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Supplementary Tables 1 Search strategy of Pubmed

No.	Content	Result
#1	Search: "Migraine Disorders"[Mesh] Sort by: Most Recent	34,175
#2	Search: (Migraine*[Title/Abstract]) OR (Migrainosus[Title/Abstract]) Sort by: Most Recent	47,149
#3	#1 OR #2	51,565
#4	Search: "Mortality"[Mesh] Sort by: Most Recent	442,233
#5	Search: Mortalit*[Title/Abstract] Sort by: Most Recent	1,141,516
#6	#4 OR #5: Search: ("Mortality"[Mesh]) OR (Mortalit*[Title/Abstract]) Sort by: Most Recent	1,405,934
#7	Search: "Risk"[Mesh] Sort by: Most Recent	1,481,026
#8	Search: risk*[Title/Abstract]	3,394,085
#9	#7 OR #8: Search: (risk*[Title/Abstract]) OR ("Risk"[Mesh]) Sort by: Most Recent	3,899,603
#10	#3 AND #6 AND #9 Search: (((risk*[Title/Abstract]) OR ("Risk"[Mesh])) AND (("Mortality"[Mesh]) OR (Mortalit*[Title/Abstract]))) AND (((Migraine*[Title/Abstract]) OR (migrainous[Title/Abstract])) OR ("Migraine Disorders"[Mesh])) Sort by: Most Recent	227

Supplementary Tables 2 Search strategy of EMBASE

No.	Content	Result
#1	'migraine'	99,859
#2	'migraine*':ab,ti OR 'migrainosus':ab,ti	74,958
#3	#1 OR #2	100,539
#4	'mortality'	2,248,997
#5	'mortalit*':ab,ti	1,714,619
#6	#4 OR #5	2,255,658
#7	'risk'	5,767,403
#8	'risk*':ab,ti	4,934,515
#9	#7 OR #8	5,962,054
#10	#3 AND #6 AND #9	837

Supplementary Tables 3 Search strategy of Cochrane Library

No.	Content	Result
#1	MeSH descriptor: [migraine] this term only	10,505
#2	(Migraine*):ab,ti,kw OR (Migrainosus):ab,ti,kw	10,388
#3	#1 OR #2	10,635
#4	MeSH descriptor: [Mortality] this term only	131,534
#5	(Mortalit*):ab,ti,kw	127,413
#6	#4 OR #5	131,852
#7	MeSH descriptor: [Risk] this term only	327,798
#8	(risk*):ab,ti,kw	332,875
#9	#7 OR #8	340,479
#10	#3 AND #6 AND #9	108(tiral=23)

Supplementary Tables 4 Outcome assessment

Study	Outcomes definition	Outcome assessment
Kim, et al	Suicide death: ICD-10 codes (X60–X84)	Database records (ICD-10 codes)
Elser, et al	Suicide death: ICD-10 codes (X60–X84)	Database records (ICD-10 codes)
Liu, et al	1.All-cause death: Not reported 2.CVD death: I00–I09 (acute rheumatic fever and chronic rheumatic heart diseases), I11 (hypertensive heart disease), I13 (hypertensive heart and renal disease), I20–I25 (ischemic heart diseases), I26–I28 (pulmonary embolism and other acute pulmonary heart diseases), I29 (various cardiovascular diseases caused by different reasons), I30–I51 (other forms of heart disease), and I60–I69 (cerebrovascular diseases).	Database records (ICD-10 codes)
Rohmann, et al	1.All-cause death: Not reported 2. CVD death: Not reported	Database physician diagnosis
Harnod, et al	All-cause death: Not reported	Database records (ICD-9 codes)
Rambarat, et al	1.All-cause death: Not reported 2. CVD death: Not reported	Death certificates
Kruth, et al	CVD death: Not reported	Autopsy reports Death certificates Medical records
Asberg, et al	1. All-cause death: Not reported 2. CVD death: cerebrovascular disease (ICD-10 code I60-I69), death by ischemic heart disease (IHD) (ICD-10 code I20-I25), and deaths by other diseases of a cardiovascular nature (ICD-10 code I00-I15, I26-I52 and I70-I99).	Database records (ICD-10 codes)
Colman, et al	Suicide mortality: ICD10 codes of T96, T97, Y87, or X60 through X84	Database records (ICD-10 codes)
Monteith, et al	CVD death: stroke, MI, heart failure, pulmonary embolus, cardiac arrhythmia, or other vascular cause	Family report; Medical records; Death certificates
Ilgen, et al	Suicide death: ICD10 codes of X60-X84 and Y87.0	Database records (ICD-10 codes)
Gudmundsson, et al	1. All-cause death: Not reported 2.CVD death: coronary heart disease, stroke, and other forms of CVD	Questionnaire (ICD-9 and ICD-10 codes)
Kruth, et al	CVD death: any ischemic CVD	Autopsy reports; Medical records; Death certificates; Family report

Liew, et al	CVD death: coronary heart disease	Database records
Becker, et al	All-cause death: Not reported	Database records
Velentgas, et al	1. All-cause death: Not reported 2.CVD death: Not reported	Database records (ICD-9 codes)
Hall, et al	1.All-cause death : Infectious and parasitic, Neoplasms, Endocrine, nutrition, metabolic, and immunity, Nervous system and sense organ, Mental disorders, Respiratory, Digestive system, Genitourinary, Circulatory system, Injury and poisoning, Unknown cause 2.CVD death: Not reported.	Database records (ICD-9 codes) Death certificates
Waters, et al	All-cause death: cerebrovascular, cancer, ischaemic heart disease, other	Death certificates

CVD: cardiovascular disease; ICD: International Classification of Diseases code.

