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Title	Prevalence of frailty in 62 countries across the world: a systematic review and meta-analysis of population-level studies
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Appendix

Supplemental references

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eTable 1. PRISMA Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	2,3
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	3,4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	3,4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	3,4
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	4
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	4

Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	4
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	4
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	4
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	4
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	4,5
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	5,6
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	5
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	eTable 4
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	5 Table 1, Supp. data
Synthesis of results	21	Present the main results of the review. If meta-analyses are done, include for each, confidence intervals and measures of consistency.	5-10
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	-
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	10

DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	10-11
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	11-12
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	12
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	13

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

eTable 2. Characteristics of all population-based studies

Note N/A (not available or unclear) refers to data not being available in the paper publication or on request from the corresponding author.

Author and year	Data source	Countries or territories	Setting(s) of study	Nationally representative (Yes/No)	Data sets (N)	Number of persons	Age group	Mean age (s) (at study entry)	Data collection period (years)	Sample frame type	Sampling Probability (Prob) vs non-probability (NP)	Overall response rate (%)	Assessment scale(s)
Aarts et al., 2015	Age Gene/Environment Susceptibility Reykjavik Study	Iceland	Reykjavik	No	1	4414	67+	76.4	2002-2006	Complete	Prob	72%	Fried
Abe et al., 2019	Abe et al., 2019 Kusatsu Longitudinal Study on Aging and Health	Japan	Saitama (Hatoyama town A) Saitama (Hatoyama town B) Tokyo (Ota city East) Tokyo (Ota city West) Gunma (Kusatsu town)	No	5	1950 871 2349 2436 1576	65+	72.9 72.8 73.6 74.0 74.8	2018-2018 2018-2018 2016-2016 2016-2016 2017-2017	N/A N/A Complete Complete N/A	N/A N/A Prob Prob N/A	N/A	Kaigo-Yobo
Agreli et al., 2013	Fernandes Agreli et al., 2013	Brazil	São Paulo (Embu)	No	1	128	60+	68.9	2010-2010	Health	Prob	N/A	EFS
Aguilar-Navarro et al., 2015	Mexican Health and Aging Study	Mexico	Nationally representative	Yes	1	5644	60+	68.7	2001-2001	Complete	Prob	81%	Fried
Ahmad et al., 2018	Ahmad et al., 2018	Malaysia	Negeri Sembilan; Kuala Pilah	No	1	2324	60+	70.6	2013-2014	Complete	Prob	96%	Fried
Akin et al, 2015	Kayseri Elderly Health Study	Turkey	Kayseri	No	1	897	65+	71.5	2013-2013	Health	Prob	N/A	FRAIL Fried
Albala et al., 2017	ALEXANDROS	Chile	Santiago	No	1	2098	60+	68.3	1999/2005-2000/2008	Health	Prob	N/A	Fried
Alvarado et al., 2008	Salud Bienestar y Envejecimiento; Spanish for Health, Well-being and Aging	Barbados Cuba Mexico Brazil	Bridgetown Havana Mexico City São Paulo	No	4	1446 1726 1063 1879	60+	N/A	1999-2000	Complete	Prob	80%-95%	Fried
Andrade et al., 2018	Longitudinal Study of Health of the Brazilian Elderly	Brazil	Nationally representative	Yes	1	8556	50+	62.7	2015-2016	Complete	Prob	N/A	Fried
Arnadottir et al., 2020	Arnadottir et al., 2020	United Kingdom	63 GPs in England (Devon, Warwickshire/Herefordshire, Cambridge, Worcestershire, Birmingham and Black Country and Newcastle)	No	1	9671	70+	N/A	2011-2014	Health	Prob	33.3%	Strawbridge
Arosio et al., 2019	Genetics of Healthy Ageing	Italy	Northern Italy	No	1	94	99+	101.9	2007-2014	Complete	Prob	N/A	FI
Augusti et al, 2017	Augusti et al, 2017	Brazil	São Paulo (Amparo)	No	1	306	65+	72	?-2016	Health	NP	N/A	Fried
Avila-Funes et al., 2008	Three-City Study	France	Bordeaux, Dijon, Montpellier	No	1	6078	65+	74.1	1999-2000	Complete	Prob	N/A	Fried

Badrasawi et al., 2016	Long-term Research Grant Scheme - Towards Useful Aging	Malaysia	Klang Valley	No	1	473	60+	68	2012-2013	Complete	Prob	87%	Fried
Bandeen-Roche et al., 2015	National Health and Aging Trends Study	United States of America	Nationally representative	Yes	1	7439	65+	N/A	2011-2011	Health	Prob	64%	Fried
Belisário et al., 2018	Belisário et al 2018	Brazil	Minas Gerais (Uberaba)	No	1	705	60+	N/A	2014-2014	Complete	Prob	96%	Fried
Bennett et al., 2013	The Chinese Longitudinal Health and Longevity Study	China	Nationally representative (22/31 Provinces)	Yes	1	6300	80-99	88.9	1998-2005	Complete	NP	84%	FI
Biritwum et al., 2016	Study on global AGEing and adult health	China India Ghana South Africa Russian Federation Mexico	Nationally representative	Yes	6	13175 6560 4305 3832 3938 2313	50+	62.5 61.5 64.3 61.6 63.9 62.6	2007-2010	Complete	Prob	44-99%	FI
Blodgett et al., 2015	National Health and Nutrition Examination Survey	United States of America	Nationally representative	Yes	1	4096	50+	63.4	2003/2005-2005/2006	Complete	Prob	N/A	Fried FI
Blodgett et al., 2017	NHANES	United States of America	Nationally representative	Yes	1	2171	66+	N/A	2003-2006	Complete	Prob		FI (X3)
Blyth et al., 2008	Concord Health and Ageing in Men Project	Australia	New South Wales (Sydney)	No	1	1674	70+	N/A	2005-2007	Complete	Prob	46%	Fried
Boeckxstaens et al., 2015	BELFRAIL	Belgium	Brussels, Flanders, Wallony	No	1	567	80+	84.7	2008-2009	Health	NP	N/A	Fried
Bongue et al., 2017b	Fragilité: une étude longitudinale de ses expressions	Canada	3 settings: metropolitan (CSSS Saint-Laurent-Bordeaux-Cartierville-Montréal), urban (CS SS Institut universitaire de gériatrie de Sherbrooke [CSSSIUGS]) and semi-urban region (CSSS Des Érables)	No	1	1643	65+	78.7	2010-2010	Health	Prob	N/A	Fried aCGA GFI VES-13
Boulos et al., 2013	Aging and Malnutrition in Elderly Lebanese study	Lebanon	7 of 8 Mohafazat (rural areas)	No	1	1120	65+	N/A	2011-2012	Complete	Prob	93.02%	SOF
Bowen, 2012	Health and Retirement Study	United States of America	Nationally representative	Yes	1	11491	50+	64.25	1998-2006	Complete	Prob		Fried
Brigola et al., 2020	Variables associated with cognition in elderly caregivers	Brazil	São Paulo (São Carlos)	No	1	667	60+	71.3	2014-2014	Health	Prob	56.1%	Fried
Brown et al., 2019	CARE75+	United Kingdom	28 sites	No	1	887	75+	81.5	2015-2018	Health	Prob	40%	Fried
Buch et al., 2018	Mabat Zahav survey	Israel	Nationally representative	Yes	1	1619	65+	74.60	2005-2006	Health	Prob		FRAIL
Bunce et al., 2019	Canberra Longitudinal Study	Australia	Canberra	No	1	878	70-97	76.49	1990-2002	Complete	Prob	68%	Fried
Çakmur, 2015	Cakmur, 2015	Turkey	Kars (rural area)	No	1	168	65+	72.7	2014-2014	Complete	NP	N/A	Fried
Carneiro et al., 2016a	Carneiro et al., 2016a	Brazil	Minas Gerais (north)	No	1	683	60+	70.9	2013-2013	Complete	Prob	N/A	EFS
Carneiro et al., 2016b	Carneiro et al., 2016a	Brazil	Minas Gerais (Montes Claros)	No	1	106	80+	N/A	2013-2013	Complete	Prob	N/A	EFS

Carneiro et al., 2017	Carneiro et al., 2017	Brazil	Minas Gerais (north)	No	1	360	65+	75	2015-2015	Other	NP	N/A	EFS
Castell et al., 2010	Cohort of Peñagrande	Spain	Madrid	No	1	814	65+	77	2008-2008	Health	Prob	73%	Fried
Cawthon et al., 2007	Osteoporotic Fractures in Men	United States of America	Alabama (Birmingham), California (Palo Alto), California (San Diego), Minnesota (Minneapolis), Oregon (Portland), Pennsylvania (Monongahela Valley)	No	1	5993	65+	73.7	2000-2002	Complete	Prob	N/A	Fried
Cesari et al., 2006	InCHIANTI	Italy	Florence (Bagno a Ripoli), Florence (Greve in Chianti)	No	1	923	65+	74.8	1998-2000	Complete	Prob	73%	Fried
Cesari et al., 2012	Cesari et al., 2012	France	Labastide-Murat	No	1	523	60+	N/A	2012-2012	Complete	Prob	51%	FRAIL Fried
Chamberlain et al., 2016	Rochester Epidemiology Project	United States of America	Minnesota	No	1	12269	60-89	70.5	2005-2005	Health	Prob	75%	FI
Chen et al., 2010	Survey of Health and Living Status of the Elderly	Taiwan	Nationally representative	Yes	1	2238	65+	73.3	2003-2003	Complete	Prob	92% approx.	Fried
Chen et al., 2014	The Coming of an Aging Society: An Integrative Study on Social Planning in Taiwan in 2025	Taiwan	25 villages	No	1	495	65+	73.4	2007-2007	Complete	Prob	63%	Fried
Chen et al., 2015	Sasaguri Genkimon Study	Japan	Fukuoka	No	1	1565	65+	73.3	2011-2011	Complete	Prob	32%	Fried
Choe et al., 2018	Survey on Health and Welfare Status of the Elderly	Republic of Korea	Fukuoka (Sasaguri)	No	1	8907	65+	72.37	2008-2009	N/A	N/A	N/A	Fried
Clegg et al., 2016	The Health Improvement Network ResearchOne	United Kingdom	Nationally representative	Yes	1	516007 415534	65-95	75.0 75.0	2008-2013	Health	Prob	N/A	FI
Closs et al., 2016	The Multidimensional Study of the Elderly in the Family Health Strategy	Brazil	Rio Grande do Sul (Porto Alegre)	No	1	521	60+	68.5	2011-2012	Health	Prob	N/A	Fried
Collerton et al., 2012	NEWCASTLE85+	United Kingdom	Newcastle (North Tyneside)	No	1	552	85+	85.5	2006-2007	Health	Prob	N/A	Fried FI
Cramm et al., 2014	Cramm et al., 2014	Netherlands	Rotterdam	No	1	855	70+	77.9	2012-2013	Complete	Prob	39%	TFI
Cruz et al., 2017	Cruz et al., 2017	Brazil	Minas Gerais (Juiz de Fora)	No	1	339	60+	74.3	2014-2015	Complete	Prob	N/A	EFS
Curcio et al., 2014	Curcio et al., 2014	Colombia	4 villages (coffee-growing zone of the Colombian Andes Mountains)	No	1	1878	60+	70.9	2005-2005	Other	NP	N/A	Fried
da Silva et al., 2018a	Longitudinal Study of the Elderly Health of Alcobaça, BA	Brazil	Alcobaça	No	1	457	60+	70.25	2015-2015	Health	Prob	67%	Fried
Dasgupta et al., 2019	Dasgupta et al., 2019	India	West Bengal	No	1	165	60+	66.99	2018-2018	Complete	Prob	N/A	TFI
Davis et al., 2011	Canadian study of Health and Ageing	Canada	Nationally representative	Yes	1	1295	70+	N/A	1996-1997	Complete	Prob	N/A	FI

