**Table A1** PRIO-harms checklist of items to include when reporting an overview of systematic reviews (OoSRs)

| Section/topic | (Sub-) item# | Checklist item | Reported on page# |
|---|---|---|---|
| Title<br>1. Title | 1a | Specify the study design with terms such as "overview of (systematic) reviews," "umbrella review," "(systematic) review of systematic reviews," or "(systematic) meta-review" in the title of the OoSRs. | 1 |
| | 1b | Mention "safety" or harms related terms, or the adverse event(s) of interest in the title of the OoSRs. | 1 |
| Abstract<br>2. Structured-like summary | 2a | Provide a structured-like abstract, as applicable: background, objective, data sources, selection criteria, data extraction, review appraisal, data synthesis methods, results, limitations, conclusions. | 1-2 |
| | 2b | Report the main findings of analysis of harms undertaken in the OoSRs or/and in the included SRs. | 1-2 |
| Introduction<br>3.Rationale | 3a | Specify the rationale and the scope (wide or narrow agendas) for the overview in the context of an existing body of knowledge on the topic. | 3-4 |
| | 3b | Provide a balanced presentation of potential benefits and harms of the intervention(s). | 3-4 |
| | 3c[a] | Define which events are considered harms according to previous literature and provide a clear rationale for the specific harms included in the OoSRs. | 3-4 |
| 4. Objectives (PICOS) | 4 | Provide an explicit statement of research question(s) that specifies PICOS: | 4-5 |
| Methods | | Participants Interventions Comparators Outcomes Study design | |
| 5. Protocol and registration | 5a | Indicate if a protocol exists or not. | 5 |
| | 5b | If registered, provide the name of the registry (such as a valid Web address, PROSPERO). | 5 |
| 6. Eligibility criteria and outcomes of interest | 6a | Specify inclusion and exclusion criteria for study design, participants, interventions, and comparators in detail. | 5 |
| | 6b | List (and define whenever it is necessary) the outcomes for which data were recorded, ideally include prioritization of main and additional outcomes. | 5 |
| | 6c | Include adverse events as (primary or secondary) outcome of interest. Define them and grade their severity (such as mild, moderate, severe, fatal; severity could also be described in the appendix), if appropriate. | 5 |
| | 6d[b] | Specify report characteristics (such as language restrictions, publication status, and years considered) used as criteria for eligibility for the OoSRs (see also item 7). | 5 |

| | | | |
|---|---|---|---|
| 7. Information sources | 7a | Search at least two electronic databases. | 5-6 |
| | 7b | Search supplementary sources (e.g., hand searching, reference lists, related reviews and guidelines, protocol registries, conference abstracts, and other grey literature). | 5-6 |
| | 7c | Report the date of last search and/or dates of coverage for each database. | 5-6 |
| 8. Search strategy[c] | 8a | Specify full electronic search strategy (algorithm) for at least one database including any limits used (e.g., language and date restrictions see also subitems 6d and 7c) such that it could be repeated. | 6 |
| | 8b | Present any additional search process (e.g., algorithm or filter for adverse events, searches in pertinent websites) specifically to identify adverse events that have been investigated. | 6 |
| 9. Data management and selection process | 9a[d] | Describe the software that was used to manage records and data throughout the OoSRs. | 6-7 |
| | 9b | Define what is an SR and provide the process for selecting SRs and its relevant details (screening the title and abstract or full text by at least two reviewers, selection by multiple independent investigators and resolving disagreements by consensus). | 6 |
| | 9c | Report any attempt to handle overlapping (include one review among multiple potential candidates by choosing for example the most updated SR, the most methodologically rigorous SR or the SR with larger number of primary studies). | 6 |
| 10. Additional search for primary studies | 10 | Report additional search to identify eligible primary studies (e.g., searching in more databases or update the search) and its relevant details. | 6 |
| 11. Data collection process | 11a | Describe the method of data extraction from included SRs (e.g., data collection form, extraction in duplicate and independently, resolving disagreements by consensus). | 6 |
| | 11b | Report any processes for obtaining, confirming, or updating data from investigators (e.g., contact with authors of included reviews, obtain data from primary studies of included reviews). | 6 |
| 12. Data items | 12 | List (and define whenever is necessary) the variables for which data were recorded (e.g., PICOS items, number of included studies and participants, dose, length of follow up, results, funding sources) and any data assumptions and simplifications made. | 6 |
| 13. Assessment of methodological quality and quality of evidence | 13a | State the evaluation of reporting or/and methodological quality (e.g., using PRISMA or PRISMA-harms, AMSTAR or R-AMSTAR) of the included reviews. | 6 |
| | 13b[e] | State the evaluation of quality for individual studies that are included in the SRs (inform whether tools such as Jadad or RoB of Cochrane were used by the included reviews) and for the additional primary studies. | 6-7 |
| | 13c | State the evaluation of quality of evidence (e.g., using GRADE approach). | 6-7 |

| | | | |
|---|---|---|---|
| | 13d | Describe the methods (e.g., piloted forms, independently, in duplicate) used for the quality assessment. | 6-7 |
| 14. Meta-bias(es) | 14 | Specify any planned assessment of meta-bias(es) (such as publication bias or selective reporting across studies, ROBIS tool). | 7-8 |
| 15. Data synthesis | 15a | Specify clearly the method (narrative, meta-analysis, or network meta-analysis) of handling or synthesizing data and their details (e.g., state the principal summary measures that were extracted or calculated, how heterogeneity was assessed, what statistical approaches were used if a quantitative synthesis has been conducted) | 7 |
| | 15b | Describe the software that was used to analyse the data if a quantitative synthesis has been conducted. | 7 |
| | 15c | Report if zero events are included in the studies and how they were handled in statistical analyses, if relevant. | 7 |
| | 15d | Describe methods of any prespecified additional analyses (such as sensitivity or subgroup analyses, meta-regression). | 7 |
| Results<br>16. Review and primary study selection | 16a | Provide the details of review selection (e.g., numbers of reviews screened, retrieved, and included and excluded in the overview) and the number of the additional eligible primary studies that were included, ideally with a flow diagram of the overview process. | 8 |
| | 16b | Present a flow diagram that gives separately the number of studies focused on harms outcomes. | 8 |
| | 16c[c] | List the studies (full citation) that were excluded after reading the full text and provide reasons. | 8 |
| 17. Review and primary study characteristics | 17a[c] | Describe characteristics of each included SR in tables (such as title or author, search date, PICOS, design and number of studies included, number and age range of participants, dose/frequency, follow up period [treatment duration], review limitations, results or conclusion) and of each additional primary study. | 9 |
| | 17b | For each included SR report language and publication status restrictions that have been used. | 9 |
| 18. Overlapping | 18 | Present or/and discuss about overlapping of studies within SRs (at least one of the following): | 10 |
| 19. Present assessment of methodological quality | 19 | Present measures of overlap (such as CCA).<br>Provide citation matrix[c].<br>Give the number of index publications or/and discuss about overlapping[f]<br>Present results in text or/and tables[c] of any quality assessment (see also subitems 13aec): | 9 |

