

Supplemental materials

Supplemental Table 1S: Newcastle-Ottawa scales of the included studies.

Study	Selection			Endpoint not present at start	Comparability		Outcome		Total
	Representative of exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure		Comparability (Confounding)	Assessment of outcome	Follow-up duration	Adequacy follow-up	
Batty, 2019 ^[26]	*	*	*	*	*	*	*	*	8
Blanco, 2017 ^[27]	*	*	*	*	*	*	*	*	8
Calvo, 2018 ^[17]	*	*	*	*	*	*	*	*	7
Dodson, 2016 ^[28]	*	*	*	*	*	*	*	*	8
Dodson, 2018 ^[36]	*	*	*	*	**	*	*	*	9
Ekerstad, 2018 ^[18]	*	*	*	*	*	*	*	*	8
Flint, 2018 ^[29]	*	*	*	*	*	*	*	*	8
Graham, 2013 ^[30]	*	*	*	*	*	*	*	*	8
Herman, 2019 ^[20]	*	*	*	*	*	*	*	*	7
Kang, 2015 ^[21]	*	*	*	*	*	*	*	*	7
Llao, 2019 ^[22]	*	*	*	*	*	*	*	*	8
Nunez, 2017 ^[31]	*	*	*	*	*	*	*	*	8
Patel, 2018 ^[23]	*	*	*	*	*	*	*	*	8
Salinas, 2016 ^[37]	*	*	*	*	*	*	*	*	7
Salinas, 2017 ^[24]	*	*	*	*	*	*	*	*	7
Salinas, 2018 ^[32]	*	*	*	*	*	*	*	*	8
Sanchis, 2014 ^[33]	*	*	*	*	*	*	*	*	8
Sigh, 2011 ^[34]	*	*	*	*	*	*	*	*	8
Sugino, 2014 ^[25]	*	*	*	*	*	*	*	*	7
White, 2015 ^[35]	*	*	*	*	**	*	*	*	9

Notes: The Newcastle-Ottawa scale uses a star system (0 to 9) to evaluate included studies on 3 domains: selection, comparability, and outcomes. Star (*)= item presents. Maximum 1 star (*) for selection and outcome components and 2 stars (**) for comparability components. Higher scores represent higher study quality.

Supplemental Table 2S: Summary of frailty assessment tools in included studies.

Study	Clear definition of study population?	Clear definition of outcomes and assessment?	Independent assessment of outcomes? (e.g. by third party)	Sufficient Follow-up duration?	Selective loss during Follow-up?	Limitations identified?
Batty, 2019 ^[26]	Yes	Yes	Yes	Yes	No	Yes
Blanco, 2017 ^[27]	Yes	Yes	Yes	Yes	No	Yes
Calvo, 2018 ^[17]	Yes	Yes	Yes	Yes	No	Yes
Dodson, 2016 ^[28]	Yes	Yes	Yes	Yes	No	Yes
Dodson, 2018 ^[36]	Yes	Yes	Yes	Yes	No	Yes
Ekerstad, 2018 ^[18]	Yes	Yes	Yes	Yes	No	Yes
Flint, 2018 ^[29]	Yes	Yes	Yes	Yes	No	Yes
Graham, 2013 ^[30]	Yes	Yes	Yes	Yes	No	Yes
Herman, 2019 ^[20]	Yes	Yes	Yes	Yes	No	Yes
Kang, 2015 ^[21]	Yes	Yes	Yes	Yes	No	Yes
Llao, 2019 ^[22]	Yes	Yes	Yes	Yes	No	Yes
Nunez, 2017 ^[31]	Yes	Yes	Yes	Yes	No	Yes
Patel, 2018 ^[23]	Yes	Yes	Yes	Yes	No	Yes
Salinas, 2016 ^[37]	Yes	Yes	Yes	Yes	No	Yes
Salinas, 2017 ^[24]	Yes	Yes	Yes	Yes	No	Yes
Salinas, 2018 ^[32]	Yes	Yes	Yes	Yes	No	Yes
Sanchis, 2014 ^[33]	Yes	Yes	Yes	Yes	No	Yes
Sigh, 2011 ^[34]	Yes	Yes	Yes	Yes	No	Yes
Sugino, 2014 ^[25]	Yes	Yes	Yes	Yes	No	Yes
White, 2015 ^[35]	Yes	Yes	Yes	Yes	No	Yes