [40]	2019	China	Age ≥60 years	34,588	43.3	70.6	24.8	-	Cross-sectional study	eMDRD 175	High
Jiang et al.*, † [41]	2011	China	Age ≥30 years	4,944	44.9	10.6	13.7	-	Cross-sectional study	eMDRD 175	High
Kaewput et al.*, † [42]	2019	Thailand	Age ≥20 years, hypertension patients	9,776	44.1	100.0	11.7	-	Cross-sectional study	CKD-EPI	High
Khajehdehi et al.*, † [43]	2014	Iran	Age ≥18 years	9,404	35.9	-	-	-	Cross-sectional study	MDRD 186	Moderate
Khanam et al. *, † [44]	2016	Bangladesh	Age range of 18–80 years, type 2 diabetic patients	1,317	54.7	16.7	100.0	-	Cross-sectional study	eMDRD 175	Moderate
Kitiyakara et al.* [45]	2012	Thailand	All age groups	5,526	75	36.3	11.6	-	Cross-sectional study	CKD-EPI	Moderate
Kitiyakara et al. *, † [46]	2020	Thailand	Age range of 35-54 years	3,334	76.6	19.3	6.6	-	Cross-sectional study	CKD-EPI	High
Le et al.*, † [47]	2020	Vietnam	Age <80 years, type 2 diabetes patients	467	37.3	85.9	100.0	-	Cohort study	CKD-EPI	Moderate
Li et al.*, † [48]	2014	China	, having metabolic syndrome	1,724	37.3	-	-	-	Cross-sectional study	eMDRD 175	High
Li et al. * [49]	2021	China	Age ≥18 years	47,204	42.7	35.2	7.4	-	Cross-sectional study	eMDRD 175	High

Author	Year	Country	Targeted-population	Number of participants	Male (%)	HT (%)	DM (%)	Medication use (%)	Study design	eGFR equation	Newcastle-Ottawa Scale
Liang et al. *, † [50]	2021	China	Age >18 years	47,086	42.6	34.1	23.3	Nephrotoxic medications, 3.2%	Cross-sectional study	N/A	Moderate
Lin et al. *, † [51]	2017	China	Age ≥ 40 years	250,752	34.6	45.7	21.2		Cohort study	CKD-EPI	High
Liu et al. *, † [52]	2013	China	Acute coronary syndrome, with undiagnosed diabetes or pre-diabetes	2,232	66.4	19.2	11.0	Nephrotoxic medications 2.8	Cross-sectional study	eMDRD 175	High
Liu et al. *, † [53]	2020	China	Age range of 37–84 years	1,434	40.7	-	-	-	Cohort study	CKD-EPI	Moderate
Liu et al. *, † [54]	2013	China	Age range of 20-75 years with periodontal disease	1,268	33.3	90.6	-	-	Cross-sectional study	eMDRD 175	High
Liu et al. *, † [55]	2016	China	Age range of 18 - 80 years	26,655	58.5	15.7	2.9	-	Cross-sectional study	eMDRD 175	Moderate
Lu et al.* [56]	2016	China	Age ≥40 years	239,832	N/A	-	-	-	Cross-sectional study	CKD-EPI	Moderate
Luk et al.* [57]	2015	China, India, Philippines, and Vietnam	Age ≥18 years with type 2 Diabetes mellitus	China:3,415, India: 3,714, Philippines: 3,364, Vietnam: 692	N/A	88.0	100.0	-	Cross-sectional study	MDRD 186	Moderate
Lv et al. *, † [58]	2020	China	Age >45 years	6,267	44.5	45.3	15.9	-	Cross-sectional study	CKD-EPI	High
Mahapatra et al.* [59]	2016	India	Age ≥18 years	1,104	61.4	23.6	11.2	-	Cross-sectional study	MDRD 186	Moderate
Mahdavi-Mazdeh et al. *, † [60]	2010	Iran	Age range of 18–86 years, taxi driver	31,999	98.4	-	-	-	Cross-sectional study	MDRD 186	Moderate
Mohanty et al.* [61]	2020	India	Age range of 20–60 years	2,978	37.3	11.7	5.7	-	Cross-sectional study	MDRD 186	High
Naghibi et al. *, † [62]	2015	Iran	Age range of 20–60 years	1,285	41	22.0	10.5	-	Cross-sectional study	MDRD 186	Moderate
Najafi et al. *, † [63]	2010	Iran	Age ≥18 years	3,591	39	90.3	49.7	-	Cross-sectional study	MDRD 186	Moderate
Nampoothiri et al.* [64]	2019	India	Hepatic steatosis patients	100	56	26.0	20.0	-	Cross-sectional study	CG	High
Nand et al.* [65]	2015	India	Age ≥20 years, having any metabolic syndrome	300	49.7	-	-	-	Cross-sectional study	MDRD 186	Moderate
Naseem et al.* [66]	2017	Pakistan	Age >18 years with essential hypertension	772	60	100.0	55.7	-	Cross-sectional study	N/A	Moderate
Ong-ajyooth et al. *, † [67]	2009	Thailand	Age ≥15 years	3,117	49.1	22.5	7.0	-	Cross-sectional study	MDRD 186	High
Pan et al. *, † [68]	2014	China	Age ≥18 years	47,204	42.7	14.7	3.4	-	Cross-sectional study	eMDRD 175	High
Pan et al. *, † [69]	2015	China	Age >18 years	7,588	47	35.4	7.4	NSAIDs 3.6	Cross-sectional study	CKD-EPI	High
Perkovic et al.* [70]	2007	Thailand	Age ≥35 years	5,146	48.7	21.2	9.7	-	Cross-sectional study	MDRD 186	Moderate
Pongpirul et al. *, † [71]	2017	Thailand	Age >18 years, HIV patients	5,552	N/A	16.6	4.0	-	Cohort study	CKD-EPI	Moderate
Prodjosudjadi et al. *, † [72]	2009	Indonesia	Age range of 18 - 70 years	9,412	35.9	15	3.5	-	Cross-sectional study	eMDRD 175	Moderate

