H.1 Excluded clinical studies

Table 41: Studies excluded from the clinical review

Reference	Reason for exclusion
Abd el Kader 20101	Case control study
Abumuamar 20182	This study aimed to determine the prevalence and clinical predictors of OSA in patients with atrial fibrillation. No relevant comparison group.
Adderley, 20203	Inappropriate comparison – both groups with type 2 diabetes
Agha, 20194	Inappropriate comparison- Type 2 diabetes and OSA versus Type 2 diabetes but without OSA.
Ajayi 20195	Full text paper not available
Akintunde 20126	The study aims to describe the prevalence of snoring and OSA among hypertensive subjects in South Western, Nigeria. No relevant comparison group.
Al-Abri 20157	The aim of the study was to estimate the frequency of OSAS among patients with epilepsy and to study the seizure characteristics among those patients with co-morbid OSAS. . No relevant comparison group.
Albuquerque 20129	Study aimed to assess the relationship between EDS and SDB in patients with atrial fibrillation. No relevant comparison group. .
Al-Jahdali 20118	Inappropriate study design- cross-sectional study
Altaf 201710	The study aimed to determine the interrelationships of OSA and sight-threatening diabetic retinopathy in subjects with T2D and to assess whether OSA is associated with diabetic retinopathy progression. No relevant comparison group.
Anderson 201211	Study evaluated the prevalence of sleep disordered breathing in a community cohort with chronic mental illness on long-term psychotropic medication. No relevant comparison.
Andreas 199612	Sleep apnoea in patients with coronary artery disease. No comparison.
Annakkaya 201213	Full text paper not available
Antony 201414	No relevant risk factor. Study aimed to ascertain the validity of two screening scales for obstructive sleep apnoea (OSA) in pregnancy and to establish the prevalence of OSA in pregnancy.
Areias 201216	Paper not in English
Arnulf 200217	SDB in Parkinson disease. No appropriate comparison.
Aronson 201418	Prevalence of SDB in patients with acute myocardial infarction. No relevant comparison.
Arzt 200620	Not matched control group. No multivariate analysis.
Arzt 201619	study investigated the prevalence of sleep-disordered breathing (SDB) and its predictors in patients with stable chronic heart failure (HF). No relevant comparison.
Asker 201521	Sleep apnoea in heart failure- no comparison.
Barreto 202023	No control group

Reference	Reason for exclusion
Bassetti 199624	No multivariate analysis or matched controls.
Bassetti 199725	SDB in patients with acute supra and infra tentorial strokes. No appropriate comparison.
Beland 201526	Sleep apnoea in Parkinson's disease. No relevant comparison.
Bianchi 201427	Goals of the study were to evaluate the prevalence of sleep apnoea in a large cohort of patients with myotonic dystrophy. No relevant comparison.
Bitter 200928	Study investigated the prevalence and type of SDB in patients with heart failure with normal left ventricular ejection fraction (HFNEF). No relevant comparison.
Bitter 201229	Aim of the study was to investigate whether assessment of specific symptoms can elucidate presence of SDB in CHF patients. No relevant comparison group.
Blackwell 201530	No relevant risk factor. To assess if SDB is associated with cognitive decline.
Blagojevic-Bucknall 201931	Gout – risk factor not in the protocol.
Bodez 201632	Study assessed prevalence, severity, and prognostic value of sleep-disordered breathing (SDB) in cardiac amyloidosis (CA). No relevant comparison group.
Boentert 201833	Study aimed to investigate the prevalence of different subtypes of SDB among patients with amyotrophic lateral sclerosis undergoing sleep studies for the first time. No relevant comparison group.
Borel 201734	Study aimed to determine the prevalence of OHS in ambulatory obese patients not previously referred to a pulmonologist for suspicion of sleep breathing disorders. No relevant comparison group.
Borsini 201835	Sleep apnoea in patients with hypertension. No appropriate comparison.
Bosanquet 201136	Study estimated the prevalence of OSA among patients with VTE. No relevant comparison.
Bublitz 201837	To assess the prevalence of OSA in pregnant women with gestational diabetes mellitus. No relevant comparison.
Buchwald 199438	No appropriate comparison
Buse 201939	Inappropriate study design-study based on cross-sectional surveys
Cai 201340	Survey
Camilo 201641	SDB in acute ischemic stroke patients. No appropriate comparison.
Carmelli 200042	Study examined the association between changes in obesity from midlife to late adulthood and overnight recording of respiration during sleep. No relevant comparison.
Ceide 201543	Study assessed associations of depression and anxiety with risk of OSA among Non-Hispanic Blacks. No relevant comparison.
Chan 201044	The objectives of the study were to determine the prevalence and severity of OSA and its clinical presentation in patients with TIA and minor stroke. No relevant comparison.
Cheng 201846	Study evaluated the prevalence of OSA in patients with PE. No relevant comparison.