Supplementary Tables 5 The quality assessment of cohort studies

Study	Year	Selection (4)	Comparability (2)	Outcome (3)	Total
Cohort studies (n=18)					
Kim, et al	2025	****	**	**	8
Elser, et al	2025	****	**	**	8
Liu, et al	2023	****	**	**	8
Rohmann, et al	2020	***	**	**	7
Harnod,et al	2018	****	**	**	8
Rambarat,et al	2017	****	**	**	8
Kruth,et al	2016	***	**	**	7
Asberg,et al	2016	****	**	***	9
Colman,et al	2015	****	**	**	8
Monteith,et al	2015	***	**	**	7
Ilgen, et al	2013	***	**	***	8
Gudmundsson,et al	2010	****	**	***	9
Kruth,et al	2007	**	**	***	7
Liew,et al	2007	****	*	**	7
Becker,et al	2007	****	**	**	8
Velentgas, et al	2004	****	**	**	8
Hall,et al	2004	***	**	**	7
Waters,et al	1983	**	*	***	6

The NOS scale was used to evaluate the quality of the cohort and case-control studies.

Supplementary Tables 6 Publication bias test

Mortality studied	Egger's test (<i>P</i>)
CVD mortality	0.226
Suicide mortality	0.836

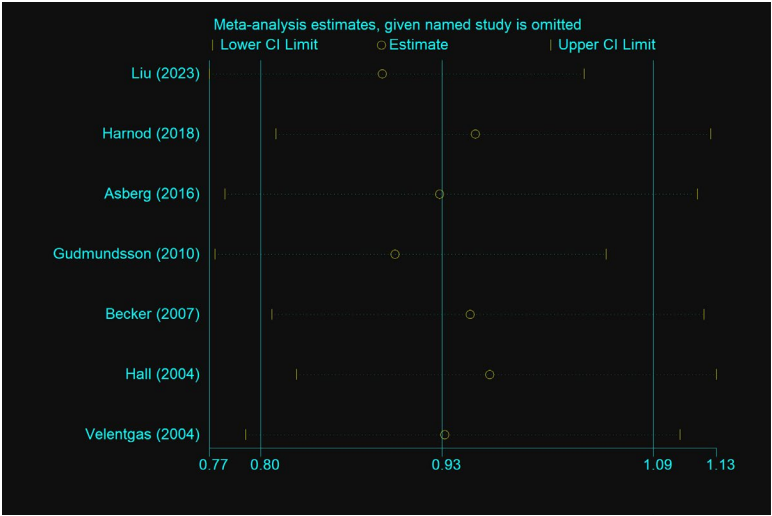
Supplementary Tables 7 Meta-Regression of Heterogeneity Factors in Migraine and All-Cause Mortality

Variables	Regression Coefficient (95% confidence interval)	Stand Error	P value
Sex	0.08 (-0.26, 0.42)	0.14	0.584
Migraine type	0.23 (-0.06, 0.52)	0.07	0.074
Region	-0.07 (-0.29, 0.14)	0.08	0.425
Data source type	-0.15 (-0.56, 0.25)	0.16	0.347
Migraine diagnosis	-0.30 (-0.52, -0.08)	0.08	0.016
Medication adjustment	0.10 (-0.33, 0.52)	0.17	0.575
Mean follow-up duration	-0.30 (-0.52, -0.08)	0.08	0.016

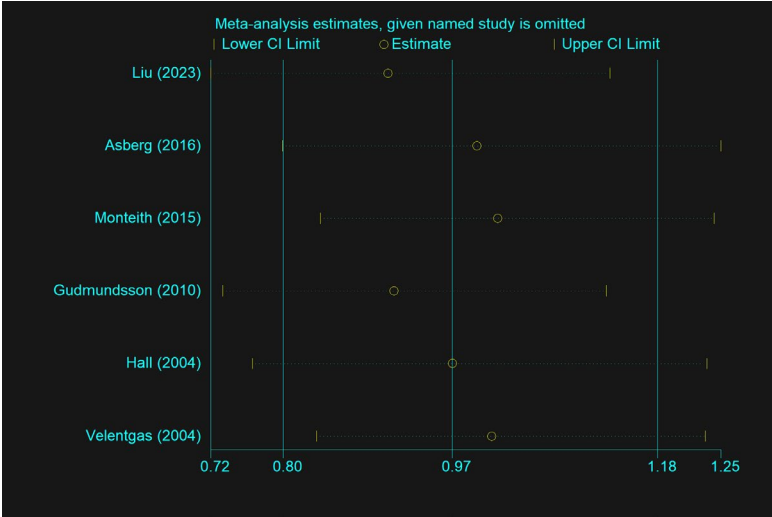
Supplementary Tables 8 Meta-Regression of Heterogeneity Factors in Migraine and CVD Mortality