Author	Year	Country	Targeted-population	Number of participants	Male (%)	HT (%)	DM (%)	Medication use (%)	Study design	eGFR equation	Newcastle-Ottawa Scale
Qiu et al. *, † [73]	2019	China	Age ≥18 years	33,300	40.8	31.8	7.7	-	Cross-sectional study	CKD-EPI	High
Rahim et al. *, † [74]	2017	Bangladesh	Type 2 Diabetes mellitus patients	400	42.2	57.2	100.0		Cross-sectional study	CKD-EPI	Moderate
Rai et al.* [75]	2019	India	Overweight and obese general population	103	68	32.4	21.4	-	Cross-sectional study	eMDRD 175	High
Rai et al.* [76]	2019	India	Age ≥45 years	198	62.6	22.2	13.6	-	Cross-sectional study	eMDRD 175	Moderate
Rajput et al. * [77]	2017	India	Age >18 years	3,000	54.0	53.8	100.0		Cross-sectional study	eMDRD 175	Moderate
Ruwanpathirana et al. *, † [78]	2019	Sri Lanka	Age ≥18 years	4,803	31.8	-	-	-	Cross-sectional study	CKD-EPI	High
Saber et al. *, † [79]	2017	Iran	Age range of 15-75 years	988	42	20.0	14.0	-	Cross-sectional study	MDRD 186	Moderate
Sahin et al. *, † [80]	2009	Turkey	Age ≥18 years	1,079	49.4	38.1	5.3	-	Cross-sectional study	eMDRD 175	Moderate
Satirapoj et al. *, † [81]	2013	Thailand	Age range of 15 - 60 years	15,357	80.4	6.8	2.6	-	Cross-sectional study	eMDRD 175	Moderate
Sepanlou et al. *, † [82]	2017	Iran	Age range of 40-75 years	11,409	47.4	43.7	15.6	-	Cohort study	MDRD 186	Moderate
Shan et al. *, † [83]	2010	China	Age >40 years	3,981	54.7	15.0	5.8	-	Cross-sectional study	MDRD 186	High
Sharma et al. * [84]	2010	China, Mongolia and Nepal	China; age range of 15 - 75 years, Mongolia; age >18 years and Nepal; age ≥20 years	China; 1,999, Mongolia; 997 and Nepal; 8,398	China; 27, Mongolia ; 26 and Nepal; 38	China; 4.6, Mongolia; 10.0 and Nepal; 3.3	China; 27.0, and Nepal; 21.0		Cross-sectional study	eMDRD 175	Moderate
Sharma et al.* [85]	2013	Nepal	Age ≥20 years	1,000	-	38.6	7.5	-	Cross-sectional study	MDRD 186	Moderate
Shen et al. *, † [86]	2019	China	Age ≥18 years	1,627	37	-	-	-	Cross-sectional study	eMDRD 175	High
Shi et al. * [87]	2019	China	Age >18 years	8,429	47.2	25.8	10.2	-	Cohort study	CKD-EPI	High
Shi et al. *, † [88]	2020	China	Age ≥35 years	11,694	46.3	50.1	10.4		Cross-sectional study	CKD-EPI	Moderate
Singh et al. *, † [89]	2009	India	Age ≥20 years	5,252	60	43.1	18.8	-	Cross-sectional study	MDRD 186	High
Singh et al. *, † [90]	2013	India	Age >18 years	5,588	55.1	37.3	10.4	NSAIDs 9.3	Cross-sectional study	eMDRD 175	Moderate
Song et al.* [91]	2019	China	Age ≥40 years	3,279	37.3	60.6	-	-	Cross-sectional study	CKD-EPI	High
Sun et al. *, † [92]	2017	China	Age range of 21–94 years with type 2 Diabetes mellitus	1,401	57.2	74.2	100.0	-	Cross-sectional study	CKD-EPI	High
Tatapudi et al. *, † [93]	2019	India	Age >18 years	2,210	44.3	16.7	7.2		Cross-sectional study	N/A	High
Trivedi et al.* [94]	2016	India	Age ≥18 years	2,350	38.8	26.8	9.8	-	Cross-sectional study	MDRD 186	Moderate
Varma et al.* [95]	2010	India	Age ≥18 years	2,595	66	13.2	1.5	-	Cross-sectional study	CKD-EPI	Moderate
Varma et al.* [96]	2010	India	Age >20 years, all healthy adults	1,920	N/A	8.5	1.1	-	Cross-sectional study	MDRD 186	Moderate
Wang et al. *, † [97]	2015	China	Age ≥45 years	8,659	47.6	63.8	26.4	-	Cross-sectional study	CKD-EPI	High

