Supplementary table 1. The Detailed Characteristics of the Included Studies, 1989-2015

Author(Ref.) Year	Country (Continent)	Age	Gender	Sample size (cases)	Years of follow up	Definition of VI	VI assessment	How cause/ notification of death identified	RR	95 % CI	Adjustment for covariates
Tournier et al.(4) 2008	Canada (North America)	≥65	W&M	21995 (18080)	5	Subjects diagnosed as blind (ICD-9 codes 369.0); severe vision loss (ICD-9 codes 369.1x to 369.4x); moderate vision loss (ICD-9 codes 369.6x to 369.9x)	ICD-9	Death was identified in the RAMQ medical services database	1.34	1.21, 1.48	Age, gender, year of entry in the cohort, chronic disease score, depression, fracture and diabetes
Pedula et al.(19) 2006	US (North America)	≥65	W	9704(3427)	12.2	Not mentioned	Bailey Lovie letter chart	Death certificates were physician-adjudicated to determine the primary cause of death	1.19	1.04, 1.36	Age, body mass index, pulse, pack-years smoked, living alone, history of diabetes mellitus, hyperthyroidism, stroke, hypertension, use of non-thiazide

Study	Year (Region)	Age	Sex	N (cases)	Follow-up	VI definition	Measurement	Death ascertainment	RR/HR	95% CI	Adjustments
											diuretics, estrogen use, history of falls, self-reported health status, functional impairment, off feet 4 hours or more per day, and required use of arms to stand from chair，contrast sensitivity
McCarty et al.(21) Australia	2001 (Oceania)	≥40	W&M	3271(231)	5	Not mentioned	acuity chart	Confirmation and causes of death were obtained from the National Death Index	1.41	0.13, 15.34	Age, sex, country of birth, smoking, hypertension, arthritis
Lopez et al.(22) 2011	Australia (Oceania)	76-81	W	3014(609)	6.36	According to the answer to questions about vision	Self-report	To identify deaths, participant information was probabilistically matched to the Australian National Death Index	1.5	1.24, 1.82	Stroke
			M	234(620)					1.44	1.17, 1.77	

Study	Country (Region)	Age	Sex	N (deaths)	Follow-up	VI definition	VA chart	Mortality ascertainment	HR	95% CI	Adjustments
Li et al.(23) 2011	China (Asia)	50-96	W&M	5057(214)	4	Blindness (severe VI) was defined as presenting VA worse than 1.30 logMAR. Moderate visual impairment was defined as presenting VA worse than 0.48 logMAR but equal to or better than 1.30 logMAR. Unilateral visual impairment was defined as visual impairment in one eye but 0.48 logMAR or better in the other eye.	logarithmic visual acuity chart	Those who died after the population-based study were identified and the death certificate was checked. The cause of death was determined by the physicians in charge of health of the village population	3.6	2.00, 6.60	Age, gender
			M	2343(100)					4.6	1.70, 12.40	
			W	2621(114)					3.1	1.40, 6.60	
Kulmala et al.(24) 2008	Finland (Europe)	75	W&M	223(107)	10	VA of <0.52 logMAR in the better eye was defined as visual impairment	Landolt ring chart	Death dates were received from the official population register of the	1.34	0.75, 2.39	Gender, socio-economic status, Body mass index, Diabetes, Cardiovascular
		80		193(138)					0.75	0.33, 1.67	

Study	Country	Age		N (deaths)	Follow-up	Definition	Measure	Death ascertainment	HR	95% CI	Adjustments
						and VA of $\geq$ 0.52 logMAR but $\leq$ 0.30 in the better eye was defined as lowered vision. In this study, visual acuity of >0.30 was defined as normal vision.		province of Central Finland			dis, Walking speed, Physical activity, Depression, Injurious accidents
Khanna et al.(25) 2013	India (Asia)	≥30	W&M	4188(799)	11.5	Blindness was defined using Indian definitions as presenting visual acuity less than 1.00 logMAR or central visual field less than 20°in the better eye. VI was defined as presenting visual acuity less than 0.48-1.00 logMAR or equivalent visual field loss	logMAR charts	Death was identified by a structured questionnaire. The cause of death was based on verbal autopsy using WHO recommend d methods	1.46	1.10, 1.95	Age, gender, education level, diabetes, hypertension, BMI and smoking status

Jacobs et al.(26) 2005	Israel (Asia)	70	W&M	261(70)	7	Measured visual impairment was defined as best corrected visual acuity in the best eye of 0.30 logMAR or worse.	SnellenE chart	Mortality data were obtained from a comprehensive review of all death certificates issued through the Ministry of the Interior	2.84	1.48, 5.46	Self-rated health relative to others, independence in ADL, hypertension, diabetes, ischemic，heart disease, cerebrovascular disease, anemia, respiratory disease, malignancy, kidney disease, cigarette smoking, financial difficulties, and gender
Gu et al.(28) 2013	China (Asia)	≥65	W	7929(3474)	3	According to the answer to questions about vision	Self-report	Not mentioned	1.8	0.92, 3.50	Age (single year), sex, current urban-rural residence, ethnicity, socioeconomic status,
			M	5932(2264)					1.35	1.20, 1.52	

											social/family support, health practice, baseline health
Gopinath et al.(29) 2013	Australia (Oceania)	≥55	W&M	2812(862)	10	Visual impairment was defined as presenting or best corrected visual acuity of the better eye less than 39 letters (<0.30 logMAR).	logarithmic visual acuity chart	Cross-matched with Australian National Death Index (NDI) data for deaths	1.05	0.61, 1.80	Age, sex, body mass index, systolic blood pressure, current smoking status, poor self-rated health, walking disability, presence of hypertension and/or diabetes, history of cancer, angina, stroke and/or acute myocardial infarction and cognitive impairment