de Labra et al., 2018	Effectiveness of the Comprehensive Gerontological Assessment and longitudinal follow-up in the healthy ageing promotion project	Spain	Galicia	No	1	749	65+	75.8	2013-2014	Other	NP	N/A	Fried
de Queiroz Neves et al., 2018	Neves et al., 2018	Brazil	Mato Grosso (Várzea Grande)	No	1	377	60+	69.6	2016-2016	Health	Prob	N/A	TFI
De Witte et al., 2018	Belgian Ageing Studies	Belgium	142 cities	No	1	28245	60+	71.8	2008-?	Complete	Prob	65-85%	CFAI
del Brutto et al., 2017	Atahualpa Project	Ecuador	Atahualpa (a rural village)	No	1	298	60+	70	2012-2015	Complete	Prob	77%	EFS
Dent et al., 2016	LINKIN	Australia	South Australia (Lincoln)	No	1	1501	65+	75.9	2010-2010	Complete	Prob	N/A	FI
Dent et al., 2017	South Australian Monitoring and Surveillance System	Australia	South Australia	No	1	7207	65+	74.8	2013-2015	Other	Prob	60%	FI
Diaz de León González et al., 2016	Mexican health and aging study	Mexico	Nationally representative	Yes	1	4729	60+	N/A	2001-2001	Complete	Prob	N/A	FRAIL
Diniz et al., 2018	Diniz et al., 2018	Brazil	São Paulo (Ribeirão Preto)	No	1	262	65+	N/A	2007-2008	Complete	Prob	26.4%	EFS
Dong et al., 2018	Dong et al 2018	China	Shandong (Jinan)	No	1	1216	60+	N/A	2016-2016	Other	NP	N/A	FRAIL Fried
dos Santos Tavares et al., 2017	dos Santos Tava et al., 2017	Brazil	Minas Gerais (Uberaba)	No	1	1609	60+	N/A	2012-2012	Health	N/A	N/A	Fried
Duarte et al., 2013	Living conditions, health and aging: a comparative study	Brazil	Paraíba (João Pessoa)	No	1	166	60+	73.25	2011-2011	Complete	Prob	100%	EFS
Duarte et al., 2014	Oporto Centenarian Study	Portugal	Oporto Metropolitan Area	No	1	50	100+	101.34	2013-2013	Complete	NP	N/A	Fried
Duarte et al., 2015	Duarte et al., 2015	Portugal	Guimarães	No	1	338	50+	N/A	2015-2015	Complete	Prob	99.7%	Fried
Ebeid et al., 2016	Ebeid et al., 2016	Egypt	Dakahlia (Meet Abbad-Nabaroh)	No	1	88	60+	N/A	N/A	Complete	Prob	62.9%	SOF
Ensrud et al., 2007	The Study of Osteoporotic Fractures	United States of America	Baltimore County, Maryland; Minneapolis, Minnesota; Portland, Oregon; and the Monongahela Valley, Pennsylvania	No	1	6724	69+	76.7	1992-1994	Complete	Prob	N/A	Fried
Espinoza et al., 2010	San Antonio Longitudinal Study of Aging	United States of America	Texas (San Antonio)	No	1	672	65+	N/A	1992-1996	Complete	Prob	63.3%	Fried
Etman et al., 2014	Elderly And their Neighborhood study	Netherlands	1 city (middle-sized)	No	1	408	65+	75.1	2011-2012	Complete	Prob	36%	ISAR
Fabrício et al., 2019	Fabrício et al., 2019	Brazil	São Paulo (São Carlos)	No	1	267	60+	70.2	2016-2017	Health	Prob	84.8%	Fried
Fabrício-Wehbe et al., 2009	Fabrício-Wehbe et al., 2009	Brazil	São Paulo	No	1	137	65+	75.33	2007-2008	Complete	Prob	52%	EFS
Farías-Antúnez et al., 2019	COMO VAI?(How are you?) study	Brazil	Rio Grande do Sul (Pelotas)	No	1	1399	60+	70.56	2014-2014	Complete	Prob	76%	EFS
Feng et al., 2014	Singapore Longitudinal Aging Study-I.	Singapore	South East Region	No	1	1827	55+	65.9	2003-2005	Complete	Prob	55%	Fried
Ferriolli et al., 2017	Study of Frailty in Elderly Brazilian Individuals	Brazil	Minas Gerais (Poços de Caldas),	No	1	5638	65+	73.1	2009-2010	Complete	Prob	N/A	Fried

			Pará (Belém), Paraíba (Campina Grande), Piauí (Parnaíba), Rio Grande do Sul (Ivoti), São Paulo (Campinas), São Paulo (Ermelino Matarazzo)										
Fhon et al., 2012	Living, health and aging conditions: a comparative study	Brazil	São Paulo (Ribeirão Preto)	No	1	240	60+	73.5	2010-2011	Complete	Prob	N/A	EFS
Forti et al., 2014	Conselice Study of Brain Aging	Italy	Ravenna (Conselice)	No	1	766	65+	73.6	1999-2000	Complete	Prob	60%	SOF
Franse et al., 2018	The Older Persons and Informal Caregivers Survey Minimum DataSet	Netherlands	Nationally representative	Yes	1	23371	55+	77.8	2010-2013	Other	Prob	N/A	FI
Fried et al., 2001	Cardiovascular Health Study	United States of America	4 U.S. communities: Sacramento County, California; Washington County, Maryland; Forsyth County, North Carolina, and Allegheny County (Pittsburgh), Pennsylvania	No	1	5317	65+	72.69	1989/1992-1990/1993	Health	Prob	N/A	Fried
Garcia-Garcia et al., 2011	The Toledo study for healthy aging	Spain	Toledo	No	1	1642	65+	75.2	2006-2009	Complete	Prob	54%	Fried
García-González et al., 2009	Mexican Health and Aging Study	Mexico	Nationally representative	Yes	1	4082	65+	73	2001-2001	Complete	Prob	N/A	FI
García-Peña et al., 2016	Mexican health and aging study	Mexico	Nationally representative	Yes	1	1108	60+	69.8	2012-2012	Complete	Prob	N/A	FI
Ge et al., 2017	Longitudinal Population Health Index (PHI) survey	Singapore	central area	No	1	721	60+	70.6	2015-2016	Complete	Prob	53.3%	CFS
Ghasemi et al., 2019	Ghasemi et al., 2019	Iran	Tehran (District 5)	No	1	480	60+	70.1	2016-2016	Complete	Prob	N/A	FI
Gill et al., 2006	Precipitating Events Project	United States of America	Connecticut (New Haven)	No	1	754	70+	78.4	1998-1999	Health	NP	71.7%	Fried
Grden et al., 2017	Grden et al., 2017	Brazil	Paraná (Curitiba, Boa Vista Sanitary District)	No	1	243	80+	84.4	2013-2015	Health	Prob	N/A	Fried
Gross et al., 2018	The health of the elderly in primary care	Brazil	Rio Grande do Sul	No	1	555	60+	71.1	2015-2015	Health	Prob	79%	Fried
Guessous et al., 2014	Bus Santé study	Switzerland	Geneva (Canton)	No	1	2930	50+	60.0	2006-2010	Complete	Prob	60%-68%	Fried
Gurina et al, 2011	The ‘‘Crystal’’ Study	Russian Federation	St. Petersburg District	No	1	604	65+	N/A	2009-2009	Health	Prob	66%	Fried GFI Puts model
Hao et al., 2016	Project of Longevity and Aging in Dujiangyan study	China	1 province	No	1	767	90+	93.7	2005-2005	Complete	Prob	62.1%	FI
Harmand et al., 2017	Three-City Study	France	Bordeaux	No	1	1278	65+	74	1999-2000	Complete	Prob	N/A	FI Fried TFI

Hegendörfer et al., 2020	BELFRAIL	Belgium	Brussels, Flanders, Wallony	No	1	559	80+	N/A	2008-2009	Health	NP	N/A	GFI Fried
Herr et al., 2015	Système d'Information sur la Perte d'Autonomie Fonctionnelle de la personne âgée	France	Nationally representative	Yes	1	2290	70+	83.3	2008-2010	Other	Prob	N/A	FI
Herr et al., 2018	Système d'Information sur la Perte d'Autonomie Fonctionnelle de la personne âgée	France	Nationally representative	Yes	1	2279	70+	83.3	2008-2010	Other	Prob	18.3%	Fried
Higueras-Fresnillo et al., 2018	Universidad Autónoma de Madrid cohort	Spain	Nationally representative	Yes	1	3896	60+	72.8	2000-2001	Complete	Prob	71%	FRAIL
Hoeck et al., 2012	Belgian Health Interview Survey	Belgium	Nationally representative	Yes	1	4777	65+	74.9	2001 & 2004-2001 & 2004	Complete	Prob		Fried
Hoogendijk et al., 2014	The Longitudinal Aging Study Amsterdam	Netherlands	Nationally representative	Yes	1	1205	65-88	75.2	1995-1996	Complete	Prob	72%	Fried
Hoogendijk et al., 2017	The Longitudinal Aging Study Amsterdam	Netherlands	Nationally representative	Yes	1	2085	60-89	73.19	1995-1996	Complete	Prob	40%	FI
Horibe et al., 2018	Horibe et al., 2018	Japan	Tokyo (Itabashi-ku)	No	1	789	65+	72.8	2013-2013	Complete	Prob	12%	Kihon checklist
Huang et al., 2020	Huang et al., 2020	Taiwan	Rui-Fang; Ping-Xi; Shuang-Xi; Gong-Liao	No	1	1014	65+	N/A	N/A	Health	Prob	N/A	Fried
Hubbard et al., 2009	English Longitudinal Study of Ageing	United Kingdom	Nationally representative	Yes	1	3055	65+	71.4	2004-2004	Complete	Prob	N/A	Fried FI
Hyde et al., 2010	The Health in Men Study	Australia	Western Australia (Perth)	No	1	3616	70-88	76.9	2001-2004	Complete	Prob	N/A	FRAIL
Iwasaki et al., 2018	Iwasaki et al 2018	Thailand	Nakhon Pathom (central area)	No	1	141	61+	71.9078	2015-2015	Health	Prob	36%	Fried
Jacobsen et al., 2019	Lolland-Falster Health Study	Denmark	Lolland-Falster	No	1	7327	50+	N/A	2016-2019	Complete	Prob	34.1%	Fried
Jauregui et al., 2014	Jauregui et al 2014	Argentina	Buenos Aires (1 high income area and 1 low income area)	No	1	448	50+	67	2010-2012	Complete	Prob	97%	Fried
Jotheeswaran et al., 2015	10/66 Dementia Research Group	China China Peru Venezuela India Cuba Peru Mexico Mexico Dominican Republic	Beijing (Daxin) Beijing (Xicheng) Canete Caracas Chennai Havana; Matanzas Lima Mexico city Morelos/Higalgo Santo Domingo	No	1	1002 989 507 1697 748 2637 1245 909 933 1706	65+	72.4 74.1 74.1 72.3 71.4 75.2 75.0 74.4 74.1 75.4	2003-2007	Complete	Prob	69%-98%	Strawbridge Fried
Jung et al., 2014	The Korean Longitudinal Study on Health and Aging	Republic of Korea	Gyeonggi-do (Seongnam)	No	1	621	65+	N/A	2005-2006	Complete	Prob	N/A	Fried KLoSHA FI SOF
Jung et al., 2016	Aging Study of Pyeongchang Rural Area study	Republic of Korea	Pyeongchang Rural Area	No	1	380	65+	N/A	2014-2014	Health	Prob	96%	Fried K-FRAIL
Júnior et al., 2014	Nutritional status, risk behaviors and health conditions of the elderly people of Lafaiete Coutinho-BA	Brazil	Bahia (Lafaiete Coutinho)	No	1	286	60+	74.8	2011-2011	Health	Prob	81%	Fried