Author	Year	Country	Targeted-population	Number of participants	Male (%)	HT (%)	DM (%)	Medication use (%)	Study design	eGFR equation	Newcastle-Ottawa Scale
Wang et al. *, † [98]	2015	China	Age range of 40-60 years	2,379	51.9	22.1	2.8	-	Cohort study	CKD-EPI	High
Wang et al. *, † [99]	2018	China	Age >20 years	46,949	50	30.4	5.0	-	Cross-sectional study	CKD-EPI	High
Wen et al. *, † [100]	2017	China	Age >18 years	48,054	57.9	8.9	2.2	-	Cross-sectional study	CKD-EPI	Moderate
Xu et al. *, † [101]	2020	China	Age range of 45-59 years	2,004	50.0	14.3	10.6	-	Cross-sectional study	CKD-EPI	High
Yang et al.* [102]	2015	China	Age ≥ 40 years with obese	1,115	31.3	-	-	-	Cross-sectional study	eMDRD 175	High
Yang et al.* † [103]	2019	China	Age range of 27-95 years	4,221	40.6	-	-	-	Cross-sectional study	CKD-EPI	High
Yang et al.* † [104]	2019	China	Age range of 60-92 years	4,242	63.6	-	-	-	Cross-sectional study	CKD-EPI	High
Yang et al. *, † [105]	2021	China	Age range of 20-74 years	36,077	40.5	57.4	14.1	-	Cross-sectional study	eMDRD 175	High
Yuzbashian et al.* [106]	2016	Iran	Age >27 years	2,382	46	26.0	6.3	-	Cross-sectional study	MDRD 186	High
Zaman et al.* † [107]	2018	Thailand	Age ≥18 years, type 2 diabetes patients	3,748	35.3	55.2	100.0	-	Cross-sectional study	eMDRD 175	High
Zhang et al.* † [108]	2019	China	Age range of 18-79 years, type 2 diabetes patients	1,025	74	47.4	100.0	-	Cross-sectional study	MDRD 186	High
Zhang et al.* † [109]	2020	China	Age >18 years	11,280	58.4	26.0	-	-	Cohort study	eMDRD 175	Moderate
Zhang et al.* † [110]	2020	China	Age >18 years, diabetes patients	361	63.7	58.7	100.0	-	Cross-sectional study	CKD-EPI	High