Variables	Regression Coefficient (95% confidence interval)	Stand Error	P value
Sex	-0.05 (-0.56, 0.25)	0.09	0.590
Migraine type	0.29 (-0.16, 0.73)	0.16	0.150
Region	0.13 (-0.59, 0.86)	0.26	0.638
Data source type	0.04 (-0.70, 0.77)	0.26	0.893
Migraine diagnosis	-0.23 (-0.97, 0.50)	0.26	0.431
Medication adjustment	0.28 (-0.34, -0.91)	0.23	0.274
Mean follow-up duration	0.36 (-0.19, 0.91)	0.20	0.146
CVD: cardiovascular disease			

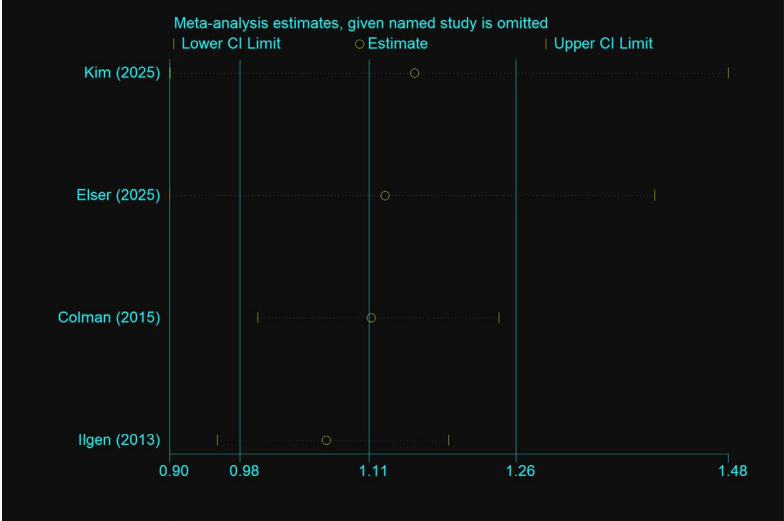
Supplementary Figure 1.A Sensitivity analysis of all-cause mortality



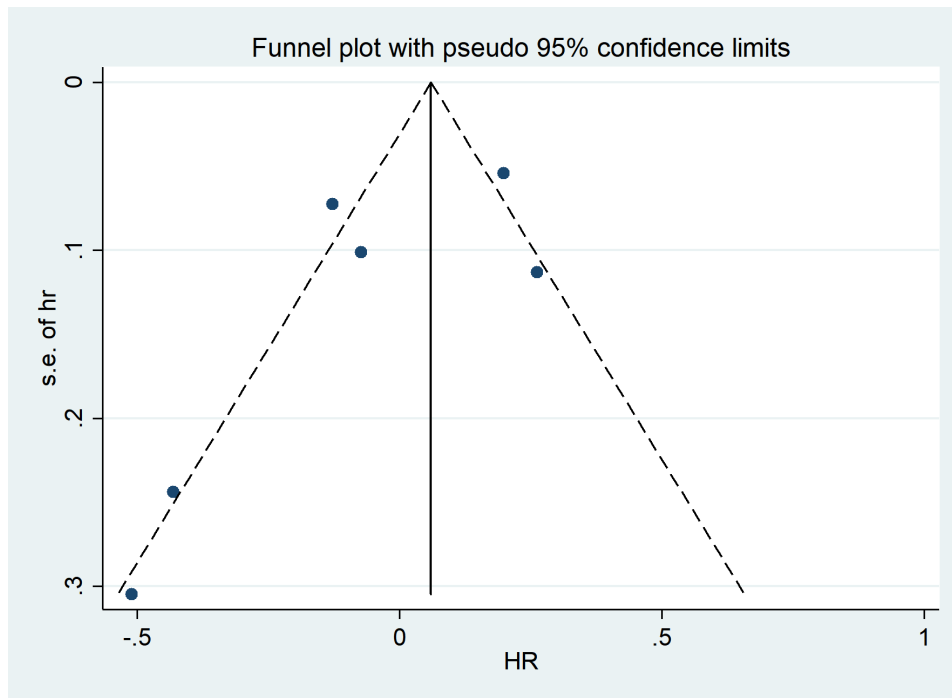
Supplementary Figure 1.B Sensitivity analysis of CVD mortality



Supplementary Figure 1.C Sensitivity analysis of suicide mortality



Supplementary Figure 2.A Funnel plot of CVD mortality



Supplementary Figure 2.B Funnel plot of suicide mortality