| | | | |
|---|---|---|---|
| and quality of evidence | | Reporting or/and methodological quality of the included SRs.<br>Inform for the quality of the individual studies that were included in the SRs (report results for sequence generation, allocation concealment, blinding, withdrawals, bias etc.) and for the additional included primary studies. | |
| 20. Present meta-bias(es) | 20 | Quality of evidence.<br>Present results of any assessment of meta-bias(es) (such as publication bias or selective reporting across studies, ROBIS assessment). | 9-10 |
| 21. Synthesis of results | 21a | Summarize and present the main findings of the overview for benefits and harms. If a quantitative synthesis has been conducted, present each summary measure with a confidence interval, prediction interval, or a credible interval and measures of heterogeneity or inconsistency. | 10-14 |
| | 21b | Give results of any additional analyses, if done (such as sensitivity, subgroup analyses, or meta-regression). | 10-14 |
| | 21c | Report results for adverse events separately for each intervention. | 10-14 |
| Discussion<br>22. Summary of evidence | 22 | Provide a concise summary of the main findings with the strengths and shortcomings of evidence for each main outcome. | 14-18 |
| 23. Limitations | 23a | Discuss limitations of either the overview or included studies (or both) (e.g., different eligibility criteria, limitations of searching reviews, language restrictions, publication and selection bias). | 18 |
| | 23b | Report possible limitations of the included reviews related to harms (issues of missing data and information, definitions of harms, rare adverse effects). | 18 |
| 24. Conclusions | 24a | Provide a general interpretation of the results in coherence with the review findings and present implications for practice; consider the harms equally as carefully as the benefits and in the context of other evidence. | 18 |
| | 24b | Present implications for future research. | 18-19 |
| Authorship<br>25. Contributions of authors | 25 | Provide contributions of authors. | Title page |
| 26. Dual (co-)authorship | 26 | Report about dual (co-)authorship in the limitation or declarations of interest section. | - |
| Funding<br>27. Funding or other support | 27a | Indicate sources of financial and other support for the OoSRs (direct funding) or for the authors (indirect funding), or report no funding. | Title page |

| | | | |
|---|---|---|---|
| | 27b | Provide name for the overview funder and/or sponsor, or for the authors' supporters. | Title page |
| | 27c | Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in conducted the OoSRs. | Title page |

Abbreviations: SRs, systematic reviews; PICOS, participants, interventions, comparisons, outcomes, and study design; CCA, corrected covered area; PRIO-harms, Preferred Reporting Items for OoSRs.

a Applicable mainly for OoSRs that focus on adverse events. The description could be placed in methods section.

b Language restrictions, publication status, and years could also be reported in information sources topic - see item 7.

c It could also be placed in an appendix as a supplementary material.

d The software used for the management of the records and data could be placed in the data collection process - see item 11.

e The way of evaluation (e.g., instruments) can be reported in item 19.

[f] Index publication is the first occurrence of a primary publication in the included reviews. Discussion for overlapping might be placed in the discussion section.

Modified and extended for overviews of systematic reviews (OoSRs) from: 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. https://doi.org/10.1371/journal.pmed.1000097

**Table A2.** Eligible criteria for umbrella review

| Criteria | Inclusion criteria | Exclusion criteria |
|---|---|---|
| Population | Adult patients who have undergone gastrointestinal surgery, regardless of gender and ethnicity. | • Obstetrics and gynaecology patients<br>• Urology patients<br>• Paediatric patients |
| Intervention | Chewing gum regardless of chewing frequency, duration and type of chewing gum. | |
| Comparison | Treatment with standard postoperative care, or any alternative intervention groups. | |
| Primary outcomes | 1. Time to first flatus<br>2. Time to first bowel movement<br>3. Length of stay | |
| Secondary outcomes | Complications | |
| Type of design | Systematic review with/without Meta-analysis | Review of reviews, Literature reviews, Narrative reviews, Primary studies, Protocol |
| Years of publication | No limit | |
| Publication type | Published reviews | |
| Language | English | Non-English |

**Table A3.** Index and keyword terms used in eight databases, target journals and grey literature

| Database | # | Index and keyword terms |
|---|---|---|
| MEDLINE (Pubmed) | #1 | "digestive system surgical procedures"[MeSH Terms] OR ("gastrointestinal surger*"[Title/Abstract] OR "abdominal surger*"[Title/Abstract] OR "bowel surger*"[Title/Abstract] OR "stomach surger*"[Title/Abstract] OR "intestinal surger*"[Title/Abstract] OR "colon surger*"[Title/Abstract] OR "colorectal surger*"[Title/Abstract] OR "hepatic surger*"[Title/Abstract] OR "liver surger*"[Title/Abstract] OR "pancreatic surger*"[Title/Abstract] OR "small bowel surger*"[Title/Abstract] OR "large bowel surger*"[Title/Abstract] OR "open surger*"[Title/Abstract] OR "laparoscop*"[Title/Abstract]) |
| | #2 | "chewing gum"[MeSH Terms] OR ("chewing gum"[Title/Abstract] OR "chew*gum"[Title/Abstract:~5] OR "sham feeding"[Title/Abstract] OR "vagal cholinergic stimulat*"[Title/Abstract] OR "cephalic vagal stimulat*"[Title/Abstract]) |
| | #3 | #1 AND #2 |
| EMBASE (Elsevier) | #1 | 'abdominal surgery'/exp |
| | #2 | 'gastrointestinal surger*':ab,ti OR 'abdominal surger*':ab,ti OR 'bowel surger*':ab,ti OR 'stomach surger*':ab,ti OR 'intestinal surger*':ab,ti OR 'colon surger*':ab,ti OR 'colorectal surger*':ab,ti OR 'hepatic surger*':ab,ti OR 'liver surger*':ab,ti OR 'pancreatic surger*':ab,ti OR 'small bowel surger*':ab,ti OR 'large bowel surger*':ab,ti OR 'open surger*':ab,ti OR laparoscop*:ab,ti |
| | #3 | #1 OR #2 |
| | #4 | 'chewing gum'/exp |
| | #5 | 'chewing gum':ab,ti OR ((chew* NEAR/5 gum):ab,ti) OR 'sham feeding':ab,ti OR 'vagal cholinergic stimulat*':ab,ti OR 'cephalic-vagal stimulat*':ab,ti |
| | #6 | #4 OR #5 |
| | #7 | #3 AND #6 |
| CINAHL (EBSCO) | #1 | (MM "Chewing Gum") |
| | #2 | TI ( “chewing gum” OR (chew* N5 gum) OR “sham feeding” OR “vagal cholinergic stimulat*” OR “cephalic-vagal stimulat*” ) OR AB ( “chewing gum” OR (chew* N5 gum) OR “sham feeding” OR “vagal cholinergic stimulat*” OR “cephalic-vagal stimulat*”) |
| | #3 | TI ( “gastrointestinal surger*” OR “abdominal surger*” OR “bowel surger*” OR “stomach surger*” OR “intestinal surger*” OR “colon surger*” OR “colorectal surger*” OR “hepatic surger*” OR “liver surger*” OR “pancreatic surger*” OR “small bowel surger*” OR “large bowel surger*” OR “open surger*” OR laparoscop* ) OR AB ( “gastrointestinal surger*” OR “abdominal surger*” OR “bowel surger*” OR “stomach surger*” OR “intestinal surger*” OR “colon surger*” OR “colorectal surger*” OR “hepatic surger*” OR “liver surger*” OR “pancreatic surger*” |