* Studies included in pooled estimation of CKD prevalence in LMICs in Asia

† Studies included in pooled estimation of CKD associated risk factors in LMICs in Asia

Table S4. Newcastle-Ottawa quality assessment scale (NOS) of included studies in the Systematic Review: A cross-sectional studies.

Author, Year	Selection				Comparability	Outcome		Total Score	Quality assessment level
	1. Representativeness of the sample	2.Sample size	3.Non-respondents	4.Ascertainment of the exposure (risk factor)	1.Comparability of subjects in different outcome groups on the basis of design or analysis. Confounding factors controlled.	1.Assessment of outcome	2.Statistical test		
Aekplakorn et al., 2021 [1]	*		*	*	**	**	*	8	High
Alam et al., 2014 [2]	*		*	*	**	**	*	8	High
Anand et al., 2014 [3]	*		*	*	**	**		7	High
Anand et al., 2017 [4]	*		*	**	**	**	*	9	High
Anupama et al., 2014 [5]	*			*	**	**	*	7	High
Anupama et al., 2017 [6]		*		*	**	**	*	7	High
Bahadoran et al., 2016 [7]			*	*	**	**	*	7	High
Bragg-Gresham et al., 2020 [8]	*		*	**	**	**	*	9	High
Cao et al., 2013 [9]			*	**	**	**	*	8	High
Chen et al., 2008 [10]	*		*	*	**	**	*	8	High
Chen et al., 2011 [11]	*		*	*	**	**	*	8	High
Das et al., 2019 [12]				**	**	**	*	7	High
Dhimal et al., 2019 [13]	*	*	*	*		**		6	Moderate
Du et al., 2017 [16]			*	*		**	*	5	Moderate
Duan et al.,2019 [17]	*		*	*	**	**	*	8	High
Fan et al., 2013 [18]	*		*	**	**	**	*	9	High
Farag et al., 2020 [19]	*			**	**	**	*	8	High
Farhadnejad et al., 2019 [20]	*			*	**	**	*	7	High
Fatema et al., 2013 [21]				*	**	**	*	6	Moderate
Feng et al., 2019 [22]	*			*	**	**	*	7	High
Gallieni et al., 2013 [23]				**	**	**	*	7	High
Guo et al., 2017 [24]			*	**		**	*	6	Moderate
Han et al., 2019 [25]	*			*		**	*	5	Moderate
Hasan et al., 2012 [26]		*		*		**		4	Moderate
He et al., 2015 [27]			*	*	**	**	*	7	High
Herath et al., 2019 [28]				*	**	**		5	Moderate