Reference	Reason for exclusion
Cherkassky 200347	Prevalence of sleep apnoea in stroke patients. No appropriate comparison.
Cochen de Cock 201048	No useful outcomes. Study did not directly compare prevalence of OSA in people with Parkinson's disease to sex age matched controls. Study compared prevalence with healthy controls in Japan (not matched)
Colao 201849	Conference abstract
Costantino 202051	No relevant intervention. systematic review and meta-analysis for studies evaluating hypoglossal nerve stimulation
Corra 200650	The aim of the present study to determine the relationship between exertional oscillatory ventilation and central sleep apnoea in stable CHF patients. No relevant comparison.
Desalu 201752	Survey
Dominguez 201853	Prevalence obstructive sleep apnoea in pregnant women with extreme Obesity. No relevant comparison.
Dong 202054	Systematic review- screened for relevant references.
Donnellan 202055	No useable outcomes.
Donovan 201956	No relevant comparison.
Drager 200957	OSA in patients with metabolic syndrome. No relevant comparison.
Dyken 199658	OSA IN stroke. Control group not matched. No multivariate analysis.
El-Aatty 201559	Case control study
Elkholy 201260	Inappropriate study design- case-control study
Ezzat 201561	Control group not matched for key confounders. No multivariate analysis.
Facco 201062	Prevalence of sleep disturbances in pregnancy. No relevant comparison.
Fan 201963	Study conducted analysis to delineate the association of OSA with subsequent cardiovascular events after ACS onset. No relevant comparison.
Fehr 201864	OSA in post-traumatic disorder. No appropriate comparison.
Ferguson 199665	People with amyotropic lateral sclerosis- not relevant risk factor in protocol
Ferreira 201066	Study aimed to determine the prevalence of SA in HF and to identify potential risk factors for SA in HF population. No relevant comparison.
Fisse 201767	The aim of the study was to investigate whether the diagnosis of SRBD in patients with acute ischemic stroke is associated with specific lesion locations. No relevant comparison. No relevant risk factor assessed.
Fisser 201768	SDB in patients with STEMI. No relevant comparison group.
Foley 199970	No appropriate comparison. Associations of symptoms of sleep apnoea with cardiovascular disease.
Franzen 201571	Prevalence of SDB in Fabry disease. Not relevant risk factor
Friedman 201172	Inappropriate comparison. Sleep parameters between patients with mild and moderate/severe sleep apnoea.
Gabryelska 201873	Prevalence of OSA IN Rapid eye movement behaviour disorder (RBD). No relevant comparison group.
Gami 200775	This study sought to identify whether obesity and obstructive