Jürschik et al., 2012	FRALLE survey	Spain	Lleida	No	1	523	75+	N/A	2009-2010	Health	Prob	N/A	Fried
Kashikar & Nagarkar, 2016	Kashikar & Nagarkar, 2016	India	Pune (Warje-Karvenagar)	No	1	250	65+	73.9	2014-2015	Complete	Prob	N/A	Fried
Kehler et al., 2017	Canadian Health Measures Study	Canada	Atlantic Canada, Quebec, Ontario, the Prairies, and British Columbia	No	1	2722	50+	N/A	2007-2013	Complete	Prob	36%	Fried FI
Kelly et al., 2017	Kelly et al., 2017	Ireland	Dublin (north city)	No	1	1302	65+	82.1	2014-2015	Health	Prob	N/A	CFS
Kendhapedi et al., 2019	Kendhapedi et al., 2019	India	Southern India (4 villages)	No	1	408	60+	67.52	2019-2019	Complete	Prob	81%	Fried FI TFI
Kera et al., 2017	OTASYA KENSHIN	Japan	Tokyo (Itabashi-ku)	No	1	1380	66+	72.55	2011-2013	Complete	Prob	N/A	Kihon checklist
Keränen et al., 2017	GASEL Survey	Finland	northern region	No	1	794	65+	72.8	2014-2015	Complete	Prob	52.9%	SOF
Khamis et al., 2019	Khamis et al., 2019	Lebanon	Nabatieh	No	1	390	65+	76.1	2015-2015	Complete	Prob	98%	GFI
Kiely et al., 2009	MOBILIZE (Maintenance of Balance, Independent Living, Intellect, and Zest in the Elderly) Boston Study	United States of America	Massachusetts (Boston)	No	1	760	65+	78.13	2005-2008	Complete	Prob	N/A	Fried SOF
Kim & Park, 2014	Kim & Park, 2014	Republic of Korea	7 districs of a city labelled D	No	1	191	65+	N/A	2008-2008	Other	Prob	N/A	Fried
Kim et al., 2014	Hwang et al., 2010	Republic of Korea	Gyeonggi (Seoul)	No	1	486	65+	74.6	2009-2011	Other	Prob	N/A	Fried
Kim et al., 2017	The Otasha-Kenshin study	Japan	Tokyo (Itabashi)	No	1	1191	75+	78.4	2008-2008	Complete	Prob	11%	Fried
Kim et al., 2019a	Kim et al., 2019a	Japan	Tokyo (Itabashi-ku)	No	1	1191	70+	N/A	2016-2016	Complete	Prob	16%	Fried Cognitive frailty
Kim et al., 2019b	Kim et al., 2019b	Republic of Korea	Gyeongnam, 2 myeons	No	1	808	65+	74.58	2018-2018	Other	NP	N/A	Kaigo-Yobo
Kim et al., 2019c	Health and Retirement Study	United States of America	Nationally representative	Yes	1	3642	65+	75.5	2008-2008	Health	Prob	N/A	FI
Koponen et al., 2013	The Geriatric Multidisciplinary Strategy for the Good Care of the Elderly study	Finland	Kuopio	No	1	605	76+	81.9	2004-2005	Complete	Prob	N/A	Fried
Kucharska-Newton et al., 2017	Atherosclerosis Risk in Communities Study cohort	United States of America	Maryland, Minneapolis, Minnesota, Washington	No	1	6080	66–90	N/A	2011-2013	N/A	Prob		Fried
Kulminski et al., 2008	Cardiovascular Health Study	United States of America	4 U.S. communities: Sacramento County, California; Washington County, Maryland; Forsyth County, North Carolina, and Allegheny County (Pittsburgh), Pennsylvania	No	1	4721	65+	N/A	1989-1999	Health	Prob	48%	FI

Kwan et al., 2015	Hong Kong Centenarian Study	Hong Kong	Hong Kong	No	1	124	95+	97.7	2011-2011	Health	Prob	42%	FI CMF
Lahousse et al., 2014	The Rotterdam Study	Netherlands	Rotterdam	No	1	2833	55+	75.1	2009-2012	Complete	Prob	53%	Fried
Langholz et al., 2018	The Tromsø Study	Norway	Tromsø	No	1	712	70+	77.4	2001-2002	Complete	Prob	26%	Fried
Le Cossec et al., 2016	Enquête Handicap Santé – Ménages The health, health care and insurance survey	France	Nationally representative	Yes	2	11089 4236	55+ 56+	68.5 69.6	2008-2008 2012-2012	Complete Health	Prob	62% 42%	Fried
Lee et al., 2014	Lee et al., 2014	Hong Kong	Hong Kong	No	1	3427	67+	74.0	2003-2005	Other	NP	N/A	Fried
Lee et al., 2018	Living Profiles of Older People Survey	Republic of Korea	Nationally representative	Yes	1	11266	65+	72.9	2008-2008	Complete	Prob	74.3%	Fried
León-Muñoz et al., 2014	Estudio de Nutrición y Riesgo Cardiovascular	Spain	Nationally representative	Yes	1	1894	60+	68.5	2008-2010	Complete	Prob	N/A	Fried
Lewis et al., 2018	Lewis et al 2018	Tanzania	Hai (demographic surveillance site)	No	1	196	60+	74.82	2017-2017	Complete	Prob	N/A	Fried B-FIT
Lin et al., 2015	Lin et al., 2015	Taiwan	Taichung	No	1	1036	65+	74	2009-2009	Complete	Prob	38%	Fried
Lin et al., 2016	Social Environment and Biomarkers of Aging Study	Taiwan	Nationally representative	Yes	1	1245	53+	66.0	2006-2006	Complete	Prob	N/A	FI
Liu et al., 2015	I-Lan Longitudinal Aging Study	Taiwan	Yilan	No	1	1839	50+	63.9	2011-2013	Complete	Prob	N/A	Fried
Liu et al., 2016	The Framingham Offspring Study	United States of America	Massachusetts (Framingham)	No	1	1919	65+	71	2005-2008	Other	Prob	N/A	Fried
Liu et al., 2018	The Chinese Longitudinal Health and Longevity Study	China	Nationally representative (22/31 Provinces)	Yes	1	11165	65+	82.6	2002-2002	N/A	NP	89%	FI
Llano et al., 2017	Llano et al., 2017	Brazil	Rio Grande do Sul (Pelotas)	No	1	820	60+	N/A	2014-2014	Health	Prob	98%	Fried
Lo et al., 2017	the Nutrition and Health Survey in Taiwan	Taiwan	Nationally representative	Yes	1	770	65+	73.6	2014-2015	Complete	Prob	N/A	Fried
Lourenço et al., 2019	Study of Frailty in Elderly Brazilian Individuals	Brazil	Minas Gerais (Juiz de Fora)	No	1	427	65+	74.4	2009-2010	Complete	Prob	98%	Fried
Ma et al., 2016	Beijing Longitudinal Study of Aging	China	Beijing	No	1	1808	60+	74.51	2004-2004	Complete	Prob	80%	FI
Ma et al., 2018	China Comprehensive Geriatric Assessment Study	China	Beijing, Changsha, Shanghai, Xi'an, Chongqingand and Chengdu, and Harbin	No	1	5844	60+	70.92	2011-2012	Complete	Prob	N/A	FI
Ma et al., 2019	Beijing Longitudinal Study of Aging	China	Beijing	No	1	1724	60+	74.19	2004-2004	Complete	Prob	77%	FSQ
Manfredi et al., 2019	The Survey of Health, Ageing and Retirement in Europe	Austria Belgium Croatia Czech Republic Denmark Estonia France Germany Greece Israel Italy Luxembourg Poland	Nationally representative	Yes	18	2901 5333 2210 4427 3543 4856 3630 4094 4349 1579 4508 1427 1628	50+	N/A	2015-2015	Complete	Prob	42.40%	Fried

Commented [MO1]: Comprehensive model of frailty. Excluded tool / no prevalence data.