| Database | # | Index and keyword terms |
|---|---|---|
| | | OR “small bowel surger*” OR “large bowel surger*” OR “open surger*” OR laparoscop*) |
| | #4 | #1 OR #2 |
| | #5 | #3 AND #4 |
| Scopus (Elsevier) | #1 | TITLE-ABS-KEY ( "gastrointestinal surger*" OR "abdominal surger*" OR "bowel surger*" OR "stomach surger*" OR "intestinal surger*" OR "colon surger*" OR "colorectal surger*" OR "hepatic surger*" OR "liver surger*" OR "pancreatic surger*" OR "small bowel surger*" OR "large bowel surger*" OR "open surger*" OR laparoscop* ) |
| | #2 | TITLE-ABS-KEY ( "chewing gum" OR ( chew* W/5 gum ) OR "sham feeding" OR "vagal cholinergic stimulat*" OR "cephalic-vagal stimulat*") |
| | #3 | #1 AND #2 |
| The CENTRAL (Cochrane) | #1 | MeSH descriptor: [Digestive System Surgical Procedures] explode all trees |
| | #2 | MeSH descriptor: [Chewing Gum] explode all trees |
| | #3 | (“gastrointestinal NEXT surger*” OR “abdominal NEXT surger*” OR “bowel NEXT surger*” OR “stomach NEXT surger*” OR “intestinal NEXT surger*” OR “colon NEXT surger*” OR “colorectal NEXT surger*” OR “hepatic NEXT surger*” OR “liver NEXT surger*” OR “pancreatic NEXT surger*” OR “small bowel NEXT surger*” OR “large bowel NEXT surger*” OR “open NEXT surger*” OR laparoscop*):ti,ab |
| | #4 | (“chewing gum” OR (chew* NEAR/5 gum) OR “sham feeding” OR “vagal cholinergic NEXT stimulat*” OR “cephalic vagal NEXT stimulat*”):ti,ab |
| | #5 | #1 OR #3 |
| | #6 | #2 OR #4 |
| | #7 | #5 AND #6 |
| Web of Science (Clarivate) | #1 | TS=(“gastrointestinal surger*” OR “abdominal surger*” OR “bowel surger*” OR “stomach surger*” OR “intestinal surger*” OR “colon surger*” OR “colorectal surger*” OR “hepatic surger*” OR “liver surger*” OR “pancreatic surger*” OR “small bowel surger*” OR “large bowel surger*” OR “open surger*” OR laparoscop*) |
| | #2 | TS=(“chewing gum” OR (chew* NEAR/5 gum) OR “sham feeding” OR “vagal cholinergic stimulat*” OR “cephalic-vagal stimulat*”) |
| | #3 | #1 AND #2 |
| PROSPERO | #1 | gastrointestinal surgery OR abdominal surgery OR bowel surgery OR stomach surgery OR intestinal surgery OR colon surgery OR colorectal surgery OR hepatic surgery OR liver surgery OR pancreatic surgery OR small bowel surgery OR large bowel surgery OR laparoscopy OR open surgery |
| | #2 | chewing gum OR "chew* NEAR5 gum" OR sham feeding OR vagal cholinergic stimulation OR cephalic-vagal stimulation |
| | #3 | #1 AND #2 |

| Database | # | Index and keyword terms |
|---|---|---|
| ERIC (ProQuest) | #1 | mainsubject(gastrointestinal surgery) OR title((“gastrointestinal surger*” OR “abdominal surger*” OR “bowel surger*” OR “stomach surger*” OR “intestinal surger*” OR “colon surger*” OR “colorectal surger*” OR “hepatic surger*” OR “liver surger*” OR “pancreatic surger*” OR “small bowel surger*” OR “large bowel surger*” OR “open surger*” OR laparoscop*)) OR abstract((“gastrointestinal surger*” OR “abdominal surger*” OR “bowel surger*” OR “stomach surger*” OR “intestinal surger*” OR “colon surger*” OR “colorectal surger*” OR “hepatic surger*” OR “liver surger*” OR “pancreatic surger*” OR “small bowel surger*” OR “large bowel surger*” OR “open surger*” OR laparoscop*)) |
| | #2 | title(“chewing gum” OR (chew* NEAR/5 gum) OR “sham feeding” OR “vagal cholinergic stimulat*” OR “cephalic-vagal stimulat*”) OR abstract(“chewing gum” OR (chew* NEAR/5 gum) OR “sham feeding” OR “vagal cholinergic stimulat*” OR “cephalic-vagal stimulat*”) |
| | #3 | #1 AND #2 |

**Table A4.** Eight full-texts were excluded for reasons; the remaining 100 were either not systematic reviews/meta-analyses