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	sleep apnoea (OSA) independently predict incident atrial fibrillation/flutter (AF).
Geib 201576	SDB in patients with CHF. No appropriate comparison.
Geovanini 201677	Study investigated the association between obstructive sleep apnoea (OSA) severity with markers of overnight myocardial injury in patients with refractory angina. No relevant comparison.
Gille 201778	Study aimed to determine the prevalence and determinants of obstructive sleep apnoea (OSA) in patients with newly diagnosed idiopathic pulmonary fibrosis (IPF). No relevant comparison.
Glantz 201379	Study aimed to address the occurrence and predictors of OSA among revascularised patients with CAD. No relevant comparison. Cross-sectional report.
Godoroja 201680	Study investigated the extent to which anthropometric measurements can be used to identify the presence of significant OSA (Apnoea/Hypopnoea Index (AHI) > 20) in adult patients. No relevant risk factor assessed.
Grigg-Damberger 201481	Literature review
Guilleminault 200282	SDB in post-menopausal women. No appropriate comparison.
Gunduz 201883	No relevant comparison. Study evaluated the prevalence of OS in mild hypoxemic COPD patients without OSA symptoms and compared characteristics of OS and COPD patients.
Guo 201884	Sleep apnoea in patients with untreated acromegaly. No relevant comparison.
Gupta 201685	Survey
Guven 201486	Aim of the study was to evaluate the presence of OSA in patients with difficult-to-treat asthma (DTA). No relevant comparison.
Haarmann 201987	Inappropriate population. People with diagnosed OSA
Harada 201890	Sleep apnoea in patients with coronary heart disease. No appropriate comparison.
Harada 201989	No control group
Harbison 200291	To determine the prevalence and course of sleep-disordered breathing in acute stroke inpatients. No comparison.
Hayano 201292	Not adjusted for key confounders. No multivariate analysis
Hein 201797	The aim of the study was to examine the prevalence and risk factors of moderate to severe obstructive sleep apnoea syndrome in a large sample of insomnia sufferers. No comparison.
Heck 201793	Cross-sectional study
Heffner 201294	No comparison group
Hein 201796	Same as Hein 2017 (above)
Hein 201995	Excessive day time sleepiness in major depression. No appropriate comparison.
Hernandez Voth 201798	OSAHS in patients with severe chronic respiratory insufficiency. No appropriate comparison.
Herrscher 201199	Sleep apnoea in heart failure outpatients. No appropriate comparison.

Reference	Reason for exclusion
Hobzova 2018100	Occurrence of sleep apnoea in patients with nocturnal hypertension. No relevant comparison.
Holcomb 2016101	Study aimed to prospectively examine the incidence and risk factors for sleep apnoea in consecutive brain injury rehabilitation admissions. No relevant comparison.
Holmqvist 2015102	No appropriate comparison. OSA vs No OSA
Hoyer 2010103	Case control study
Huang 2017105	Systematic review screened for relevant references
Hui 2017106	Study aimed to identifies the risk factors for OSA in CRS to determine who should be screened for OSA among patients with chronic rhinosinusitis. No relevant comparison.
Ifergane 2016107	Study evaluated clinical characteristics and laboratory markers of inflammation and coagulability associated with OSA severity during the acute post stroke period. No relevant comparison.
Jaimchariyatam 2019108	OSA as a risk factor for preeclampsia-eclampsia. No appropriate comparison.
Jasti 2018109	Sleep disorders in patients with Parkinsonism. No relevant comparison.
Javaheri 1995112	Study aimed to determine the prevalence and effect of sleep-disordered breathing in ambulatory patients with stable, optimally treated congestive heart failure. No relevant comparison.
Javaheri 1998111	Sleep apnoea in patients with stable heart failure. No appropriate comparison.
Javaheri 2006110	Prevalence of sleep apnoea in heart failure. No relevant comparison.
Kaneko 2003115	The study hypothesised that in patients with stroke undergoing rehabilitation, the presence of SA will be associated with a greater degree of functional impairment and a consequent longer hospitalisation than in patients with stroke but without SA. Not relevant comparison (Patients with SA vs Patients with no SA)
Kashine 2012116	Study investigated the prevalence of SDB patients with acromegaly. Not relevant comparison
Katzan 2019117	Full text paper not available.
Kezban 2012118	Inappropriate study design- cross-sectional study
Khan 2015119	Case control study
Kiyokuni 2018120	Study investigated the hypothesis that SDB is related to renal dysfunction in patients with ACS who undergo PCI. Not relevant comparison
Kunisaki 2015122	HIV patients. Not relevant risk factor.
Kosovali 2013121	Inappropriate comparison- patients with pulmonary embolism vs people with OSA.
Kwon 2015123	Study aimed to examine the cross-sectional association of SDB metrics and sleep quality with AF. No relevant comparison.
Lam 2010124	OSA in type 2 diabetes. No appropriate comparison.
Leao 2016125	Study aimed to determine the prevalence of OSA in patients with ACS and evaluate prognostic impact of OSA and continuous positive airway pressure (CPAP) therapy in these patients. No relevant comparison group.