		Portugal Slovenia Spain Sweden Switzerland				1412 3834 4698 3682 2705							
Mello et al., 2017	Survey on Conditions of Health and Use of Health Services in the Territory of Manguinhos	Brazil	Rio de Janeiro (favelas)	No	1	137	60+	70.2	2012-2013	Complete	Prob	N/A	Fried
Metzelthin et al., 2010	Metzelthin et al	Netherlands	Limburg and Utrecht	No	1	532	70+	77.2	2008-2009	Health	Prob	78%	TFI GFI SPQ
Mohd Hamidin et al., 2018	Hamidin et al 2018	Malaysia	Terengganu	No	1	279	60+	73.32	2013-2013	Complete	Prob	93%	Fried
Mohr et al., 2007	Massachusetts Male Aging study	United States of America	Massachusetts (Boston)	No	1	601	50-86	N/A	2002-2004	Complete	Prob	25%	Fried
Moreira et al., 2013	Frailty in Brazilian Older People Study/Fragilidade em Idosos Brasileiros	Brazil	Rio de Janeiro	No	1	754	65+	76.6	2009-2010	Health	Prob	N/A	Fried
Moreno-Tamayo et al., 2017	the Rural Frailty Study	Mexico	rural areas (<2500 residents)	No	1	591	70+	76.3	2009-2009	Other	Prob	N/A	Fried
Mousavi sisi et al., 2019	Sisi et al., 2019	Iran	East Azerbaijan (Shabestar)	No	1	555	60+	71.53	2018-2019	Health	Prob	N/A	TFI
Murayama et al., 2012	The Hatoyama Cohort Study	Japan	Saitama (Hatoyama)	No	1	742	65+	71.9	2010-2010	Complete	Prob	27.5%	Kaigo-Yobo Fried
Nguyen et al., 2019	Nguyen et al., 2019	Vietnam	Hanoi (Soc Son)	No	1	512	60+	72.8	2017-2017	Complete	Prob	96.6%	Fried
Nishi et al., 2012	Nishi et al., 2012	Japan	Gunma (Kusatsu town) Yoita-cho	No	2	427 547	70+	N/A	2005-2005	Complete	Prob	96.2%	Kaigo-Yobo
Ntanasi et al., 2018	Hellenic Longitudinal Investigation of Aging and Diet	Greece	Larissa and Marousi	No	1	1867	65+	N/A	2009-2015	Complete	Prob	N/A	Fried FI TFI
O'Connell et al., 2015	The Irish Longitudinal Study on Ageing	Ireland	Nationally representative	Yes	1	5700	50+	N/A	2009-2011	Complete	Prob	62.0%	Fried
O'Donovan et al., 2019	The Survey of Health, Ageing and Retirement in Europe	Ireland	Nationally representative	Yes	1	319	65+	73.64	2007-2007	Complete	Prob	44%	Fried FI
Ocampo-Chaparro et al., 2013	Ocampo-Chaparro et al., 2013	Colombia	Cali	No	1	115	60+	N/A	2009-2009	Complete	Prob	31.6%	Fried
Ocampo-Chaparro et al., 2019	SABE Colombia	Colombia	Nationally representative	Yes	1	4474	60+	69.3	2014-2015	Complete	Prob	70%	Fried
Olaroiu et al., 2014	Olaroiu et al	Romania	Braila	No	1	211	65+	74.9	2013-2013	Health	Prob	98%	GFI
Ottenbacher et al., 2009	the Hispanic Established Populations for Epidemiologic Studies of the Elderly	United States of America	Arizona, California, Colorado, New Mexico, Texas	No	1	2049	65+	74.43	1995-1996	Complete	Prob	N/A	Fried
Ovares et al., 2018	Costa Rican Study of Longevity and Healthy Ageing	Costa Rica	Nationally representative	Yes	1	2091	60+	70	2004-2006	Complete	Prob	N/A	Fried
Palomo et al., 2019	Palomo et al., 2019	Chile	Maule	No	1	1205	65+	73	2016-2017		Prob	N/A	Fried
Paulson & Lichtenberg, 2015	Health and Retirement Study	United States of America	Nationally representative	Yes	1	8844	65+	74.5	1998-1998	Complete	Prob	N/A	Fried
Payne et al., 2017	Health and Aging in Africa: Longitudinal Studies of an	South Africa	Agincourt	No	1	3681	50+	N/A	2013-2013	Complete	Prob	71.4%	Fried

	INDEPTH Community cohort												
Pengpid & Peltzer, 2019	Indonesia Family Life Survey	Indonesia	Nationally representative (13/27 Provinces)	Yes	1	2630	60+	N/A	2014-2015	Complete	Prob	>90%	Fried
Pérez-Zepeda et al., 2016	Mexican Survey on Nutrition and Health (Encuesta Nacional de Salud y Nutrición)	Mexico	Nationally representative	Yes	1	7108	60+	70.7	2012-2012	Complete	Prob	N/A	FI
Poli et al., 2017	Poli et al., 2017	Italy	Genoa	No	1	542	65+	75.2	2013-2013	Complete	Prob	27.2%	FRAIL
Pradhananga et al., 2019	AT Medics	United Kingdom	London	No	1	10881	65+	N/A	2018-2018	Health	Prob	N/A	FI
Qiao et al., 2018	Dong et al 2018	China	Shandong (Jinan)	No	1	1204	60+	69.46	2016-2016	Other	NP	N/A	FI CFAI
Ramsay et al., 2015	British Regional Heart Study	United Kingdom	Nationally representative	Yes	1	1622	71-92	79	2010-2012	Complete	Prob	52%	Fried
Ravindrarajah et al., 2017	Clinical Practice Research Datalink	United Kingdom	Nationally representative	Yes	1	144403	80+	N/A	2001-2009	Health	Prob	N/A	FI
Rivas-Ruiz et al., 2019	Rivas-Ruiz et al., 2019	Spain	Costa del Sol Gipuzkoa	No	2	432 423	70+	76.2 80.1	2015-2016	Health	Prob	N/A	Fried
Rodrigues et al., 2018	10/66 Dementia Research Group	China China Cuba Dominican Republic India India Mexico Mexico Peru Peru Puerto Rico Venezuela	Beijing (Daxin) Beijing (Xicheng) Havana; Matanzas Santo Domingo Chennai Vellore Mexico City Morelos/Higalgo Canete Lima San Juan Caracas	No	12	998 1160 2935 2005 986 999 998 992 552 1378 1935 1928	65+	72.4 73.9 75.1 75.3 71.3 72.6 74.5 74.1 74.2 75 76.3 72.3	2004-2006	Complete	Prob	N/A	Fried
Roppolo et al., 2017	Roppolo et al., 2017	Italy	Piedmont	No	1	594	65+	73.6	2016-2016	Other	NP	55%	Fried Cognitive frailty
Ruiz-Arregui et al., 2013	The Coyoacan Cohort	Mexico	Mexico City (Coyoacan)	No	1	1124	70+	79.5	2008-2008	Health	Prob	88.1%	Fried
Sabbour et al., 2018	Sabbour et al., 2018	Egypt	urban areas	No	1	175	60+	66.3	2017-2017	Other	NP	>80%	Fried
Salminen et al., 2019	Salminen et al., 2019	Finland	Lieto	No	1	1152	64+	72.7	1998-1999	Complete	Prob	76%	FRAIL FI PRISMA-7
Samper-Ternent et al., 2017	Salud Bienestar y Envejecimiento'' Bogotá´ Study	Colombia	Bogotá	No	1	1442	60+	70.7	2012-2012	Complete	Prob	81.9%	Fried
Sánchez-García et al., 2014	Study on Aging and Dementia in Mexico	Mexico	Mexico City	No	1	1933	60+	70.14	2009-2010	Health	Prob	N/A	Fried
Santiago et al., 2013	Santiago et al 2013	Brazil	Minas Gerais (Juiz de Fora)	No	1	219	60+	70.5	2012-2012	Other	NP	100%	TFI
Santiago et al., 2018	Santiago et al., 2018	Brazil	Rio de Janeiro	No	1	640	60+	70.5	2013-2013	Health	NP	N/A	TFI
Santos et al., 2015	PET-Jequié Health: Identifying the health-disease process in a population affiliated with the Family Health Units	Brazil	Pernambuco (Pau Ferro)	No	1	136	60+	N/A	2013-2013	Health	Prob	N/A	Fried

Santos-Eggimann et al., 2009	The Survey of Health, Ageing and Retirement in Europe	Netherlands	Nationally representative	Yes	1	2091	50+	N/A	2004-2004	Complete	Prob	45.5%	Fried
Satake et al., 2017	Satake et al 2017	Japan	Aichi (Higashiura)	No	1	5542	65+	72.3	2010-2010	Complete	Prob	68.5%	Kihon checklist
Sathasivam et al., 2015	Sathasivam et al., 2015	Malaysia	National but only urban districts	No	1	789	60+	69.6	N/A	Complete	Prob	75.9%	FI
Segal et al., 2017	The National Health and Aging Trends Study	United States of America	Nationally representative	Yes	1	4582	65+	75.2	2011-2011	Health	Prob		Fried FI
Serra-Prat et al., 2016	Serra-Prat et al., 2016	Spain	Barcelona; Mataró	No	1	324	75+	80.1	2013-2016	Health	Prob	51%	Fried
Shi et al., 2011	Beijing Longitudinal Study of Aging	China	Beijing	No	1	3257	55+	69.8	1992-1992	Complete	Prob	91.2%	FI
Shimada et al., 2016	National Center for Geriatrics and Gerontology–Study of Geriatric Syndromes database	Japan	Aichi (Nagoya, Obu)	No	1	8864	65+	73.4	2011-2013	N/A	Prob	N/A	Fried Cognitive frailty
Shinkai et al., 2013	Shinkai et al., 2013	Japan	Gunma (Kusatsu town)	No	1	526	65+	N/A	2007-2007	Complete	Prob	88%	Fried Kaigo-Yobo
Shirooka et al., 2017	Shirooka et al., 2017	Japan	National but not representative	No	1	483	65+	73.34	2015-2015	Other	NP	N/A	Fried
Shmuel et al., 2019	Johnston County Osteoarthritis Project	United States of America	North Carolina (Johnston County)	No	1	1697	50+	69	1999-2004	Complete	Prob	N/A	Fried
Silveira et al., 2015	Silveira et al., 2015	Brazil	Minas Gerais (Uberaba)	No	1	54	65+	73	2011-2011	Health	Prob	82%	Fried
Siriwardhana et al., 2019	Siriwardhana et al., 2019	Sri Lanka	Kegalle district	No	1	746	60+	N/A	2016-2016	Complete	Prob	99.5%	Fried
Sleight & Holtzer, 2017	Central Control of Mobility in Aging	United States of America	New York (Westchester County lower)	No	1	457	65+	76.50	2011-2014	Complete	Prob	N/A	Fried
Song et al., 2010	National Population and Health Survey	Canada	Nationally representative	Yes	1	2740	65+	74	1994-1995	Complete	Prob	N/A	FI
Sousa-Santos et al., 2018	Nutrition UP 65	Portugal	Nationally representative	Yes	1	1457	65+	74.3	2015-2016	Complete	Prob	N/A	Fried
Srinonprasert et al., 2018	Thai National Health Examination Survey	Thailand	Nationally representative	Yes	1	8195	60+	69.2	2009-2009	Complete	Prob	N/A	FI
St John et al., 2013	Manitoba Study of Health and Aging	Canada	Manitoba	No	1	1705	65+	77.5	1991-1991	Health	Prob	71%	CFS FI
Stenholm et al., 2014	Health 2000 Survey in 2000–2001 (follow-up to Mini-Finland Health Examination Survey in 1978–1980)	Finland	Lieto	No	1	1119	52+	N/A	2000-2001	Complete	Prob	N/A	Fried
Sternberg et al., 2014	Sternberg et al., 2014	Israel	Jerusalem	No	1	235	70+	77.6	2008-2009	Health	Prob	N/A	Fried VES-13
Strawbridge et al., 1998	Alameda County Study	United States of America	California (Alameda)	No	1	574	65+	74	1994-1994	Complete	Prob	85%-97%	Strawbridge
Theou et al., 2012	Canadian study of Health and Ageing	Canada	Nationally representative	Yes	1	2305	70+	84.6	1996-1997	Complete	Prob	N/A	Fried FI
Theou et al., 2013	The Survey of Health, Ageing and Retirement in Europe	Austria Belgium Czech Republic Denmark France Germany Greece Ireland Israel	Nationally representative	Yes	16	1849 3699 2749 1615 3052 2942 2680 1107 2498	50+	65.2 65.9 64 64.2 65.5 65.1 65 64.7 65.6	2004-2004 2004-2005 2006-2007 2004-2004 2004-2005 2004-2004 2004-2005 2007-2007 2005-2006	Complete	Prob	N/A	FI

Commented [MO2]: Excluded since Davis et al., 2011 is more comprehensive.