| Author, Year | Reference of excluded studies | Reasons for exclusion |
|---|---|---|
| (Kristensen et al., 2008) | Kristensen, S. D., Lind, K., & Rosenberg, J. (2008). [Gum chewing reduces duration of postoperative ileus]. *Ugeskr Laeger*, *170*(39), 3062-3065. (Brug af tyggegummi reducerer varigheden af postoperativ ileus.) | Not in English |
| (Keller & Stein, 2013) | Keller, D., & Stein, S. L. (2013). Facilitating return of bowel function after colorectal surgery: alvimopan and gum chewing. *Clin Colon Rectal Surg*, *26*(3), 186-190. https://doi.org/10.1055/s-0033-1351137 | Different measurement for outcomes |
| (Wang & Chi, 2013) | Wang, X. J., & Chi, P. (2013). [Effect of chewing gum on the promotion of intestinal function recovery after colorectal surgery: a meta-analysis]. *Zhonghua wei chang wai ke za zhi = Chinese journal of gastrointestinal surgery*, *16*(11), 1078-1083. | Not in English |
| (Rada & Viñuela, 2014) | Rada, G., & Viñuela, J. (2014). Does chewing gum accelerate recovery after abdominal surgery? [Article]. *MEDWAVE*, *14*(11), e6058. https://doi.org/10.5867/medwave.2014.11.6058 | Not in English |
| (Wallström & Frisman, 2014) | Wallström, A., & Frisman, G. H. (2014). Facilitating early recovery of bowel motility after colorectal surgery: a systematic review [Review]. *JOURNAL OF CLINICAL NURSING*, *23*(1-2), 24-44. https://doi.org/10.1111/jocn.12258 | Different measurement for outcomes |
| (Flores-Funes et al., 2016) | Flores-Funes, D., Campillo-Soto, A., Pellicer-Franco, E., & Aguayo-Albasini, J. L. (2016). The use of coffee, chewing-gum and gastrograffin in the management of postoperative ileus: A review of current evidence. *CIRUGIA ESPANOLA*, *94*(9), 495-501. https://doi.org/10.1016/j.ciresp.2016.05.020 | Not in English |
| (Reibetanz & Germer, 2016) | Reibetanz, J., & Germer, C. T. (2016). [Chewing gum after elective colon surgery]. *CHIRURG*, *87*(10), 891. https://doi.org/10.1007/s00104-016-0284-0 (Kaugummikauen nach elektiver Kolonchirurgie.) | Not in English |
| (Miah et al., 2020) | Miah, N., Copeland, E., Mlevrije, Z., & Macaninch, E. (2020). A systematic review on dietary interventions to reduce postoperative ileus: coffee and chewing gum [Conference Abstract]. *CLINICAL NUTRITION ESPEN*, *35*, 223. https://doi.org/10.1016/j.clnesp.2019.12.038 | Only abstract |

**Table A5.** Critical appraisal for selected systematic reviews using AMSTAR-2

| References | 1 | 2* | 3 | 4* | 5 | 6 | 7* | 8 | 9* | 10 | 11* | 12 | 13* | 14 | 15* | 16 | Overall score |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Sinz et al., 2023) | Y | Y | N | PY | Y | Y | N | Y | Y | N | Y | Y | Y | Y | Y | Y | Low |
| (Roslan et al., 2020) | Y | Y | N | PY | Y | Y | N | Y | Y | N | Y | Y | Y | Y | Y | Y | Low |
| (Liu et al., 2017) | Y | N | N | PY | Y | Y | N | Y | Y | N | Y | Y | Y | Y | Y | Y | Critically low |
| (Mei et al., 2017) | Y | N | N | PY | Y | Y | N | Y | Y | N | N | N | Y | N | Y | Y | Critically low |
| (Song et al., 2016) | Y | N | N | PY | Y | Y | N | Y | Y | N | Y | N | Y | Y | N | Y | Critically low |
| (Short et al., 2015) | Y | Y | N | PY | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | High |
| (Su'a et al., 2015) | Y | N | N | PY | Y | N | N | N | Y | N | N | N | Y | Y | N | Y | Critically low |
| (Ho et al., 2014) | Y | Y | N | PY | Y | N | N | PY | Y | N | Y | Y | Y | N | Y | N | Low |
| (Li et al., 2013) | Y | N | N | PY | Y | Y | N | PY | Y | N | Y | Y | Y | Y | Y | Y | Critically low |
| (Yin et al., 2013) | Y | N | N | PY | Y | Y | N | N | Y | N | N | N | N | Y | N | Y | Critically low |
| (Fitzgerald & Ahmed 2009) | Y | N | N | PY | Y | Y | Y | N | Y | N | N | Y | Y | Y | Y | N | Critically low |
| (Nobel et al., 2009) | N | N | N | PY | Y | Y | N | N | N | N | N | N | Y | Y | Y | Y | Critically low |
| (Parnaby et al., 2009) | Y | N | N | PY | N | Y | Y | PY | Y | N | Y | N | N | Y | Y | N | Critically low |
| (Vásquez et al., 2009) | Y | N | N | PY | Y | N | N | N | N | N | N | N | N | N | Y | N | Critically low |
| (de Castro et al., 2008) | Y | N | N | PY | Y | Y | N | N | Y | N | N | N | N | N | N | N | Critically low |
| (Purkayastha et al., 2008 | Y | N | N | PY | N | Y | N | PY | Y | N | Y | N | N | Y | Y | N | Critically low |
| (Chan & Law, 2007) | Y | N | N | PY | Y | Y | N | N | Y | N | Y | Y | N | Y | Y | N | Critically low |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yes/Partial yes | 16 | 4 | 0 | 17 | 15 | 14 | 3 | 10 | 15 | 1 | 10 | 8 | 11 | 13 | 13 | 10 | |

AMSTAR-2 16 items: (*=Critical domain), Y=Yes, PY=Partial Yes, N=No, NA=Non-applicable

1= Did the research questions and inclusion criteria for the review include the components of PICO? 2= Did the report of the review contain an explicit statement that the review methods were established prior to conduct of the review and did the report justify any significant deviations from the protocol? 3= Did the review authors explain their selection of the study designs for inclusion in the review? 4= Did the review authors use a comprehensive literature search strategy? 5= Did the review authors perform study selection in duplicate? 6= Did the review authors perform data extraction in duplicate? 7= Did the review authors provide a list of excluded studies and justify the exclusions? 8= Did the review authors describe the included studies in adequate detail? 9= Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review? 10= Did the review authors report on the sources of funding for the studies included in the review? 11= If meta-analysis was justified did the review authors use appropriate methods for statistical combination of results? 12= If meta-analysis was performed did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis? 13= Did the review authors account for RoB in individual studies when interpreting/ discussing the results of the review? 14= Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review? 15= If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review? 16= Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?

Overall score: High=No or 1 non-critical weakness; Moderate=>1 non-critical weakness; Low=1 critical flaw with or without non-critical weakness; Critically low=>1 critical flaw with or without non-critical weakness