Reference	Reason for exclusion
Lecomte 2013126	Data from a survey
Lee 2011127	Study aimed to determine the effect of severe obstructive sleep apnoea (OSA) on long-term outcomes after myocardial infarction. No relevant comparison
Lee 2019128	No appropriate risk factor. Risk of hypertension in snorers.
Lee 2019129	Full text paper not available
Leonavicius 2014130	The aim of the study was to evaluate the prevalence of sleep disturbances in a Lithuanian community sample of individuals with the relapsing remitting multiple sclerosis (RRMS). No relevant comparison group.
Leong 2014131	Cross-sectional study
Leroyer 1995132	Sleep apnoea in coronary heart disease. No appropriate comparison group.
Lin 2015133	Longitudinal cohort study. No comparison.
Lindenauer 2014134	Study compared the characteristics, treatments, and outcomes of patients with pneumonia who did or did not have OSA. No relevant comparison (patients with OSA vs patients without OSA)
Linhart 2015135	The aim of the study was to investigate the frequency of SDB in patients with severe aortic stenosis. No relevant comparison group.
Lisi 2015136	Study assessed impact of OSA on LV abnormalities in untreated uncomplicated essential hypertensive patients. No relevant comparison group.
Liu 2013137	The study's aim was to utilise questionnaires that assess OSA risk and symptoms to test the hypothesis that the most insulin-resistant subset of obese individuals is at highest risk for OSA. No relevant comparison (insulin resistant vs insulin sensitive obese patients)
Liu 2017138	People already diagnosed with sleep apnoea
Lofaso 2000139	Nasal resistance in unselected consecutive snorers referred for suspected sleep disorders was measured. No relevant comparison.
Lombardi 2018140	OSA in heart failure. No relevant comparison.
Loo 2020141	No control group
Lopes Neto 2013142	Inappropriate study design- cross-sectional study. To evaluate the frequency of obstructive sleep apnoea (OSA) in obese patients scheduled for bariatric surgery. No relevant comparison.
Lopez 2008143	Study reported prevalence of OSA in morbidly obese patients presenting for weight loss surgery. No relevant comparison.
Ludka 2014144	Study investigated the prevalence of SA and examined the day-night variation of onset of MI in acute MI patients. No relevant comparison. Retrospective study.
Macdonald 2008145	Study aimed to determine the current prevalence of sleep disordered breathing in a congestive heart failure clinic. No relevant comparison.
Mahdavinia 2017146	Systematic review. Screened for relevant references.
Marti-Almor 2020149	No control group
Manni 2003147	The aim of the study was to evaluate the rate and features of obstructive sleep apnoea (OSA) in adult epilepsy patients. No relevant comparison.

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Manu 1994148	Sleep apnoea in chronic fatigue. No appropriate comparison.
Mason 2012151	No information on matched controls- not clear if adjusted for key confounders. Prevalence for SDB only reported for patients with macular oedema not for control group.
Mason 2011150	To determine the prevalence of obstructive sleep apnoea (OSA) in patients with Abdominal aortic aneurysms. No relevant comparison.
McCarter 2018152	OSA in refractory epilepsy. No relevant comparison.
Meireles, 2020155	Inappropriate comparison- acute heart failure vs chronic heart failure.
Medeiros 2013153	Cross-sectional study
Mehra 2006154	SDB in acute coronary syndrome patients. No relevant comparison.
Mestron 2004156	Spanish acromegaly registry. No multivariate analysis
Min 2015157	Study aimed to determine the clinical, laboratory, and polysomnographic features of resistant HTN that are significantly associated with OSA. No relevant comparison (controlled hypertension vs and resistant hypertension groups.
Miyazaki 2015158	Control not matched for key confounders. No multivariate analysis
Mokhlesi 2019160	Inappropriate study design- cross sectional study
Mohsenin 1995159	No relevant outcomes
Morantes-Caballero 2019161	No useable outcomes. Study aimed to determine the effects of air pollution on acute exacerbation of chronic obstructive pulmonary disease
Moreno-Lopez 2011162	Inappropriate comparison. Survey of EDS in consecutive patients with MSA and comparison with patients with Parkinson disease (PD)
Mubarik 2016163	OSA in bariatric surgery patients. No relevant comparison group.
Myles 2018164	Not relevant risk factor-schizophrenia
Nair 2019165	Sleep apnoea in acute ischaemic stroke. No appropriate comparison.
Nicholl 2012167	Sleep apnoea in CKD. No appropriate comparison.
Oldenburg 2007168	Evaluation of the prevalence and nature of sleep-disordered breathing (SDB) in patients with symptomatic chronic heart failure (CHF) receiving therapy. No relevant comparison group.
Ong 2009169	The aim of the study was to examine the frequency of OSA in people with major depressive disorder. No relevant comparison group.
Padeletti 2009170	SDB in acute heart failure decompensation. No relevant comparison group.
Pampati 2016171	Retrospective cohort study. Study aimed to assess the prevalence of symptomatic OSAS in chronic spinal pain patients receiving chronic opioid therapy and determine the association of OSAS with multiple risk factors and comorbidities. No relevant comparison group.
Papanas 2010172	Not relevant risk factor. The aim of the study was to examine the prevalence of metabolic syndrome (MS) and its