		Italy Netherlands Poland Spain Sweden Switzerland				2508 2870 2425 2354 2997 961		65.6 63.9 64.1 65.7 65.4 64.8	2004-2004 2004-2004 2006-2007 2004-2004 2004-2005 2004-2004				
Theou et al., 2015	The Irish Longitudinal Study on Ageing	Ireland	Nationally representative	Yes	1	4961	50+	61.9	2010-2012	Complete	Prob	N/A	FI (X3)
Thompson et al., 2018a	North West Adelaide Health Study	Australia	South Australia (Adelaide NW)	No	1	909	65+	74.4	2004-2006	Complete	Prob	N/A	FI ~~FP~~Fried
Thompson et al., 2018b	Australian Diabetes and Obesity Lifestyle Study Blue Mountains Eye Study North West Adelaide Health Study The Australian Longitudinal Study of Women's Health Old Cohort	Australia	Nationally representative New South Wales South Australia (Adelaide NW) New South Wales	Yes No No No	4	1634 95 944 944	65+ 65+ 65+ 77-85+	73.0 76.3 74.4 80.8	2004-2005 2002-2004 2004-2006 2002-2004	Complete Complete Complete Health	Prob Prob Prob Prob		Fried
Tian et al., 2019	Dong et al 2018	China	Shandong (Jinan)	No	1	1202	60+	69.5	2016-2016	Other	NP	N/A	GFI
Tribess et al., 2012	Population Study of Physical Activity and Aging	Brazil	Minas Gerais (Uberaba)	No	1	622	60+	71.08	2010-2010	Complete	Prob	96.1%	Fried
Tyrovolas et al., 2018	COURAGE	Finland Poland Spain	Nationally representative	Yes	1	1452 2910 3625	50+	N/A	2010-2010	Complete	Prob	65.6% 66.5% 69.9%	FI
Vaingankar et al., 2017	Well-being of the Singapore Elderly study	Singapore	Nationally representative	Yes	1	2102	60+	69	2013-2013	Complete	Prob	54%	Fried
van Assen et al., 2016	Public Health Services in the Netherlands questionnaire	Netherlands	Amsterdam, Noord-Brabant, Zeeland	No	1	47321	65+	73.37	2012-2012	Complete	Prob	58.5%	TFI
Varela Pinedo et al., 2009	Varela-Pinedo et al., 2010	Peru	Lima	No	1	246	61+	69.9	2007-2007	N/A	Prob	N/A	Fried
Veronese et al., 2017	Progetto Veneto Anziani	Italy	Veneto	No	1	2571	65+	74.1	1995-1997	Health	Prob	N/A	Fried
Verver et al., 2019	Home Sweet Home	Netherlands	North-Holland	No	1	1768	65+	78.7	2011-2012	Health	Prob	35.1%	TFI
Wang et al., 2014	Wang et al., 2014	China	Hunan province (Changsha city and surrounding area)	No	1	516	70+	76.5	2012-2013	N/A	N/A	N/A	Fried
Wang et al., 2020	The Diet and Healthy Aging (DaHA) Study	Singapore	Jurong	No	1	895	60+	67.9	2011-2017	Complete	Prob	N/A	Fried
Watanabe et al., 2017	Obu Study of Health Promotion for the Elderly	Japan	Aichi (Obu)	No	1	4720	65+	72.1	2011-2012	Complete	NP	N/A	Fried
Watts et al., 2019	The English Longitudinal Study of Aging	United Kingdom	Nationally representative	Yes	1	1342	71+	77.81 ~~N/A~~	2008-2008	Complete	Prob	N/A	Fried FI
Widagdo et al., 2015	Australian Longitudinal Study of Ageing	Australia	South Australia (Adelaide)	No	1	1566	65+	81.6	1992-1992	Complete	Prob	N/A	Fried Simplified FP FI Prognostic frailty score
Witham et al., 2019	Centre de Recherche en Santé de Nouna	Burkina Faso	Nouna	No	1	1620	50+	N/A	2018-2018	Complete	Prob	69.4%	Fried
Wong et al., 2010	Montreal Unmet Needs Study	Canada	Quebec (Montreal)	No	1	740	75+	79.6	2001-2002	Other	Prob	57%	Fried
Woo et al., 2012	Osteoporotic Fractures in Men (MrOs) and Women (MsOs) (Hong Kong) Study	Hong Kong	Hong Kong	No	1	4000	65+	72.49	2001-2003	Other	NP	N/A	Fried FRAIL Hubbard

													FI
Woo et al., 2015a	Woo et al., 2015a	Hong Kong	Sha Tin, Tai Po, and North	No	1	816	65+	N/A	2014-2014	Other	NP	N/A	FRAIL
Wu et al., 2017	China Health and Retirement Longitudinal Study	China	Nationally representative	Yes	1	5301	60+	67.85	2011-2012	Complete	Prob	N/A	Fried
Xi & Guo, 2014	Xi & Guo, 2014	China	Beijing	No	1	683	60+	74.14	2013-2013	N/A	NP	N/A	Fried
Yamada et al., 2017	Yamada et al., 2017	Japan	Kyoto	No	1	3640	65+	77.1	2012-2012	Complete	Prob	85.7%	Kihon checklist
Yamaguchi et al., 2018	Kyoto-Kameoka Study	Japan	Kyoto (Kameoka city)	No	1	8174	65+	73.6	2011-2011	Complete	N/A	68.2%	Kihon checklist
Ye et al., 2020	Ye et al., 2020	China	Shanghai	No	1	3965	60+	69.38	2015-2015	Complete	Prob	N/A	FI
Yin et al., 2018	China Health and Retirement Longitudinal Study	China	Nationally representative	Yes	1	5834	60+	67.62	2011-2012	Complete	Prob	80.5%	FI
Yoshimura et al., 2018	Research on Osteoarthritis/Osteoporosis Against Disability	Japan	Tokyo (Itabashi), Wakayama (a mountainous region in Hidakagawa), Wakayama (a coastal region in Taiji)	No	1	1083	60+	72.1	2008-2010	N/A	N/A	N/A	Fried
Yu et al., 2017	Osteoporotic Fractures in Men (MrOs) and Women (MsOs) (Hong Kong) Study Taiwan Longitudinal Study on Aging	Hong Kong Taiwan	Hong Kong Nationally representative	No Yes	1	4000 2392	65+	72.49 74.81	2001-2003 2003-2003	Other Complete	NP NP	N/A	FI
Zhang et al., 2019	Survey of the Shandong Elderly Family Health Service	China	Shandong	No	1	7070	60+	69.81	2017-2017	Complete	Prob	N/A	FI
Zhang et al., 2020	Zhang et al., 2020	China	Tianjin	No	1	513	60+	69.6	2017-2018	Other	NP	91.6%	FI
Zheng et al., 2016	Beijing Longitudinal Study of Aging II	China	Beijing	No	1	10039	55+	70.5	2009-2009	Complete	Prob	83%	FI
Zucchelli et al., 2019	Swedish National Study on Aging and Care in Kungsholmen	Sweden	Stockholm	No	1	3363	60+	74.7	2001-?	Complete	Prob	73.3%	Fried FI
Zúñiga et al., 2019	Zúñiga et al., 2019	Chile	Santiago	No	1	538	60+	72.2	N/A	Health	Prob	N/A	TFI
Zuppa et al., 2019	AMPAL project	Brazil	Rio Grande do Sul (Porto Alegre)	No	1	194	90+	93.02	2016-2016	Complete	Prob	N/A	Fried

B-FIT: Brief Frailty Instrument for Tanzania; CFAI: Comprehensive Frailty Assessment Instrument; CFS: Clinical Frailty Scale; CGA: Comprehensive Geriatric Assessment; EFS: Edmonton Frail Scale; FI: Frailty Index; FRAIL: Fatigue, Resistance, Ambulation, Illnesses, & Loss of Weight; FSQ: Frailty Screening Questionnaire; GFI: Groningen Frailty Indicator; ISAR: Identification of Seniors at Risk; TFI: Tilburg Frailty Indicator; SOF: Study of Osteoporotic Fracture (SOF) Criteria for Frailty; SPQ: Sherbrooke Postal Questionnaire; VES-13: Vulnerable Elders Survey
N/A = Not available - refers to data not being available in the paper publication or on request from the corresponding author

eTable 3. Datasets including frailty and pre-frailty prevalence estimates with 95% confidence intervals (CI) by location (country, United Nations (UN) economic areas and continent) for physical frailty and deficit accumulation (frailty index) models for individuals aged ≥50.