**Table A6.** The credibility of the evidence for meta-analyses included in this umbrella review

| Outcomes | Authors, Year | Sample Size | Number of studies | Significance threshold reached (p-value) | 95% prediction interval rule | Estimate of Heterogeneity ($I^2$) | Small-study effects or excess significance bias | Random-effects summary effect size (MD) | 95% CI (Lower CI) | 95% CI (Upper CI) | Credibility of evidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TFF | (Sinz et al., 2023) | 1407 | 24 | p<0.001 | No report | $I^2$=92% | Did not provide statistical significance test | -11 | 15.8 | -6.1 | Suggestive |
| | (Roslan et al., 2020) | 236 | 7 | p < 0.00001 | No report | $I^2$=17% | Did not provide statistical significance test | -0.31 | -0.36 | -0.26 | Weak |
| | (Liu et al., 2017) | 692 | 16 | P=0.0002 | No report | $I^2$=91% | Did not provide statistical significance test | -8.81 | -13.45 | -4.17 | Weak |
| | (Mei et al., 2017) | 249 | 10 | p=0.006 | No report | $I^2$=78% | Did not provide statistical significance test | -0.55 | -0.94 | -0.16 | Weak |
| | (Song et al., 2016) | 1068 | 25 | p<0.00001 | No report | $I^2$=93% | Did not provide statistical significance test | -12.14 | -15.71 | -8.56 | Suggestive |
| | (Short et al., 2015) | 4109 | 77 | p<0.00001 | No report | $I^2$=96% | Did not provide statistical significance test | -10.43 | -11.94 | -8.92 | Suggestive |
| | (Su'a et al., 2015) | 467 | 12 | p<0.00001 | No report | $I^2$=88% | Did not provide statistical significance test | -6.78 | -7.64 | -5.92 | Weak |
| | (Li et al., 2013) | 686 | 17 | p=0.0001 | No report | $I^2$=73.5% | No small-study effects (Egger's test: p=0.580) | -0.31 | -0.43 | -0.19 | Weak |
| | (Yin et al., 2013) | 560 | 13 | p<0.00001 | No report | $I^2$=60% | Did not provide statistical significance test | -9.21 | -12.07 | -6.34 | Weak |
| | (Fitzgerald & Ahmed 2009) | 144 | 7 | p=0.005 | No report | $I^2$=63.2% | Did not provide statistical significance test | -12.6 | -21.49 | -3.72 | Weak |
| | (Nobel et al., 2009 | 227 | 9 | p<0.001 | No report | $I^2$=57.5% | Did not provide statistical significance test | -13.75 | -19.62 | -7.87 | Weak |
| | (Vásquez et al., 2009) | 132 | 6 | p=0.004 | No report | $I^2$=62% | Did not provide statistical significance test | -14 | -23.45 | -4.55 | Weak |
| | (de Castro et al., 2008) | 78 | 5 | p=0.0005 | No report | $I^2$=58.7% | Did not provide statistical significance test | -19.3 | -30.19 | -8.42 | Weak |
| | (Purkayastha et al., 2008) | 78 | 5 | p=0.005 | No report | $I^2$=80.1% | Did not provide statistical significance test | -0.66 | -1.11 | -0.2 | Weak |
| | (Chan & Law, 2007) | 56 | 4 | p=0.0006 | No report | $I^2$=65.8% | Did not provide statistical significance test | -20.78 | -32.64 | -8.93 | Weak |
| TFBM | (Sinz et al., 2023) | 1446 | 24 | p<0.001 | No report | $I^2$=84% | Did not provide statistical significance test | -18 | -23.2 | -12.8 | Suggestive |
| | (Roslan et al., 2020) | 391 | 8 | p < 0.00001 | No report | $I^2$=55% | Did not provide statistical significance test | -0.47 | -0.6 | -0.34 | Weak |
| | (Liu et al., 2017) | 719 | 16 | p<0.00001 | No report | $I^2$=82% | Did not provide statistical significance test | -16.43 | -22.68 | -10.19 | Weak |

| Outcomes | Authors, Year | Sample Size | Number of studies | Significance threshold reached (p-value) | 95% prediction interval rule | Estimate of Heterogeneity ($I^2$) | Small-study effects or excess significance bias | Random-effects summary effect size (MD) | 95% CI (Lower CI) | 95% CI (Upper CI) | Credibility of evidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Mei et al., 2017a) | 69 | 4 | p=0.29 | No report | $I^2$=88% | Did not provide statistical significance test | -0.96 | -2.74 | -0.16 | No significant |
| | (Mei et al., 2017b) | 176 | 6 | p<0.0001 | No report | $I^2$=41% | Did not provide statistical significance test | -0.6 | -0.87 | -0.33 | Weak |
| | (Song et al., 2016) | 810 | 21 | p<0.00001 | No report | $I^2$=96% | Did not provide statistical significance test | -17.32 | -23.41 | -11.22 | Weak |
| | (Short et al., 2015) | 3613 | 62 | p<0.00001 | No report | $I^2$=96% | Did not provide statistical significance test | -12.66 | -14.48 | -10.85 | Suggestive |
| | (Su'a et al., 2015) | 442 | 11 | p<0.00001 | No report | $I^2$=75% | Did not provide statistical significance test | -8.38 | -9.52 | -7.23 | Weak |
| | (Li et al., 2013) | 573 | 14 | p=0.0001 | No report | $I^2$=86.4% | No small-study effects (Egger's test: p=0.287) | -0.51 | -0.73 | -0.29 | Weak |
| | (Yin et al., 2013) | 567 | 13 | p<0.00001 | No report | $I^2$=91% | Did not provide statistical significance test | -11.42 | -16.06 | -6.79 | Weak |
| | (Fitzgerald & Ahmed 2009) | 122 | 6 | p<0.0001 | No report | $I^2$=43.7% | Did not provide statistical significance test | -23.11 | -34.32 | -11.91 | Weak |
| | (Nobel et al., 2009) | 191 | 7 | p<0.001 | No report | $I^2$=51.1% | Did not provide statistical significance test | -20.72 | -29.29 | -12.14 | Weak |
| | (Vásquez et al., 2009) | 93 | 4 | p=0.005 | No report | $I^2$=58% | Did not provide statistical significance test | -24.99 | -42.31 | -7.66 | Weak |
| | (de Castro et al., 2008) | 78 | 5 | p=0.0004 | No report | $I^2$=46.1% | Did not provide statistical significance test | -29.67 | -46.03 | -13.32 | Weak |
| | (Purkayastha et al., 2008 | 78 | 5 | p=0.002 | No report | $I^2$=79.1% | Did not provide statistical significance test | -1.1 | -1.79 | -0.42 | Weak |
| | (Chan & Law, 2007) | 56 | 4 | p=0.0002 | No report | $I^2$=50.3% | Did not provide statistical significance test | -33.25 | -50.8 | -15.7 | Weak |
| LOS | (Sinz et al., 2023) | 2053 | 23 | p<0.001 | No report | $I^2$=77% | Did not provide statistical significance test | -0.9 | -1.3 | -0.4 | Suggestive |
| | (Roslan et al., 2020) | 405 | 8 | p = 0.28 | No report | $I^2$=19% | Did not provide statistical significance test | -0.18 | -0.92 | 0.55 | No significant |
| | (Liu et al., 2017) | 818 | 16 | p=0.03 | No report | $I^2$=90% | Did not provide statistical significance test | -0.89 | -1.72 | -0.07 | Weak |
| | (Mei et al., 2017) | 519 | 12 | p=0.01 | No report | $I^2$=85% | Did not provide statistical significance test | -0.88 | -1.59 | -0.17 | Weak |
| | (Song et al., 2016) | 856 | 20 | p=0.0004 | No report | $I^2$=71% | Did not provide statistical significance test | -1.1 | -1.71 | -0.5 | Weak |
| | (Short et al., 2015) | 2613 | 50 | p<0.00001 | No report | $I^2$=86% | Did not provide statistical significance test | -0.68 | -0.84 | -0.53 | Suggestive |