Reference	Reason for exclusion
	components among obstructive sleep apnoea (OSA) patients vs controls.
Parra 2000173	To investigate the prevalence and behaviour of sleep-related breathing disorders (SRBDs) associated with a first-ever stroke or transient ischemic attack (TIA). No relevant comparison
Paulino 2009174	Study assessed the prevalence of sleep-disordered breathing and its associated risk factors in French patients with heart failure. No relevant comparison
Pedrosa 2010175	OSA in mild atrial fibrillation. No relevant comparison
Peruvemba 2012176	Cross-sectional study
Petrossians 2017177	Survey of acromegaly patients. No relevant comparison
Pien 2014178	SDB in pregnancy. No relevant comparison
Rao 2008180	Study assessed the prevalence of and risk factors for sleep disturbances in the acute post-traumatic brain injury (TBI) period. No appropriate comparison.
Reading 2009181	Cross-sectional study
Rogers 2015183	Study investigated risk of OSA among blacks with metabolic syndrome. No relevant comparison
Rogers 2020184	Risk factor not in protocol-black people with metabolic syndrome
Romdhane 2018185	Not in English
Romero 2010186	Retrospective chart review.
Rose 2014187	No relevant risk factor. Sleep disordered breathing (SDB) in patients on opioids for chronic pain
Rosenow 1996188	Sleep apnoea in treated acromegaly. No appropriate comparison.
Sankari 2015189	The objectives of this study were to examine predictors of SDB diagnosis and to estimate rates of SDB treatment in Spinal cord injury or disorder patients. No relevant comparison
Sapina-Beltran190	No control group
Sawanyawisuth 2013191	Paper aimed study factors associated with OSA-induced hypertension in those patients with age more than 60 years. No relevant comparison.
Schipper 2016192	OSA in patients with transient ischaemic attack. No appropriate comparison.
Schreiber 2018193	Prevalence of sleep apnoea among COPD patients. No relevant comparison.
Schulz 2007194	Prevalence and type of SDB among CHF patients. No relevant comparison.
Schutt 2015195	Controls not matched/no multivariate analysis
Seetho 2015196	Study investigated whether OSA was associated with serum urate in severe obesity and whether continuous positive airway pressure (CPAP) treatment was associated with a fall in urate. No relevant comparison.
Seguro 2018197	Study aimed to confirm that severe OSAHS is less symptomatic in HT patients than normotensive patients using ESS. All patients with severe OSAHS at baseline. Not appropriate population.

