

## Supplementary document 4: Risk of bias assessment

Section	Criteria	Baggs (1990) Baggs et al. (1992)	Baggs et al., (1999)	Kang (2016) Kang et al. (2020)
1	<b>Selection bias</b>			
	Are the individuals selected to participate in the study likely to be representative of the target population? 1 Very likely      2 Somewhat likely 3 Not likely      4 Cannot tell			
1		1	1	2
	What percentage of selected individuals agreed to participate? 1 80 - 100% agreement      2 60 – 79% agreement 3 less than 60% agreement      4 Not applicable      5 Cannot tell			
1		1	2	5
	<b>Rate this section</b> <b>Strong:</b> The selected individuals are very likely to be representative of the target population (Q1 is 1) and there is greater than 80% participation (Q2 is 1). <b>Moderate:</b> The selected individuals are at least somewhat likely to be representative of the target population (Q1 is 1 or 2); and there is 60 - 79% participation (Q2 is 2). 'Moderate' may also be assigned if Q1 is 1 or 2 and Q2 is 5 (can't tell). <b>Weak:</b> The selected individuals are not likely to be representative of the target population (Q1 is 3); or there is less than 60% participation (Q2 is 3) or selection is not described (Q1 is 4); and the level of participation is not described (Q2 is 5)	1	2	2
2	<b>Study design</b>			
	Indicate the study design 1 Randomised controlled trial      2 Controlled clinical trial 3 Cohort analytic (two group pre + post) 4 Case-control 5 Cohort (one group pre + post (before and after)) 6 Interrupted time series 7 Other specify _____      8 Cannot tell	prospective observational	prospective observational	secondary data
1				
2	Was the study described as randomised? (If NO, go to Component C)	No	No	No
3	If Yes, was the method of randomisation described?			
4	If Yes, was the method appropriate?			
	<b>Rate this section</b> <b>Strong:</b> will be assigned to those articles that described RCTs and CCTs. <b>Moderate:</b> will be assigned to those that described a cohort analytic study, a case control study, a cohort design, or an interrupted time series. <b>Weak:</b> will be assigned to those that used any other method or did not state the method used.	3	3	3
3	<b>Confounders</b>			
	Were there important differences between groups prior to the intervention? 1 Yes    2 No    3 Cannot tell			
1		1	1	1
	If yes, indicate the percentage of relevant confounders that were controlled (either in the design (e.g. stratification, matching) or analysis)? 1 80 – 100% (most) 2 60 – 79% (some) 3 Less than 60% (few or none) 4 Cannot Tell			
2		3	3	3
	<b>Rate this section</b> <b>Strong:</b> will be assigned to those articles that controlled for at least 80% of relevant confounders (Q1 is 2); or (Q2 is 1). <b>Moderate:</b> will be given to those studies that controlled for 60 – 79% of relevant confounders (Q1 is 1) and (Q2 is 2). <b>Weak:</b> will be assigned when less than 60% of relevant confounders were controlled (Q1 is 1) and (Q2 is 3) or control of confounders was not described (Q1 is 3) and (Q2 is 4).	3	3	3

4	<b>Blinding</b>			
	Was (were) the outcome assessor(s) aware of the intervention or exposure status of participants?			
1	1 Yes      2 No      3 Cannot tell	3	3	3
	Were the study participants aware of the research question?			
2	1 Yes      2 No      3 Cannot tell	3	3	3
<b>Rate this section</b> <b>Strong:</b> The outcome assessor is not aware of the intervention status of participants (Q1 is 2); and the study participants are not aware of the research question (Q2 is 2). <b>Moderate:</b> The outcome assessor is not aware of the intervention status of participants (Q1 is 2); or the study participants are not aware of the research question (Q2 is 2). <b>Weak:</b> The outcome assessor is aware of the intervention status of participants (Q1 is 1); and the study participants are aware of the research question (Q2 is 1); or blinding is not described (Q1 is 3 and Q2 is 3)		3	3	3
5	<b>Data collection methods</b>			
	Were data collection tools shown to be valid?			
1	1 Yes      2 No      3 Cannot tell	1	1	1
	Were data collection tools shown to be reliable?			
2	1 Yes      2 No      3 Cannot tell	1	1	1
<b>Rate this section</b> <b>Strong:</b> The data collection tools have been shown to be valid (Q1 is 1); and the data collection tools have been shown to be reliable (Q2 is 1). <b>Moderate:</b> The data collection tools have been shown to be valid (Q1 is 1); and the data collection tools have not been shown to be reliable (Q2 is 2) or reliability is not described (Q2 is 3). <b>Weak:</b> The data collection tools have not been shown to be valid (Q1 is 2) or both reliability and validity are not described (Q1 is 3 and Q2 is 3).		1	1	1
6	<b>Withdrawals and drop-outs</b>			
	Were withdrawals and drop-outs reported in terms of numbers and/or reasons per group?			
1	1 Yes   2 No   3 Cannot tell 4 Not Applicable (i.e. one-time surveys or interviews)	4	4	4
	Indicate the percentage of participants completing the study. (If the percentage differs by groups, record the lowest).			
2	1 80 -100%   2 60 - 79%   3 < 60%   4 Cannot tell   5 Not Applicable (i.e. Retrospective case-control)	5	5	5
<b>Rate this section</b> <b>Strong:</b> will be assigned when the follow-up rate is 80% or greater (Q1 is 1 and Q2 is 1). <b>Moderate:</b> will be assigned when the follow-up rate is 60 – 79% (Q2 is 2) OR Q1 is 4 or Q2 is 5. <b>Weak:</b> will be assigned when a follow-up rate is less than 60% (Q2 is 3) or if the withdrawals and drop-outs were not described (Q1 is No or Q2 is 4). <b>Not Applicable:</b> if Q1 is 4 or Q2 is 5.		N/A	N/A	N/A
7	<b>Intervention integrity</b>			
	What percentage of participants received the allocated intervention or exposure of interest?			
1	1 80 -100%   2 60 - 79%   3 < 60%   4 Cannot tell	4	4	4
	Is it likely that subjects received an unintended intervention (contamination or co-intervention) that may influence the results?			
2	1 Yes      2 No      3 Cannot tell	3	3	3
8	<b>Analysis</b>			
	Indicate the unit of allocation			
1	1. community 2. organisation/institution 3. practice/office 4. individual	individual	individual	individual

2	Indicate the unit of analysis 1. community 2. organisation/institution 3. practice/office 4. individual	individual	individual	organization/institution
3	Are the statistical methods appropriate for the study design? 1 Yes      2 No      3 Cannot tell	1	1	1
4	Is the analysis performed by intervention allocation status (i.e., intention to treat) rather than the actual intervention received? 1 Yes      2 No      3 Cannot tell	N/A	N/A	N/A
	<b>Global Rating</b>			
1	<b>Selection bias</b> 1. Strong      2. Moderate      3. Weak	1	2	2
2	<b>Study design</b> 1. Strong      2. Moderate      3. Weak	3	3	3
3	<b>Confounders</b> 1. Strong      2. Moderate      3. Weak	3	3	3
4	<b>Blinding</b> 1. Strong      2. Moderate      3. Weak	3	3	3
5	<b>Data collection method</b> 1. Strong      2. Moderate      3. Weak	1	1	1
6	<b>Withdrawals and dropouts</b> 1. Strong      2. Moderate      3. Weak	N/A	N/A	N/A
	<b>Global rating for this paper</b> 1 Strong (no WEAK ratings) 2 Moderate (one WEAK rating) 3 Weak (two or more WEAK ratings)	<b>Weak</b>	<b>Weak</b>	<b>Weak</b>