| Outcomes | Authors, Year | Sample Size | Number of studies | Significance threshold reached (p-value) | 95% prediction interval rule | Estimate of Heterogeneity ($I^2$) | Small-study effects or excess significance bias | Random-effects summary effect size (MD) | 95% CI (Lower CI) | 95% CI (Upper CI) | Credibility of evidence |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | (Su'a et al., 2015) | 320 | 9 | p<0.00001 | No report | $I^2$=90% | Did not provide statistical significance test | -0.25 | -0.34 | -0.16 | Weak |
| | (Li et al., 2013) | 600 | 12 | p=0.0001 | No report | $I^2$=87.3% | No small-study effects (Egger's test: p=0.078) | -0.72 | -1.02 | -0.43 | Weak |
| | (Yin et al., 2013) | 541 | 11 | p=0.0003 | No report | $I^2$=84% | Did not provide statistical significance test | -12.23 | -18.8 | -5.67 | Weak |
| | (Fitzgerald & Ahmed 2009) | 134 | 6 | p=0.11 | No report | $I^2$=77.9% | Did not provide statistical significance test | -23.8 | -53.29 | 5.53 | No significant |
| | (Nobel et al., 2009) | 208 | 7 | p=0.016 | No report | $I^2$=78% | Did not provide statistical significance test | -1.05 | -1.83 | -0.27 | Weak evidence |
| | (Vásquez et al., 2009) | 121 | 5 | p=0.10 | No report | $I^2$=81% | Did not provide statistical significance test | -26.17 | -57.51 | 5.18 | No significant |
| | (de Castro et al., 2008) | 68 | 4 | p=0.19 | No report | $I^2$=73.1% | Did not provide statistical significance test | -1.26 | -3.16 | -0.64 | No significant |
| | (Purkayastha et al., 2008 | 68 | 4 | p=0.23 | No report | $I^2$=94.1% | Did not provide statistical significance test | -1.25 | -3.27 | 0.77 | No significant |
| | (Chan & Law, 2007) | 46 | 3 | p<0.00001 | No report | $I^2$=0% | Did not provide statistical significance test | -2.44 | -3.1 | -1.77 | Weak |

**Table A7.** Overlapping studies (Between-studies overlaps) K=39

| **Study, Year** | Sinz et al., 2023 | Roslan et al., 2020 | Liu et al., 2017 | Mei et al., 2017 | Song et al., 2016 | Short et al., 2015 | Su'a et al., 2015 | Ho et al., 2014 | Li et al., 2013 | Yin et al., 2013 | Fitzgerald & Ahmed 2009 | Nobel et al., 2009 | Parnaby et al., 2009 | Vásquez et al., 2009 | de Castro et al., 2008 | Purkayastha et al., 2008 | Chan & Law, 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Abbassi et al., 2022 | | | | | | | | | | | | | | | | | |
| Abd-El-Maeboud et al., 2009 | | | | | | | | | | | | | | | | | |
| Abdollahi et al., 2013 | | | | | | | | | | | | | | | | | |
| Akhlaghi et al., 2008 | | | | | | | | | | | | | | | | | |
| Asao et al., 2002 | | | | | | | | | | | | | | | | | |
| Askarpour et al., 2009 | | | | | | | | | | | | | | | | | |
| Atkinson et al., 2016 | | | | | | | | | | | | | | | | | |
| Bahena Aponte et al., 2010 | | | | | | | | | | | | | | | | | |
| Bhatti et al., 2021 | | | | | | | | | | | | | | | | | |
| Bonventre et al., 2014 | | | | | | | | | | | | | | | | | |
| Byrne et al., 2018 | | | | | | | | | | | | | | | | | |
| Cabrera et al., 2012 | | | | | | | | | | | | | | | | | |
| Cao et al., 2008 | | | | | | | | | | | | | | | | | |
| Cavuşoğlu et al., 2009 | | | | | | | | | | | | | | | | | |
| Chen et al., 2010 | | | | | | | | | | | | | | | | | |
| Chen et al., 2011 | | | | | | | | | | | | | | | | | |
| Chen et al., 2012 | | | | | | | | | | | | | | | | | |
| Choi et al., 2011 | | | | | | | | | | | | | | | | | |
| Choi et al., 2014 | | | | | | | | | | | | | | | | | |
| Chou et al., 2006 | | | | | | | | | | | | | | | | | |