Location	Frailty				Pre-frailty			
UN Area	Datasets (total sample size)		Prevalence of Frailty (95% CI)		Datasets (total sample size)		Prevalence of pre-frailty (95% CI)	
(country)	Physical Frailty	Frailty Index	Physical Frailty	Frailty Index	Physical Frailty	Frailty Index	Physical Frailty	Frailty Index
Africa	**5 (5760)**	**2 (8137)**	**22% (10%-37%)**	**-**	**4 (5585)**	**0**	**47% (42%-53%)**	**-**
Northern Africa	2 (263)	0	-	-	1 (88)	0	-	-
Egypt	2 (263)	0	52% (46%-58%)	-	1 (88)	0	27% (18%-38%)	-
Sub-Saharan Africa	**3 (5497)**	**2 (8137)**	**11% (5%-18%)**	**38% (37%-39%)**	**3 (5497)**	**0**	**51% (47%-55%)**	**-**
Burkina Faso	1 (1620)	0	12% (10%-14%)	-	1 (1620)	0	53% (51%-56%)	-
Ghana	0	1 (4305)	-	38% (26%-39%)	0	0	-	-
South Africa	1 (3681)	1 (3832)	6% (5%-6%)	38% (37%-40%)	1 (3681)	0	49% (47%-50%)	-
Tanzania	1 (196)	0	17% (12%-23%)	-	1 (196)	0	51% (43%-58%)	-
Americas	61 (114311)	11 (50723)	**17% (15%-19%)**	**23% (15%-32%)**	47 (88589)	7 (35232)	**50% (47%-53%)**	**50% (41%-60%)**
Latin America and the Caribbean	45 (64165)	3 (13503)	**19% (17%-22%)**	**30% (28%-31%)**	32 (41165)	2 (11190)	**52% (49%-56%)**	**62% (61%-63%)**
Argentina	1 (448)	0	24% (20%-29%)	-	0	0	-	-
Barbados	1 (1446)	0	27% (24%-29%)	-	1 (1446)	0	54% (52%-57%)	-
Brazil	21 (24833)	0	22% (16%-28%)	-	17 (15004)	0	52% (48%-55%)	-
Chile	2 (3303)	0	17% (16%-19%)	-	2 (3303)	0	55% (53%-57%)	-
Colombia	4 (7909)	0	15% (10%-20%)	-	4 (7909)	0	59% (52%-66%)	-
Costa Rica	1 (2091)	0	12% (10%-13%)	-	1 (2091)	0	66% (63%-68%)	-
Cuba	2 (4661)	0	23% (22%-24%)	-	1 (1726)	0	52% (49%-54%)	-
Dominican Republic	1 (2005)	0	21% (20%-23%)	-	0	0	-	-
Ecuador*	0	0	-	-	0	0	-	-
Mexico	7 (11430)	3 (13503)	17% (11%-24%)	30% (28%-31%)	5 (9440)	2 (11190)	44% (38%-49%)	62% (61%-63%)
Peru	3 (2176)	0	15% (9%-22%)	-	1 (246)	0	65% (58%-71%)	-
Puerto Rico	1 (1935)	0	15% (14%-17%)	-	0	0	-	-
Venezuela	1 (1928)	0	13% (11%-14%)	-	0	0	-	-
Northern America	16 (50146)	8 (37220)	**10% (8%-13%)**	**21% (11%-33%)**	15 (47424)	5 (24042)	**46% (40%-51%)**	**46% (34%-58%)**
Canada	4 (7410)	3 (7910)	12% (7%-18%)	17% (16%-25%)	3 (4688)	2 (4035)	443% (35%-50%)	43% (42%-45%)
United States of America	12 (42736)	5 (29310)	10% (7%-13%)	23% (9%-41%)	12 (42736)	3 (20007)	46% (40%-53%)	45% (30%-61%)
Asia	47 (86997)	22 (90192)	**12% (11%-13%)**	**25% (19%-32%)**	38 (71846)	11 (40478)	**47% (44%-51%)**	**49% (38%-60%)**
Eastern Asia	28 (67042)	16 (71262)	**10% (9%-11%)**	**23% (17%-29%)**	22 (54155)	10 (39689)	**45% (41%-49%)**	**47% (35%-59%)**
China	6 (11082)	11 (62833)	10% (7%-13%)	22% (15%-19%)	4 (8924)	6 (32505)	39% (27%-52%)	44% (28%-61%)
Hong Kong	3 (8243)	2 (4124)	9% (6%-11%)	13% (12%-14%)	3 (8243)	2 (4124)	50% (48%-52%)	62% (60%-63%)
Japan	7 (18432)	0	8% (6%-9%)	-	4 (7894)	0	36% (17%-58%)	-
Republic of Korea	6 (21893)	1 (668)	13% (10%-16%)	16% (13%-19%)	5 (21702)	1 (668)	52% (48%-56%)	43% (39%-47%)
Taiwan	6 (7392)	2 (3637)	10% (7-14%)	35% (34%-37%)	6 (7392)	1 (2392)	47% (39%-55%)	42% (40%-44%)
South-Eastern Asia	9 (11183)	2 (8984)	**10% (7%-14%)**	**20% (19%-21%)**	8 (10904)	1 (789)	**54% (45%-62%)**	**-**

Indonesia	1 (2630)	0	8% (7%-9%)	-	1 (2630)	0	62% (60%-63%)	-
Malaysia	3 (3076)	1 (789)	12% (8%-16%)	6% (4%-8%)	2 (2797)	1 (789)	59% (57%-61%)	68% (64%-71%)
Singapore	3 (4824)	0	5% (2%-10%)	-	3 (4824)	0	43% (32%-53%)	-
Thailand	1 (141)	1 (8195)	23% (16%-31%)	22% (21%-23%)	1 (141)	0	55% (47%-64%)	-
Vietnam	1 (512)	0	22% (18%-26%)	-	1 (512)	0	66% (61%-70%)	-
Southern Asia	5 (3389)	3 (7448)	**20% (15%-24%)**	**48% (31%-66%)**	3 (1404)	0	**54% (45%-62%)**	**-**
India	4 (2643)	2 (6968)	21% (15%-27%)	57% (56%-58%)	2 (658)	0	55% (52%-59%)	-
Iran	0	1 (480)	-	28% (24%-32%)	0	0	-	-
Sri Lanka	1 (746)	0	15% (13%-18%)	-	1 (746)	0	48% (45%-52%)	-
Western Asia	5 (5383)	1 (2498)	**11% (3%-24%)**	**-**	5 (5383)	0	**43% (32%-54%)**	**-**
Israel	2 (3198)	1 (2498)	6% (5%-6%)	31% (29%-33%)	2 (3198)	0	46% (44%-48%)	-
Lebanon	1 (1120)	0	36% (34%-39%)	-	1 (1120)	0	30% (28%-33%)	-
Turkey	2 (1065)	0	9% (8%-11%)	-	2 (1065)	0	46% (43%-49%)	-
Europe	60 (148253)	32 (1174208)	**8% (7%-10%)**	**22% (20%-24%)**	53 (134897)	9 (1109919)	**42% (40%-44%)**	**49% (46%-52%)**
Eastern Europe	3 (6659)	4 (12022)	**7% (2%-16%)**	**32% (24%-41%)**	3 (6659)	0	**47% (35%-59%)**	**-**
Czech Republic	1 (4427)	1 (2749)	3% (3%-4%)	21% (19%-22%)	1 (4427)	0	37% (36%-39%)	-
Poland	1 (1628)	2 (5335)	3% (2%-4%)	39% (37%-4050	1 (1628)	0	41% (38%-43%)	-
Romania*	0	0	-	-	0	0	-	-
Russian Federation	1 (604)	1 (3938)	20% (17%-24%)	31% (29%-32%)	1 (604)	0	64% (60%-68%)	-
Northern Europe	16 (42080)	12 (1104788)	**8% (5%-11%)**	**17% (15%-20%)**	14 (34611)	5 (1080433)	**41% (37%-45%)**	**40% (38%-42%)**
Denmark	2 (10870)	1 (1615)	4% (4%-5%)	16% (14%-18%)	2 (10870)	0	43% (42%-44%)	-
Estonia	1 (4856)	0	2% (2%-3%)	-	1 (4856)	0	49% (48%-51%)	-
Finland	4 (3670)	2 (2578)	6% (3%-10%)	24% (23%-26%)	4 (3670)	1 (1126)	35% (25%-44%)	57% (54%-60%)
Iceland	1 (4414)	0	11% (10%-12%)	-	0	0	-	-
Ireland	2 (6019)	2 (6068)	4% (4%-5%)	12% (11%-12%)	2 (6019)	0	32% (31%-33%)	-
Norway	1 (712)	0	4% (3%-5%)	-	1 (712)	0	38% (34%-42%)	-
Sweden	2 (7045)	2 (6360)	8% (7%-9%)	11% (10%-12%)	2 (7045)	1 (3363)	42% (40%-43%)	37% (35%-38%)
United Kingdom	3 (4494)	5 (1088167)	19% (6%-37%)	20% (16%-25%)	2 (1439)	3 (1075944)	56% (53%-58%)	37% (35%-40%)
Southern Europe	24 (40816)	6 (13001)	**10% (8%-13%)**	**32% (25%-39%)**	20 (35496)	1 (1740)	**45% (41%-48%)**	**-**
Croatia	1 (2210)	0	3% (2%-4%)	**-**	1 (2210)	0	41% (39%-43%)	**-**
Greece	2 (6216)	2 (4420)	4% (4%-5%)	18% (16%-19%)	2 (6216)	1 (1740)	42% (41%-43%)	70% (68%-72%)
Italy	6 (9904)	2 (2602)	9% (6%-12%)	28% (26%-30%)	5 (7333)	0	43% (35%-51%)	-
Portugal	4 (3257)	0	27% (12%-46%)	-	4 (3257)	0	48% (41%-55%)	-
Slovenia	1 (3834)	0	2% (1%-2%)	-	1 (3834)	0	29% (28%-31%)	-
Spain	10 (15395)	2 (5979)	10% (7%-15%)	26% (24%-27%)	7 (12646)	0	47% (40%-55%)	-
Western Europe	17 (58698)	10 (44397)	**7% (3%-11%)**	**19% (15%-23%)**	16 (58131)	3 (27746)	**39% (36%-42%)**	**55% (52%-58%)**
Austria	1 (2901)	1 (1849)	2% (1%-2%)	18% (16%-19%)	1 (2901)	0	29% (27%-31%)	-
Belgium	3 (10677)	1 (3699)	7% (3%-11%)	20% (19%-21%)	2 (10110)	0	38% (37%-39%)	-
France	6 (27835)	3 (6620)	11% (4%-22%)	21% (13%-29%)	6 (27835)	1 (2290)	42% (39%-46%)	53% (51%-55%)
Germany	1 (4094)	1 (2942)	2% (2%-2%)	19% (18%-21%)	1 (4094)	0	36% (35%-38%)	-
Luxemburg	1 (1427)	0	2% (1%-2%)	-	1 (1427)	0	38% (36%-41%)	-

Netherlands	3 (6129)	3 (28326)	8% (5%-10%)	22% (13%-32%)	3 (6129)	2 (25456)	43% (32%-54%)	55% (54%-55%)
Switzerland	2 (5635)	1 (961)	5% (4%-5%)	9% (7%-10%)	2 (5635)	0	32% (31%-34%)	-
Oceania	5 (5117)	4 (11704)	**12% (8%-16%)**	**31% (20%-42%)**	5 (5117)	2 (8116)	**49% (41%-56%)**	**51% (50%-52%)**
Australia and New Zealand	5 (5117)	4 (11704)	**12% (8%-16%)**	**31% (20%-42%)**	5 (5117)	2 (8116)	**49% (41%-56%)**	**51% (50%-52%)**
Australia	5 (5117)	4 (11704)	12% (8%-16%)	31%(20%-42%)	5 (5117)	2 (8116)	49% (41%-56%)	51% (50%-52%)
Total	178 (360438)	71 (1334964)	**11% (10%-12%)**	**24% (22%-26%)**	147 (306034)	29 (1193745)	**46% (45%-48%)**	**49% (46%-52%)**

*Data available for other frailty scales but not physical frailty or a frailty index.

eTable 4: Frailty and pre-frailty prevalence estimates by sampling approach (probability vs non-probability) and sampling frame for physical frailty and deficit accumulation (frailty index) models for individuals aged ≥50.