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Sharma 2015198	The aim of this study was to conduct a clinical pathway evaluation (CPE) among obese patients admitted to a tertiary care hospital. No relevant comparison.
Sharma 2016199	Study aimed to prospectively examine the impact of sleep disorders on GH, preeclampsia, LBW, low Apgar score, and GDM in Indian pregnant women. No relevant comparison group.
Shen 2016200	Rheumatoid arthritis. Not relevant risk factor.
Sheu 2015202	Not appropriate risk factor and comparison. The goal of the study was to investigate the risk for Parkinson disease during a 5-y follow-up period after a diagnosis of OSA using a population based dataset.
Shibazaki 2013203	SDB in patients with atrial fibrillation. No appropriate comparison.
Shim 2011204	Cross-sectional study-inappropriate study design
Shimohata 2012205	Study aimed to ascertain the prevalence of EDS in Japanese multiple system atrophy patients by using the Epworth Sleepiness Scale (ESS). No relevant comparison group.
Shinoda 2019206	Cross-sectional study
Siarnik 2016207	Inappropriate comparison- aim of the study was to compare polysomnographic, clinical, and laboratory characteristics of wake-up (WUS) and non-wake-up acute ischemic strokes (NWUS).
Sjostrom 2002208	Case control study
Soler 2015209	SDB in patients with COPD. No appropriate comparison.
Soreca 2015210	No relevant comparison. Study assessed the feasibility of in-home screening for sleep apnoea in patients with bipolar disorder.
Stewart 2020213	Full text paper not available.
Steveling 2014211	Cross-sectional study. Study aimed to evaluate the prevalence and possible predictors of the COPD-OSAHS overlap syndrome and its association with comorbidities in a cohort of COPD patients. No comparison.
Stevenson 2008212	Matched case control study
Stoohs 1996214	SDB in hypertension. No appropriate comparison.
Stubbs 2016215	Systematic review. Screened for relevant references.
Szymanski 2015217	The aim of the study was to establish whether atrial fibrillation patients with coexisting OSA have higher stroke risk. No comparison.
Tahrani 2013218	Aim of this study was to assess the impact of OSA on the estimated glomerular filtration (eGFR) decline in patients with type 2 diabetes. No relevant comparison.
Tam, 2019219	No useable outcomes
Tami 1998220	OSA in patients who snore. No appropriate comparison.
Tateishi 1994221	SDB in patients with coronary artery disease. No appropriate comparison.
Tremel 1999223	The aim was to define the prevalence of sleep respiratory disturbance in patients after an episode of acute left ventricular failure and the subsequent change after heart failure therapy. No relevant comparison.
Tseng 2019225	No control group
Turcani 2015226	

Reference	Reason for exclusion
	Study aimed to determine the ratio of concurrence of OSA in patients hospitalized for COPD exacerbation. No relevant comparison.
Utriainen 2013227	Cross-sectional study
Van den Broecke 2014228	No appropriate risk factor and comparison. Study assessed the feasibility of SDB screening at the early phase of ACS.
Vazir 2007230	The aim of this study was to determine the prevalence and characteristics of SDB in male patients with NYHA class II symptoms of CHF. No relevant comparison.
Venkateswaran 2014231	Study aimed to determine the prevalence of COPD-OSAHS overlap syndrome and the predictors of OSA in patients with COPD. No relevant comparison.
Venturi 2011232	Cross-sectional study
Vgontzas 1994234	case series
Vgontzas 2000233	Control group not matched for key confounders. No multivariate analysis
Vorderwulbecke 2020235	Full text paper not available.
Wang 2019236	No useable outcomes
Webster 2001237	Sleep apnoea win patients with traumatic brain injury. No appropriate comparison group.
West 2006239	No relevant risk factors
Wei 2020238	Cross-sectional study
Wilson 2020241	Sleep disordered breathing not specifically OSA
Witassek 2019244	No control group
Wilson 2020240	Sleep disordered breathing not specifically OSA
Wilson 2018242	Cross-sectional study
Wilton 2018243	Rheumatoid arthritis. Not relevant risk factor.
Wongvilairat 2019246	Allergic rhinitis. Not relevant risk factor. No control group
Wolters 2020245	No control group. No useable outcomes.
Worsnop 1998247	Control group not matched. No multivariate analysis.
Wu 2020248	Cross-sectional study
Yeh 2010249	Study aimed at identifying practical clinical predictors of OSA for bariatric patients. No relevant comparison group.
Yoon 2020251	No control group
Yumino 2009252	To determine whether the influence of sleep apnoea (SA) on the risk of death differs in patients with ischaemic and in those with non-ischaemic heart failure (HF). No relevant comparison group.
Zeng 2013253	Systematic review- screened for relevant check references