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| Chuamor & Thongdonjuy, 2014 | | | | | | ■ | | | | | | | | | | | |
| Crainic et al., 2009 | ■ | ■ | ■ | | ■ | ■ | ■ | | ■ | | | | | | | | |
| de Leede et al., 2018 | ■ | | | | | | | | | | | | | | | | |
| Dulskas et al., 2015 | ■ | | | | | | | | | | | | | | | | |
| Duluklu et al., 2020 | ■ | | | | | | | | | | | | | | | | |
| Ertas et al., 2013 | | | | | | ■ | | | | | | | | | | | |
| Fan et al., 2009 | | | | | ■ | ■ | | | | | | | | | | | |
| Forrester et al., 2014 | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | |
| Garshasbi & Behboudi, 2011 | | | | | | ■ | | | | | | | | | | | |
| Ge et al., 2017 | ■ | | | | | | | | | | | | | | | | |
| Ghafouri et al., 2008 | | | | | | ■ | | | | | | | | | | | |
| Gong, 2011 | | | | | | ■ | | | | | | | | | | | |
| Guanqing et al., 2011 | | | | | | ■ | | | | | | | | | | | |
| Han et al., 2011 | | | | | | ■ | | | | | | | | | | | |
| Hasler-Gehrer et al., 2019 | ■ | | | | | | | | | | | | | | | | |
| Hirayama et al., 2006 | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Huang et al., 2012a | | | | | | ■ | | | | | | | | | | | |
| Huang et al., 2012b | | | | | | ■ | | | | | | | | | | | |
| Husslein et al., 2013 | | | | | | ■ | | | | | | | | | | | |
| Hwang et al.,2013 | | | | ■ | | | | | | | | | | | | | |
| Jakkaew & Charoenkwan, 2013 | | | | | | ■ | ■ | | | | | | | | | | |
| Jernigan et al., 2014 | | | | | | ■ | | | | | | | | | | | |
| Jin et al., 2010 | | | | | | ■ | | | | | | | | | | | |
| Kafali et al., 2010 | | | | | | ■ | | | ■ | ■ | | | | | | | |
| Kobayashi et al., 2015 | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Kouba et al., 2007 | | | | | | | | | | | | | | | | | |
| Ledari et al., 2012 | | | | | | | | | | | | | | | | | |
| Lee et al., 2004 | | | | | | | | | | | | | | | | | |
| Li and Chai, 2007 | | | | | | | | | | | | | | | | | |
| Li, 2012a | | | | | | | | | | | | | | | | | |
| Li, 2012b | | | | | | | | | | | | | | | | | |
| Liang et al., 2007 | | | | | | | | | | | | | | | | | |
| Lim et al., 2013 | | | | | | | | | | | | | | | | | |
| Lu & Zhao, 2010 | | | | | | | | | | | | | | | | | |
| Lu et al., 2010 | | | | | | | | | | | | | | | | | |
| Lu et al., 2011 | | | | | | | | | | | | | | | | | |
| Luo et al., 2010 | | | | | | | | | | | | | | | | | |
| Marwah et al., 2012 | | | | | | | | | | | | | | | | | |
| Matros et al., 2006 | | | | | | | | | | | | | | | | | |
| McCormick et al., 2005 | | | | | | | | | | | | | | | | | |
| Müller et al., 2012 | | | | | | | | | | | | | | | | | |
| Ngowe et al., 2010 | | | | | | | | | | | | | | | | | |
| Park & Chung, 2009 | | | | | | | | | | | | | | | | | |
| Parnasa et al., 2021 | | | | | | | | | | | | | | | | | |
| Pilehvarzadeh et al., 2014 | | | | | | | | | | | | | | | | | |
| Piric et al., 2015 | | | | | | | | | | | | | | | | | |
| Qiao, 2011 | | | | | | | | | | | | | | | | | |
| Qiu & Ren, 2006 | | | | | | | | | | | | | | | | | |
| Quah et al., 2006 | | | | | | | | | | | | | | | | | |
| Rashad & Yousef, 2013 | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ray et al., 2008 | | | | | | | | | | | | | | | | | |
| Ren & Qin, 2010 | | | | | | | | | | | | | | | | | |
| Safdari-Dehcheshmehi et al., 2011 | | | | | | | | | | | | | | | | | |
| Satij & Cohen, 2006 | | | | | | | | | | | | | | | | | |
| Schluender et al., 2006 | | | | | | | | | | | | | | | | | |
| Schuster et al., 2006 | | | | | | | | | | | | | | | | | |
| Schweizer & Häne, 2010 | | | | | | | | | | | | | | | | | |
| Shang et al., 2010 | | | | | | | | | | | | | | | | | |
| Shum et al., 2016 | | | | | | | | | | | | | | | | | |
| Sun et al., 2005 | | | | | | | | | | | | | | | | | |
| Tan & Tang, 2011 | | | | | | | | | | | | | | | | | |
| Terzioglu et al., 2013 | | | | | | | | | | | | | | | | | |
| Tian et al., 2013 | | | | | | | | | | | | | | | | | |
| Topcu & Oztekin, 2016 | | | | | | | | | | | | | | | | | |
| van den Heijkant et al., 2015 | | | | | | | | | | | | | | | | | |
| Vergara-Fernandez et al., 2016 | | | | | | | | | | | | | | | | | |
| Wang et al., 2008 | | | | | | | | | | | | | | | | | |
| Wang et al., 2011a | | | | | | | | | | | | | | | | | |
| Wang et al., 2011b | | | | | | | | | | | | | | | | | |
| Wang et al., 2016 | | | | | | | | | | | | | | | | | |
| Wang, 2009 | | | | | | | | | | | | | | | | | |
| Watson et al., 2008 | | | | | | | | | | | | | | | | | |
| Webster et al., 2007 | | | | | | | | | | | | | | | | | |
| Yang et al., 2017 | | | | | | | | | | | | | | | | | |
| Yang et al., 2018 | | | | | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yang, 2011 | | | | | | | | | | | | | | | | | |
| Yi et al., 2013 | | | | | | | | | | | | | | | | | |
| Zaghiyan et al., 2013 | | | | | | | | | | | | | | | | | |
| Zamora & Kalalo, 2012 | | | | | | | | | | | | | | | | | |
| Zhang & Zhao, 2008 | | | | | | | | | | | | | | | | | |
| Zhang et al., 2015 | | | | | | | | | | | | | | | | | |
| Zhao & Zhang 2008 | | | | | | | | | | | | | | | | | |
| Zhong et al., 2009 | | | | | | | | | | | | | | | | | |

**N: total number of primary studies including repeated studies**: 286
**r: number of rows or index publication:** 103
c: number of columns or reviews: 17
Number of overlapped primary studies: 39
% overlap = overlapped studies/r: 39/103 (37.86%)
CA (covered area) = N/rc: 286/175 (0.16)
CCA (corrected covered area) = N-r/rc-r: 183/164 (11.10)