Author, Year	Selection				Comparability 1.Comparability of subjects in different outcome groups on the basis of design or analysis. Confounding factors controlled.	Outcome		Total Score	Quality assessment level
	1. Representativeness of the sample	2.Sample size	3.Non-respondents	4.Ascertainment of the exposure (risk factor)		1.Assessment of outcome	2.Statistical test		
Hong et al., 2015 [29]	*		*	*	**	**	*	8	High
Hooi et al., 2013 [30]	*		*	*		**	*	6	Moderate
Hosseinpanah et al., 2009 [31]	*		*	**	**	**	*	9	High
Huda et al., 2012 [32]	*			*		**	*	5	Moderate
Hussain et al., 2019 [33]	*		*	*	**	**	*	8	High
Imran et al., 2015 [34]				*		**	*	4	Moderate
Ingsathit et al., 2009 [35]	*	*		*	**	**	*	8	High
Ito et al., 2008 [36]			*	**	**	**	*	8	High
Jafar et al., 2005 [37]	*		*	*	**	**	*	8	High
Jessani et al.,2014 [38]	*	*	*	**	**	**	*	10	High
Ji et al., 2017 [39]			*	*	**	**	*	7	High
Ji et al., 2019 [40]	*		*	*	**	**	*	8	High
Jiang et al., 2011 [41]	*		*	**	**	**	*	9	High
Kaewput et al., 2019 [42]	*			*	**	**	*	7	High
Khajehdehi et al., 2014 [43]	*	*		*		**	*	6	Moderate
Khanam et al., 2016 [44]				**		**	*	5	Moderate
Kitiyakara et al., 2012 [45]				*		**	*	4	Moderate
Kitiyakara et al., 2020 [46]			*	*	**	**	*	7	High
Li et al., 2014 [48]	*		*	*	**	**	*	8	High
Li et al., 2021 [49]	*		*	*	**	**	*	8	High
Liang et al., 2021 [50]	*				**		*	4	Moderate
Liu et al., 2013 [52]			*	*	**	**	*	7	High
Liu et al., 2013 [54]			*	**	**	**	*	8	High
Liu et al., 2016 [55]				*	**	**	*	6	Moderate
Lu et al., 2016 [56]			*	*	**	*	*	6	Moderate
Luk et al., 2015 [57]				*		**	*	4	Moderate
Lv et al., 2020 [58]	*			*	**	**	*	7	High
Mahapatra et al., 2016 [59]				*		**	*	4	Moderate

Author, Year	Selection				Comparability	Outcome		Total Score	Quality assessment level
	1. Representativeness of the sample	2.Sample size	3.Non-respondents	4.Ascertainment of the exposure (risk factor)	1.Comparability of subjects in different outcome groups on the basis of design or analysis. Confounding factors controlled.	1.Assessment of outcome	2.Statistical test		
Mahdavi-Mazdeh et al., 2010 [60]				*	**	**	*	6	Moderate
Mohanty et al., 2020 [61]	*	*		**		**	*	7	High
Naghibi et al., 2015 [62]	*			**		**		5	Moderate
Najafi et al., 2010 [63]				*	**	**	*	6	Moderate
Nampoothiri et al., 2019 [64]	*			*	**	**	*	7	High
Nand et al., 2015 [58]				**		**	*	5	Moderate
Naseem et al., 2017 [66]			*	*		*	*	4	Moderate
Ong-ajyooth et al., 2009 [67]	*		*	*	**	**	*	8	High
Pan et al., 2014 [68]	*			*	**	**	*	7	High
Pan et al., 2015 [69]	*		*	*	**	**	*	8	High
Perkovic et al., 2007 [70]	*		*	*		**	*	6	Moderate
Prodjosudjadi et al., 2009 [72]				*	**	**		5	Moderate
Qiu et al., 2019 [73]	*			*	**	**	*	7	High
Rahim et al., 2017 [74]				**		**		4	Moderate
Rai et al., 2019 [75]		*		**	**	**	*	8	High
Rai et al., 2019 [76]				*	**	**	*	6	Moderate
Rajput et al., 2017 [77]				**		**		4	Moderate
Ruwanpathirana et al., 2019 [78]	*		*	*	**	**	*	8	High
Saber et al., 2017 [79]	*	*		*		**		5	Moderate
Sahin et al., 2009 [80]	*	*		**		**		6	Moderate
Satirapoj et al., 2013 [81]				*	**	**	*	6	Moderate
Shan et al., 2009 [83]	*		*	*	**	**	*	8	High
Sharma et al., 2010 [84]				**		**		4	Moderate
Sharma et al., 2013 [85]			*	*		**	*	5	Moderate
Shen et al., 2019 [86]	*	*	*	*		**	*	7	High
Shi et al., 2020 [88]				*	**	**	*	6	Moderate
Singh et al., 2009 [89]	*		*	*	**	**	*	8	High
Singh et al., 2013 [90]				*		**	*	4	Moderate