Sub-analysis	All Scales		Physical Frailty		Frailty Index	
Sampling	Number of data points (sample size)	Prevalence (95% CI)	Number of studies (sample size)	Prevalence (95% CI)	Number of data points (sample size)	Prevalence (95% CI)
Frailty						
Sampling Approach						
Probability/All	223 (1,670,254)	16% (15%-17%)	159 (328,253)	12% (11%-13%)	66 (1,315,690)	23% (22%-25%)
Non-probability	23 (36,683)	23% (18%-30%)	16 (20,586)	15% (12%-19%)	5 (19,274)	33% (21%-46%)
Sampling Frame						
Register/complete	168 (476,832)	15% (13%-16%)	120 (270,859)	11% (9%-12%)	55 (173,051)	24% (21%-27%)
Health-related database	53 (1,159,612)	23% (21%-24%)	36 (42,967)	18% (15%-21%)	9 (1,112,163)	21% (17%-25%)
Convenience/other	21 (52,033)	22% (16%-28%)	15 (19,544)	14% (10%-19%)	6 (38,585)	31% (23%-40%)
Pre-Frailty						
Sampling Approach						
Probability/All	157 (1,467,531)	44% (43%-46%)	131 (275,074)	46% (44%-47%)	25 (1174984)	53% (44%-63%)
Non-probability	15 (32,918)	52% (47%-57%)	13 (19,361)	52% (47%-57%)	4 (18,761)	48% (46%-52%)
Sampling Frame						
Register/complete	117 (305,239)	42% (40%-45%)	98 (230,618)	45% (43%-46%)	17 (52,529)	48% (39%-57%)
Health related	38 (1,130,034)	49% (48%-51%)	31 (38,517)	51% (48%-54%)	6 (1,091,979)	43% (40%-46%)
Convenience/other	13 (47,406)	52% (49%-56%)	12 (18,695)	50% (45%-55%)	5 (38,072)	57% (54%-60%)

eTable 5: Frailty and pre-frailty estimates grouped by sex for physical frailty and deficit accumulation (frailty index) models for individuals aged ≥50.

Instrument	All Scales		Physical Frailty		Frailty Index	
Sex	Number of data points (sample size)	Prevalence (95% CI)	Number of studies (sample size)	Prevalence (95% CI)	Number of data points (sample size)	Prevalence (95% CI)
Frailty						
Male	202 (248,495)	14% (13%-15%)	145 (132,785)	11% (10%-12%)	34 (70,703)	20% (16%-24%)
Female	201 (303,805)	20% (18%-22%)	143 (167,517)	15% (14%-17%)	34 (84,624)	29% (24%-35%)
Pre-Frailty						
Male	135 (158,478)	45% (43%-47%)	119 (112,986)	45% (44%-47%)	19 (39,676)	51% (43%-58%)
Female	134 (196,213)	47% (45%-50%)	117 (140,320)	49% (47%-50%)	19 (48,318)	51% (44%-57%)

eTable 6: Results of the critical appraisal using the *Loney* et al., critical appraisal tool

Citation	Total Score (1-8)	Sampling	Sample frame	Sample size (≥418)[1]	Standard measures	Unbiased assessors	Response rate (≥70%)[2]	Confidence intervals	Population descriptives
Aarts et al., 2015	7	1	1	1	1	1	1	0	1
Abe et al., 2019	5	1	1	1	1	0	0	0	1
Agreli et al., 2013	4	1	0	0	1	1	0	0	1
Aguilar-Navarro et al., 2015	7	1	1	1	1	1	1	0	1
Ahmad et al., 2018	8	1	1	1	1	1	1	1	1
Akin et al, 2015	5	1	0	1	1	1	0	0	1
Albala et al., 2017	7	1	1	1	1	1	0	1	1
Alvarado et al., 2008	7	1	1	1	1	1	1	0	1
Andrade et al., 2018	7	1	1	1	1	1	0	1	1
Arnadottir et al., 2020	4	1	0	1	1	0	0	0	1
Arosio et al., 2019	5	1	1	0	1	1	0	0	1
Augusti et al, 2017	4	0	0	0	1	1	0	1	1
Avila-Funes et al., 2008	6	1	1	1	1	1	0	0	1
Badrasawi et al., 2016	7	1	1	1	1	1	1	0	1
Bandeen-Roche et al., 2015	6	1	0	1	1	1	0	1	1
Belisário et al., 2018	7	1	1	1	1	1	1	0	1
Bennett et al., 2013	6	0	1	1	1	1	1	0	1
Biritwum et al., 2016	8	1	1	1	1	1	1	1	1
Blodgett et al., 2015	5	1	1	1	1	0	0	0	1
Blodgett et al., 2017	5	1	1	1	1	0	0	0	1
Blyth et al., 2008	6	1	1	1	1	1	0	0	1
Boeckxstaens et al., 2015	4	0	0	1	1	1	0	0	1
Bongue et al., 2017b	5	1	0	1	1	1	0	0	1
Boulos et al., 2013	7	1	1	1	1	1	1	0	1
Bowen, 2012	5	1	1	1	1	0	0	0	1
Brigola et al., 2020	4	1	0	1	1	0	0	0	1
Brown et al., 2019	5	1	0	1	1	1	0	0	1
Buch et al., 2018	5	1	0	1	1	1	0	0	1
Bunce et al., 2019	6	1	1	1	1	1	0	0	1
Çakmur, 2015	4	0	1	0	1	1	0	0	1
Carneiro et al., 2016a	6	1	1	1	1	1	0	0	1
Carneiro et al., 2016b	5	1	1	0	1	1	0	0	1
Carneiro et al., 2017	4	0	0	0	1	1	0	1	1
Castell et al., 2010	6	1	0	1	1	1	1	0	1
Cawthon et al., 2007	6	1	1	1	1	1	0	0	1

Cesari et al., 2006	7	1	1	1	1	1	1	0	1
Cesari et al., 2012	5	1	1	1	1	0	0	0	1
Chamberlain et al., 2016	6	1	0	1	1	1	1	0	1
Chen et al., 2010	7	1	1	1	1	1	1	0	1
Chen et al., 2014	6	1	1	1	1	1	0	0	1
Chen et al., 2015	7	1	1	1	1	1	0	1	1
Choe et al., 2018	4	0	0	1	1	1	0	0	1
Clegg et al., 2016	5	1	0	1	1	1	0	0	1
Closs et al., 2016	6	1	0	1	1	1	0	1	1
Collerton et al., 2012	5	1	0	1	1	1	0	0	1
Cramm et al., 2014	5	1	1	1	1	0	0	0	1
Cruz et al., 2017	5	1	1	0	1	0	0	1	1
Curcio et al., 2014	4	0	0	1	1	1	0	0	1
da Silva et al., 2018a	5	1	0	1	1	1	0	0	1
Dasgupta et al., 2019	5	1	1	0	1	1	0	0	1
Davis et al., 2011	6	1	1	1	1	1	0	0	1
de Labra et al., 2018	4	0	0	1	1	1	0	0	1
de Queiroz Neves et al., 2018	4	1	0	0	1	1	0	0	1
De Witte et al., 2018	6	1	1	1	1	0	1	0	1
del Brutto et al., 2017	6	1	1	0	1	1	1	0	1
Dent et al., 2016	5	1	1	1	1	0	0	0	1
Dent et al., 2017	6	1	0	1	1	1	0	1	1
Diaz de León González et al., 2016	6	1	1	1	1	1	0	0	1
Diniz et al., 2018	5	1	1	0	1	1	0	0	1
Dong et al., 2018	5	1	0	1	1	1	0	0	1
dos Santos Tavares et al., 2017	5	0	0	1	1	1	1	0	1
Duarte et al., 2013	6	1	1	0	1	1	1	0	1
Duarte et al., 2014	6	1	1	0	1	1	0	1	1
Duarte et al., 2015	6	1	1	0	1	1	1	0	1
Ebeid et al., 2016	5	1	1	0	1	1	0	0	1
Ensrud et al., 2007	5	0	1	1	1	1	0	0	1
Espinoza et al., 2010	6	1	1	1	1	1	0	0	1
Etman et al., 2014	6	1	1	0	1	1	0	1	1
Fabrício et al., 2019	5	1	0	0	1	1	1	0	1
Fabrício-Wehbe et al., 2009	5	1	1	0	1	1	0	0	1
Farías-Antúnez et al., 2019	7	1	1	1	1	1	1	0	1
Feng et al., 2014	6	1	1	1	1	1	0	0	1
Ferriolli et al., 2017	6	1	1	1	1	1	0	0	1
Fhon et al., 2012	5	1	1	0	1	1	0	0	1
Forti et al., 2014	6	1	1	1	1	1	0	0	1

Franse et al., 2018	4	1	0	1	1	0	0	0	1
Fried et al., 2001	5	1	0	1	1	1	0	0	1
Garcia-Garcia et al., 2011	7	1	1	1	1	1	0	1	1
García-González et al., 2009	6	1	1	1	1	1	0	0	1
García-Peña et al., 2016	6	1	1	1	1	1	0	0	1
Ge et al., 2017	7	1	1	1	1	1	0	1	1
Ghasemi et al., 2019	6	1	1	1	1	1	0	0	1
Gill et al., 2006	5	0	0	1	1	1	1	0	1
Grden et al., 2017	4	1	0	0	1	1	0	0	1
Gross et al., 2018	6	1	0	1	1	1	1	0	1
Guessous et al., 2014	6	1	1	1	1	1	0	0	1
Gurina et al, 2011	5	1	0	1	1	1	0	0	1
Hao et al., 2016	7	1	1	1	1	1	0	1	1
Harmand et al., 2017	5	1	1	1	1	1	0	0	0
Hegendörfer et al., 2020	4	0	0	1	1	1	0	0	1
Herr et al., 2015	5	1	0	1	1	1	0	0	1
Herr et al., 2018	5	1	0	1	1	1	0	0	1
Higueras-Fresnillo et al., 2018	7	1	1	1	1	1	1	0	1
Hoeck et al., 2012	5	1	1	1	1	0	0	0	1
Hoogendijk et al., 2014	6	0	1	1	1	1	1	0	1
Hoogendijk et al., 2017	4	0	1	1	1	1	0	0	0
Horibe et al., 2018	5	1	1	1	1	0	0	0	1
Huang et al., 2020	5	1	0	1	1	1	0	0	1
Hubbard et al., 2009	6	1	1	1	1	1	0	0	1
Hyde et al., 2010	5	1	1	1	1	0	0	0	1
Iwasaki et al., 2018	4	1	0	0	1	1	0	0	1
Jacobsen et al., 2019	6	1	1	1	1	1	0	0	1
Jauregui et al., 2014	7	1	1	1	1	1	1	0	1
Jotheeswaran et al., 2015	7	1	1	1	1	1	1	0	1
Jung et al., 2014	6	1	1	1	1	1	0	0	1
Jung et al., 2016	5	1	0	0	1	1	1	0	1
Júnior et al., 2014	6	1	1	0	1	1	1	0	1
Jürschik et al., 2012	5	1	0	1	1	1	0	0	1
Kashikar & Nagarkar, 2016	5	1	1	0	1	1	0	0	1
Kehler et al., 2017	6	1	1	1	1	1	0	0	1
Kelly et al., 2017	6	1	1	1	1	1	0	0	1
Kendhapedi et al., 2019	5	1	0	0	1	1	1	0	1
Kera et al., 2017	6	1	1	1	1	0	0	1	1
Keränen et al., 2017	5	1	1	1	1	0	0	0	1
Khamis et al., 2019	6	1	1	0	1	1	1	0	1

