Multimedia Appendix 2. Study quality scores using Downs and Black scale: checklist for measuring study quality (n=50)

Study	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Quality Score
Clauson et al. (2008) [17]	1	1	1	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	10
Kovic et al. (2008) [19]	1	1	1	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	10
Timpka et al. (2008) [23]	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
Chou et al. (2009)[25]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	14
Hughes et al. (2009) [29]	1	1	1	0	1	2	0	2	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	13
Jennings et al. (2009) [30]	1	1	1	1	0	1	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	12
Lupianez- Villanueva et al. (2009) [33]	1	1	1	0	1	2	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	9
Moreno et al. (2009a)[35]	1	1	1	1	1	2	2	1	2	2	0	0	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	21
Takahashi et al. (2009)[38]	1	1	1	0	0	2	2	2	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	15
Avery et al. (2010)[42]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	11
Chew & Eysenbach (2010) [44]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	15
Cobb et al. (2010)[45]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	15
Colineau &	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6

Paris (2010) [46]																												
Hu & Sundar (2010) [51]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	11
Hwang et al. (2010) [52]	1	1	1	0	0	2	2	0	2	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1	1	16
Kim & Kwon (2010) [53]	1	1	1	0	1	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	13
Kontos et al. (2010) [54]	1	1	1	0	1	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	14
Lariscy et al. (2010) [56]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	11
Lo et al. (2010) [57]	1	1	1	0	0	2	0	0	0	2	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	1	11
Rice et al. (2010) [60]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	11
Wicks et al. (2010) [65]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	15
Adrie et al. (2011) [66]	1	1	1	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	8
Baptist et al. (2011) [67]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	13
Bosslet et al. (2011) [69]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	14
Dowdell et al. (2011) [72]	1	1	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	7
Frimming et al. (2011) [76]	1	1	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	9
Garcia- Romero et al. (2011) [79]	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Hanson et al.	1	1	1	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	11

(2011) [80]																												
Jent et al. (2011) [82]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	13
Kadry et al. (2011) [83]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	13
Kishimoto & Fukushmima (2011) [84]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	13
Kukreja et al. (2011) [85]	1	1	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	8
Lau (2011) [87]	1	1	1	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	9
Lord et al. (2011) [89]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	12
Morturu & Liu (2011) [90]	1	1	1	0	0	2	1	0	0	2	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	11
O'Dea & Campbell (2011) [91]	1	1	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	10
Omurtag et al. (2011) [92]	1	1	1	0	0	2	0	0	0	0	2	1	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	12
Rajagopalan et al. (2011) [93]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	11
Ralph et al. (2011) [94]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	14
Selkie et al. (2011) [97]	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
Setoyama et al. (2011) [98]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	13
Signorini et al.	1	1	1	0	0	2	2	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	10

(2011) [101]																												
Turner – McGrievy & Tate (2011) [102]	1	1	1	1	1	2	2	1	2	2	0	0	0	1	0	0	1	1	1	1	1	1	1	1	1	1	1	26
Usher et al. (2011) [103]	1	1	1	0	0	2	2	0	0	2	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	13
Van Uden- Kraan (2011) [104]	1	1	1	0	0	2	2	0	0	2	1	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	14
Weitzman et al. (2011) [106]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	12
Young & Rice (2011) [107]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	12
Fernandez- Luque et al. (2012) [108]	1	1	1	0	0	2	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	13
O'Grady et al. (2012) [110]	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6
Rhebergen et al. (2012) [111]	1	1	1	1	1	2	2	0	0	2	1	1	1	1	1	0	0	1	1	1	1	1	0	0	1	0	0	22

Key:

Reporting: "Yes=1," "No=0"

- 1. Is the hypothesis /aim /objective of the study clearly described?
- 2. Are the main outcomes to be measured clearly described in the Introduction or Methods section?
- 3. Are the characteristics of the patients / samples included in the study clearly described?
- 4. Are the interventions of interest clearly described?
- 5. Are the distributions of principal confounders in each group of subjects to be compared clearly described?

"Yes=2," "Partially=1," "No=0"

- 6. Are the main findings of the study clearly described?
- 7. Does the study provide estimates of the random variability in the data for the main outcomes?
- 8. Have all important adverse events that may be a consequence of the intervention been reported?
- 9. Have the characteristics of patients lost to follow-up been described?
- 10. Have actual probability values been reported (e.g., 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001?

External validity: "Yes=1," "No=0," "Unable to determine=0"

- 11. Were the subjects asked to participate in the study representative of the entire population from which they were recruited?
- 12. Were those subjects who were prepared to participate representative of the entire population from which they were recruited?
- 13. Were the staff, places, and facilities where the patients were treated, representative of the treatment the majority of patients receive?

Internal validity - bias: "Yes=1," "No=0," "Unable to determine=0"

- 14. Was an attempt made to blind study subjects to the intervention they have received?
- 15. Was an attempt made to blind those measuring the main outcomes of the intervention?
- 16. If any of the results of the study were based on "data dredging" was this made clear?
- 17. In trials and cohort studies, do the analyses adjust for different lengths of follow-up of patients, or in case-control studies, is the time period between the intervention and outcome the same for cases and controls?
- 18. Were the statistical tests used to assess the main outcomes appropriate?
- 19. Was compliance with the intervention/s reliable?
- 20. Were the main outcome measures used accurate (valid and reliable)?

Internal validity - confounding (selection bias): "Yes=1," "No=0," "Unable to determine=0"

- 21. Were the patients in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited from the same population?
- 22. Were study subjects in different intervention groups (trials and cohort studies) or were the cases and controls (case-control studies) recruited over the same period of time?
- 23. Were study subjects randomized to intervention groups?
- 24. Was the randomized intervention assignment concealed from both patients and health care staff until recruitment was complete and irrevocable?

- 25. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn?
- 26. Were losses of patients to follow-up taken into account?

Power

27. Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%? Sample sizes have been calculated to detect a difference of x% and y%.

Size of smallest intervention group

- 1. A 1<n10
- 2. B n1-n2 1
- 3. C n3-n4 2
- 4. D n5-n6 3
- 5. E n7-n8 4
- 6. F n8+ 5