Foong et al.(30) 2008	China (Asia)	40-79	W&M	1225(126)	6.8	Not mentioned	logarithmic visual acuity chart	The unique national registration identity card numbers	2.9	1.40, 6.30	Age, gender, hypertension, diabetes, smoking, heart attack, stroke, and income
Fisher et al.(31) 2014	Iceland (Europe)	≥67	W&M	4926(846)	5.3	Vision impairment was defined as a presenting visual acuity of 0.40 logMAR or worse in the better eye. Eyes that were blind were not excluded from this analysis.	acuity charts	Mortality status was ascertained by the IHA	0.93	0.72, 1.20	Sex, age, smoking status, BMI, hypertension, diabetes, self-reported health status, cognitive status, self-reported history of falls, total cholesterol, baseline CVD history and hearing aid use
			W	2805(387)					0.94	0.66, 1.33	
			M	2121(459)					0.9	0.62, 1.32	
Appollonio et al.(33) 1995	Italy (Europe)	70-75	W	769(152)	6	Criteria for impairment: < 0.40 logMAR	Snellen chart	Not mentioned	1.22	0.75, 2.18	Unadjusted
			M	371(139)					1.66	0.72, 3.85	
Thiagarajan et al.(34) 2005	UK (Europe)	≥75	W&M	13569(6025)	6	Binocular visual acuity<0.48 logMAR	Glasgow acuity cards	United Kingdom government's Office for National	1.17	1.07, 1.27	Age，sex

									Statistics		
Berdeaux et al.(32) 2007	French (Europe)	≥0	W&M	37163(3674)	2	According to the answer to questions about vision	Self-report	Extraction from the French National Register of Deaths and by family interviews	1.68	1.23, 2.23	ADL, age, sex, and geographical region
Whitson et al.(16) 2007	US (North America)	≥65	W&M	3879(1119)	6	According to the answer to questions about vision	Self-report	Death information was obtained from family members and through a National Death Index search	1.59	1.28, 1.97	Age, race, sex, highest educational level, self-rated health, a health index score that reflects disease burden, and depression
Thompson et al.(27) 1989	UK (Europe)	≥75	W&M	492(103)	5	Not mentioned	Snellen charts at 6 m	Not mentioned	0.35	0.08, 1.57	Sex, age
Knudtson et al.(20) 2006	US (North America)	43-84	W&M	4926(1576)	13.2	Visual impairment was defined as a best corrected visual acuity of 0.30 logMAR or worse in the	Early Treatment Diabetic Retinopathy Study protocol	Death certificate，Cause of death was defined as any contributing cause listed in the death	1.24	1.04, 1.48	Age, sex, proteinuria, history of cancer, BMI, BMI2, ratio of total to high-density lipoprotein

						better eye and included eyes that were blind (visual acuity of 1.00 logMAR or worse)	certificate according to the codes of the International Classification of Diseases, Ninth Revision				cholesterol level, smoking, pulse rate, diabetes status, cardiovascular disease history, sedentary lifestyle, education, and systolic blood pressure
Ostbye et al.(36) 1999	Canada (North America)	≥65	W	5183(1094)	5	Not mentioned	Not provided	Not mentioned	1.1	0.90, 1.30	Age, education level, living alone, stroke, hypertension, Diabetes, smoking, independence in ADL, cognitive impairment, heart disease, martial status, hearing impaired.
			M	3566(1015)					1	0.70, 1.20	
Lee et al.(35) 2002	US (North America)	≥18	M	53580(8949)	7	Not mentioned	ICD-9	National Death Index	1.33	0.96, 1.84	Cataract, glaucoma, retinopathy, age, race, martial status, education level, reported heath status
			W	63216(8949)					2.21	1.61, 3.02	

Reuben et al.(18) 1999	US (North America)	55-74	W&M	5444(1696)	10	If corrected acuity was 0.30 logMAR or worse in the better eye	standard protocol	All deaths were confirmed by death certificates or proxy interviews	1.2	1.02, 1.42	Age, sex, race, education, past myocardial infarction, diabetes, hypertension, heart failure
Cacciatore et al.(37) 2004	Italy (Europe)	65-95	W&M	1332(305)	6	According to the answer to questions about vision	Self-report	By means of death certificates	1.4	1.07, 1.84	Age, sex, comorbidity, diabetes and hypertension
Siantar et al.(17) 2015	Singapore (Asia)	40-80	W&M	3280(398)	7.24	VI was defined as greater than 0.30 logMAR in the better-seeing eye	logMAR	The unique national registration identity card numbers, together with date of birth and gender. The underlying cause of death was reported using the International Classification of Diseases 9 codes	1.57	1.25, 1.96	Age, gender, Socio-economic status, diabetes, hypertension, smoking status, BMI and cardiovascular disease

Abbreviations: ADL, activities of daily living; BMI, body mass index; CI, confidence interval; CVD, cardiac vascular disease; ICD, International statistical classification of

diseases; logMAR, Logarithm of the Minimum Angle of Resolution; M, men; RR, relative risk; VA, visual acuity; VI, visual impairment; W, women