Kiely et al., 2009	6	1	1	1	1	1	0	0	1
Kim & Park, 2014	4	1	0	0	1	1	0	0	1
Kim et al., 2014	6	1	0	1	1	1	0	1	1
Kim et al., 2017	6	1	1	1	1	1	0	0	1
Kim et al., 2019a	6	1	1	1	1	1	0	0	1
Kim et al., 2019b	4	0	0	1	1	1	0	0	1
Kim et al., 2019c	5	1	0	1	1	1	0	0	1
Koponen et al., 2013	6	1	1	1	1	1	0	0	1
Kucharska-Newton et al., 2017	6	1	0	1	1	1	0	1	1
Kulminski et al., 2008	4	1	0	1	1	1	0	0	0
Kwan et al., 2015	4	1	0	0	1	1	0	0	1
Lahousse et al., 2014	6	1	1	1	1	1	0	0	1
Langholz et al., 2018	6	1	1	1	1	1	0	0	1
Le Cossec et al., 2016	6	1	0	1	1	1	0	1	1
Lee et al., 2014	4	0	0	1	1	1	0	0	1
Lee et al., 2018	7	1	1	1	1	1	1	0	1
León-Muñoz et al., 2014	6	1	1	1	1	1	0	0	1
Lewis et al., 2018	6	1	1	0	1	1	0	1	1
Lin et al., 2015	6	1	1	1	1	1	0	0	1
Lin et al., 2016	6	1	1	1	1	1	0	0	1
Liu et al., 2015	6	1	1	1	1	1	0	0	1
Liu et al., 2016	5	1	0	1	1	1	0	0	1
Liu et al., 2018	5	0	0	1	1	1	1	0	1
Llano et al., 2017	5	1	0	1	1	0	1	0	1
Lo et al., 2017	6	1	1	1	1	1	0	0	1
Lourenço et al., 2019	7	1	1	1	1	1	1	0	1
Ma et al., 2016	6	1	1	1	1	1	1	0	0
Ma et al., 2018	6	1	1	1	1	1	0	0	1
Ma et al., 2019	6	1	1	1	1	1	1	0	0
Manfredi et al., 2019	6	1	1	1	1	1	0	1	0
Mello et al., 2017	5	1	1	0	1	1	0	0	1
Metzelthin et al., 2010	5	1	0	1	1	0	1	0	1
Mohd Hamidin et al., 2018	6	1	1	0	1	1	1	0	1
Mohr et al., 2007	6	1	1	1	1	1	0	0	1
Moreira et al., 2013	6	1	0	1	1	1	0	1	1
Moreno-Tamayo et al., 2017	6	1	0	1	1	1	1	0	1
Mousavi sisi et al., 2019	5	1	0	1	1	1	0	0	1
Murayama et al., 2012	7	1	1	1	1	1	0	1	1
Nguyen et al., 2019	7	1	1	1	1	1	1	0	1
Nishi et al., 2012	7	1	1	1	1	1	1	0	1

Ntanasi et al., 2018	6	1	1	1	1	1	0	0	1
O'Connell et al., 2015	6	1	1	1	1	1	0	0	1
O'Donovan et al., 2019	6	1	1	0	1	1	0	1	1
Ocampo-Chaparro et al., 2013	5	1	1	0	1	1	0	0	1
Ocampo-Chaparro et al., 2019	7	1	1	1	1	1	1	0	1
Olaroiu et al., 2014	4	1	0	0	1	0	1	0	1
Ottenbacher et al., 2009	6	1	1	1	1	1	0	0	1
Ovares et al., 2018	6	1	1	1	1	1	0	0	1
Palomo et al., 2019	6	1	0	1	1	1	0	1	1
Paulson & Lichtenberg, 2015	6	1	1	1	1	1	0	0	1
Payne et al., 2017	8	1	1	1	1	1	1	1	1
Pengpid & Peltzer, 2019	7	1	1	1	1	1	1	0	1
Pérez-Zepeda et al., 2016	5	1	1	1	1	0	0	0	1
Poli et al., 2017	6	1	1	1	1	1	0	0	1
Pradhananga et al., 2019	6	1	0	1	1	1	0	1	1
Qiao et al., 2018	5	1	0	1	1	1	0	0	1
Ramsay et al., 2015	6	1	1	1	1	1	0	0	1
Ravindrarajah et al., 2017	5	1	0	1	1	1	0	0	1
Rivas-Ruiz et al., 2019	5	1	0	1	1	1	0	0	1
Rodrigues et al., 2018	7	1	1	1	1	1	0	1	1
Roppolo et al., 2017	4	0	0	1	1	1	0	0	1
Ruiz-Arregui et al., 2013	7	1	1	1	1	1	1	0	1
Sabbour et al., 2018	4	0	0	0	1	1	1	0	1
Salminen et al., 2019	7	1	1	1	1	1	1	0	1
Samper-Ternent et al., 2017	7	1	1	1	1	1	1	0	1
Sánchez-García et al., 2014	7	1	0	1	1	1	1	1	1
Santiago et al., 2013	4	0	0	0	1	1	1	0	1
Santiago et al., 2018	4	0	0	1	1	1	0	0	1
Santos et al., 2015	4	1	0	0	1	1	0	0	1
Santos-Eggimann et al., 2009	6	1	1	1	1	1	0	1	0
Satake et al., 2017	5	1	1	1	1	0	0	0	1
Sathasivam et al., 2015	7	1	1	1	1	1	1	0	1
Segal et al., 2017	5	1	0	1	1	1	0	0	1
Serra-Prat et al., 2016	4	1	0	0	1	1	0	0	1
Shi et al., 2011	7	1	1	1	1	1	1	0	1
Shimada et al., 2016	5	1	0	1	1	1	0	0	1
Shinkai et al., 2013	6	1	1	1	1	1	1	0	0
Shirooka et al., 2017	4	0	0	1	1	1	0	0	1
Shmuel et al., 2019	6	1	1	1	1	1	0	0	1
Silveira et al., 2015	5	1	0	0	1	1	1	0	1

Siriwardhana et al., 2019	8	1	1	1	1	1	1	1	1
Sleight & Holtzer, 2017	6	1	1	1	1	1	0	0	1
Song et al., 2010	5	1	1	1	1	0	0	0	1
Sousa-Santos et al., 2018	6	1	1	1	1	1	0	0	1
Srinonprasert et al., 2018	6	1	1	1	1	1	0	0	1
St John et al., 2013	7	1	1	1	1	1	1	0	1
Stenholm et al., 2014	6	1	1	1	1	1	0	0	1
Sternberg et al., 2014	4	1	0	0	1	1	0	0	1
Strawbridge et al., 1998	7	1	1	1	1	1	1	0	1
Theou et al., 2012	6	1	1	1	1	1	0	0	1
Theou et al., 2013	6	1	1	1	1	1	0	0	1
Theou et al., 2015	6	1	1	1	1	1	0	0	1
Thompson et al., 2018a	6	1	1	1	1	1	0	0	1
Thompson et al., 2018b	5	1	1	1	1	1	0	0	0
Tian et al., 2019	5	1	0	1	1	1	0	0	1
Tribess et al., 2012	7	1	1	1	1	1	1	0	1
Tyrovolas et al., 2018	5	1	1	1	1	1	0	0	0
Vaingankar et al., 2017	7	1	1	1	1	1	0	1	1
van Assen et al., 2016	6	1	1	1	1	0	0	1	1
Varela Pinedo et al., 2009	4	1	0	0	1	1	0	0	1
Veronese et al., 2017	6	1	1	1	1	1	0	0	1
Verver et al., 2019	4	1	0	1	1	0	0	0	1
Wang et al., 2014	4	0	0	1	1	1	0	0	1
Wang et al., 2020	6	1	1	1	1	1	0	0	1
Watanabe et al., 2017	5	0	1	1	1	1	0	0	1
Watts et al., 2019	5	1	1	1	1	1	0	0	0
Widagdo et al., 2015	6	1	1	1	1	1	0	0	1
Witham et al., 2019	6	1	1	1	1	1	0	0	1
Wong et al., 2010	6	1	0	1	1	1	0	1	1
Woo et al., 2012	4	0	0	1	1	1	0	0	1
Woo et al., 2015a	4	0	0	1	1	1	0	0	1
Wu et al., 2017	6	1	1	1	1	1	0	0	1
Xi & Guo, 2014	5	0	0	1	1	1	0	1	1
Yamada et al., 2017	7	1	1	1	1	0	1	1	1
Yamaguchi et al., 2018	5	0	1	1	1	0	0	1	1
Ye et al., 2020	5	1	1	1	1	0	0	0	1
Yin et al., 2018	8	1	1	1	1	1	1	1	1
Yoshimura et al., 2018	4	0	0	1	1	1	0	0	1
Yu et al., 2017	4	0	0	1	1	1	0	0	1
Zhang et al., 2019	6	1	1	1	1	1	0	0	1

Zhang et al., 2020	5	0	0	1	1	1	1	0	1
Zheng et al., 2016	8	1	1	1	1	1	1	1	1
Zucchelli et al., 2019	7	1	1	1	1	1	1	0	1
Zúñiga et al., 2019	4	1	0	1	1	0	0	0	1
Zuppa et al., 2019	5	1	1	0	1	1	0	0	1

1. Sample size based on the calculation for an error rate of less than 3% taking frailty to be 10.7% (Collard et al., 2012).
2. Item response rate calculated where possible using six definitions summarized by the American Association for Public Opinion Research.

eTable 7. Detailed search strategy (01 January 1998 to 01 April 2020)

Pubmed, Embase, CINAHL, Cochrane Library	Google Scholar
Search terms and combination (Prevalence OR Incidence OR Epidemiology) AND (Elderly OR Aged OR "Older adult$" OR "Older person$" OR Geriatric$) AND (Frailty OR Frail) AND (Population-based OR "Population based") NOT ("Frailty model" OR "Frailty survival model") **Steps applied** 1. Prevalence OR Incidence OR Epidemiology 2. Elderly OR Aged OR "Older adult$" OR "Older person$" OR Geriatric$ 3. Frailty OR Frail 4. Population-based OR "Population based" 5. 1, 2, 3, 4 using AND 6. "Frailty model" OR "Frailty survival model" **7.** 5, 6 using NOT	**Search string** COUNTRY "frailty prevalence" OR frail OR frailty -"frailty model"

Appendix Table 8. Inter-rater reliability testing scores for critical appraisal using the Loney quality appraisal tool

A1. Comparison of individual items of the appraisal tool

Item name	Measure of Agreement (Kappa Value)
Sampling	0.719
Sampling frame	0.769
Sample size (≥300/appropriate)	0.876
Standard measures	1.000
Unbiased assessors	0.517
Response rate (≥70%)	0.718
CI/sub-group	0.470
Population descriptives	1.000

A2. Total scores of the appraisal tool by reviewers

	Mean score	Item means Mean (min-max)
Reviewer 1	6.05	
Reviewer 2	5.79	
		5.919 (5.791-6.047)

A3. Comparison of total scores of the appraisal tool

Reliability statistics	Cronbach's Alpha	Inter-item correlation	Intraclass Correlation Coefficient	95% Confidence Interval
Total score	0.846	0.735	0.837	0.697-0.912

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