Author, Year	Selection				Comparability	Outcome		Total Score	Quality assessment level
	1. Representativeness of the sample	2. Sample size	3. Non-respondents	4. Ascertainment of the exposure (risk factor)	1. Comparability of subjects in different outcome groups on the basis of design or analysis. Confounding factors controlled.	1. Assessment of outcome	2. Statistical test		
Song et al., 2019 [91]	*			*	**	**	*	7	High
Sun et al., 2017 [92]				**	**	**	*	7	High
Tatapudi et al., 2019 [93]	*	*	*	*	**	**	*	9	High
Trivedi et al., 2016 [94]				*		**	*	4	Moderate
Varma et al., 2010 [95]				*		**	*	4	Moderate
Varma et al., 2010 [96]				*		**	*	4	Moderate
Wang et al., 2015 [97]	*		*	**	**	**	*	9	High
Wang et al., 2018 [99]	*	*	*	*	**	**	*	9	High
Wen et al., 2017 [100]				*	**	**	*	6	Moderate
Xu et al., 2020 [101]	*		*	*	**	**	*	8	High
Yang et al., 2015 [102]	*			**	**	**	*	8	High
Yang et al., 2019 [103]	*			*	**	**	*	7	High
Yang et al., 2019 [104]	*			*	**	**	*	7	High
Yang et al., 2021 [105]	*			*	**	**	*	7	High
Yuzbashian et al., 2015 [106]	*			*	**	**	*	7	High
Zaman et al., 2018 [107]	*			**	**	**	*	8	High
Zhang et al., 2019 [108]	*			**	**	**	*	8	High
Zhang et al., 2020 [110]	*			**	**	**	*	8	High

Study quality Scoring: High = 7-10 points, Moderate= 4-6 points, and Poor = 0-3 points

Table S5. Newcastle-Ottawa quality assessment scale (NOS) of included studies in the Systematic Review: A cohort studies

Author, Year	Selection				Comparability	Outcome			Total Score	Quality assessment level
	1. Representative -ness of the exposed cohort	2. Selection of the non-exposed cohort	3. Ascertainment of exposure	4. Demonstration that outcome of interest was not present at start of study	1. Comparability of cohorts on the basis of the design or analysis	1. Assessment of outcome	2. Was follow-up long enough for outcomes to occur?	3. Adequacy of follow up of cohorts		
Ding et al., 2012 [14]			*	*		*	*	*	5	Moderate
Domrongkitchaiporn et al, 2004 [15]			*	*	*	*	*	*	6	Moderate
Le et al., 2020 [47]	*	*	*			*	*		5	Moderate
Lin et al., 2017 [51]	*	*	*	*	**	*	*	*	9	High
Liu et al., 2020 [53]		*	*	*	*		*	*	6	Moderate
Pongpirul et al., 2017 [71]			*	*	*	*	*		5	Moderate
Sepanlou et al., 2017 [82]	*	*			**	*	*		5	Moderate
Shi et al., 2019 [87]	*	*	*		**		*	*	7	High
Wang et al., 2015 [98]	*	*	*	*	*	*	*	*	8	High
Zhang et al., 2020 [109]			*	*	*	*		*	5	Moderate

Study quality Scoring: High = 7-9 points, Moderate= 4-6 points, and Poor = 0-3 points

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