**Table A8.** Overlapping studies

| **Reviews** | Sinz et al., 2023 | | Roslan et al., 2020 | | Liu et al., 2017 | | Mei et al., 2017 | | Song et al., 2016 | | Short et al., 2015 | | Su'a et al., 2015 | | Ho et al., 2014 | | Li et al., 2013 | | Yin et al., 2013 | | Fitzgerald & Ahmed 2009 | | Nobel et al., 2009 | | Parnaby et al., 2009 | | Vásquez et al., 2009 | | de Castro et al., 2008 | | Purkayastha et al., 2008 | | Chan & Law, 2007 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 32 | % | 16 | % | 18 | % | 17 | % | 26 | % | 81 | % | 12 | % | 10 | % | 17 | % | 14 | % | 7 | % | 9 | % | 6 | % | 6 | % | 5 | % | 5 | % | 5 | % |
| Sinz et al., 2023 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Roslan et al., 2020 | 16 | 50.00% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Liu et al., 2017 | 18 | 56.25% | 15 | 78.95% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mei et al., 2017 | 15 | 44.12% | 13 | 65.00% | 15 | 75.00% | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Song et al., 2016 | 15 | 34.88% | 13 | 44.83% | 15 | 51.72% | 13 | 43.33% | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Short et al., 2015 | 13 | 13.00% | 9 | 10.23% | 11 | 12.50% | 9 | 10.11% | 20 | 22.99% | | | | | | | | | | | | | | | | | | | | | | | | |
| Su'a et al., 2015 | 8 | 22.22% | 6 | 27.27% | 7 | 30.43% | 6 | 26.09% | 7 | 22.58% | 12 | 14.81% | | | | | | | | | | | | | | | | | | | | | | |
| Ho et al., 2014 | 8 | 23.53% | 6 | 30.00% | 8 | 40.00% | 8 | 42.11% | 10 | 38.46% | 10 | 12.35% | 6 | 37.50% | | | | | | | | | | | | | | | | | | | | |
| Li et al., 2013 | 9 | 22.50% | 6 | 22.22% | 7 | 25.00% | 6 | 21.43% | 8 | 22.86% | 17 | 20.99% | 8 | 38.10% | 7 | 35.00% | | | | | | | | | | | | | | | | | | |
| Yin et al., 2013 | 6 | 15.00% | 5 | 20.00% | 6 | 23.08% | 6 | 24.00% | 7 | 21.21% | 14 | 17.28% | 6 | 30.00% | 7 | 41.18% | 13 | 72.22% | | | | | | | | | | | | | | | | |
| Fitzgerald and Ahmed 2009 | 5 | 14.71% | 5 | 27.78% | 5 | 25.00% | 6 | 33.33% | 6 | 22.22% | 6 | 7.32% | 4 | 26.67% | 6 | 54.55% | 7 | 41.18% | 7 | 50.00% | | | | | | | | | | | | | | |
| Nobel et al., 2009 | 5 | 13.89% | 5 | 25.00% | 5 | 22.73% | 6 | 30.00% | 7 | 25.00% | 8 | 9.76% | 4 | 23.53% | 7 | 58.33% | 7 | 36.84% | 7 | 43.75% | 6 | 60.00% | | | | | | | | | | | | |
| Parnaby et al., 2009 | 4 | 11.76% | 5 | 29.41% | 5 | 26.32% | 6 | 35.29% | 6 | 23.08% | 6 | 7.41% | 4 | 28.57% | 6 | 60.00% | 6 | 35.29% | 6 | 42.86% | 5 | 62.50% | 5 | 50.00% | | | | | | | | | | |
| Vásquez et al., 2009 | 5 | 15.15% | 5 | 29.41% | 5 | 26.32% | 6 | 35.29% | 6 | 23.08% | 6 | 7.41% | 4 | 28.57% | 6 | 60.00% | 6 | 35.29% | 6 | 42.86% | 6 | 85.71% | 6 | 66.67% | 5 | 71.43% | | | | | | | | |
| de Castro et al., 2008 | 5 | 15.63% | 5 | 31.25% | 5 | 27.78% | 5 | 29.41% | 5 | 19.23% | 5 | 6.17% | 4 | 30.77% | 5 | 50.00% | 5 | 29.41% | 5 | 35.71% | 5 | 71.43% | 5 | 55.56% | 4 | 57.14% | 5 | 83.33% | | | | | | |
| Purkayastha et al., 2008 | 5 | 15.63% | 5 | 31.25% | 5 | 27.78% | 5 | 29.41% | 5 | 19.23% | 5 | 6.17% | 4 | 30.77% | 5 | 50.00% | 5 | 29.41% | 5 | 35.71% | 5 | 71.43% | 5 | 55.56% | 4 | 57.14% | 5 | 83.33% | 5 | 100.00% | | | | |
| Chan & Law, 2007 | 5 | 15.63% | 5 | 31.25% | 5 | 27.78% | 5 | 29.41% | 5 | 19.23% | 5 | 6.17% | 4 | 30.77% | 5 | 50.00% | 5 | 29.41% | 5 | 35.71% | 5 | 71.43% | 5 | 55.56% | 4 | 57.14% | 5 | 83.33% | 5 | 100.00% | 5 | 100.00% | | |

Yellow=moderate (6–10%), Orange=high (11–15%), Red=extremely high: >15%

**Figure A1.1.** Forest plot of effect sizes of meta-analysed data for time to first flatus.

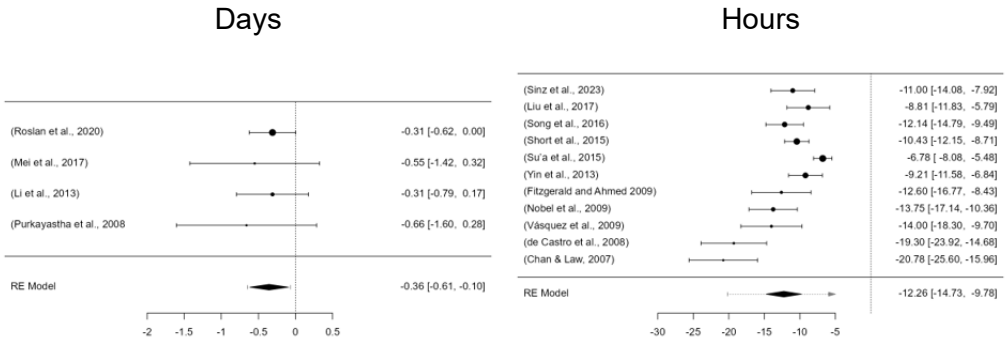



**Figure A1.2.** Forest plot of effect sizes of study data for time to first flatus

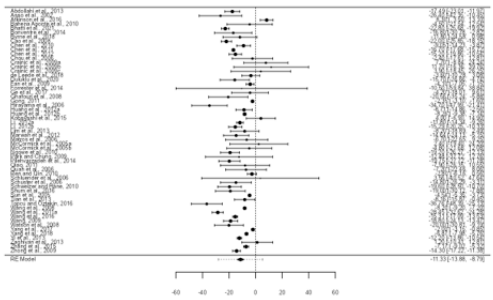
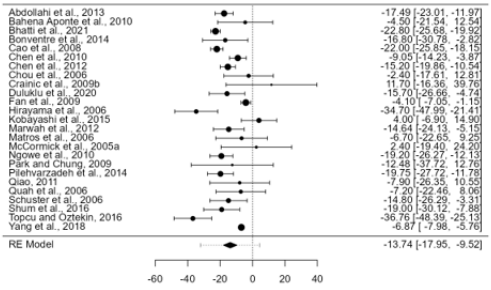
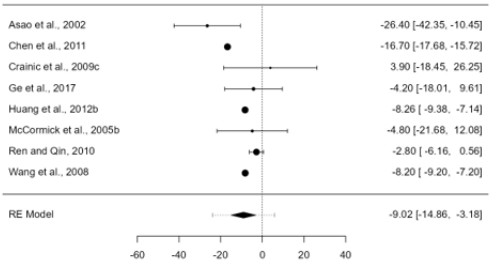


**Figure A1.3.** Subgroup analysis of forest plot of effect sizes of study data for time to first flatus by types of surgery.

Open surgery




Laparoscopic surgery




Mix

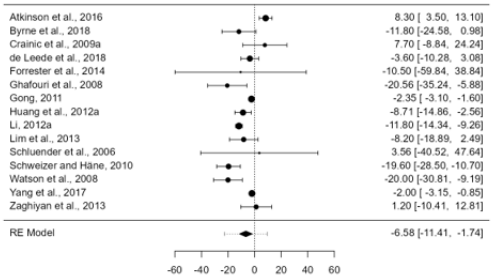


**Figure A1.4.** Subgroup analysis of forest plot of effect sizes of study data for time to first flatus by cancer status.

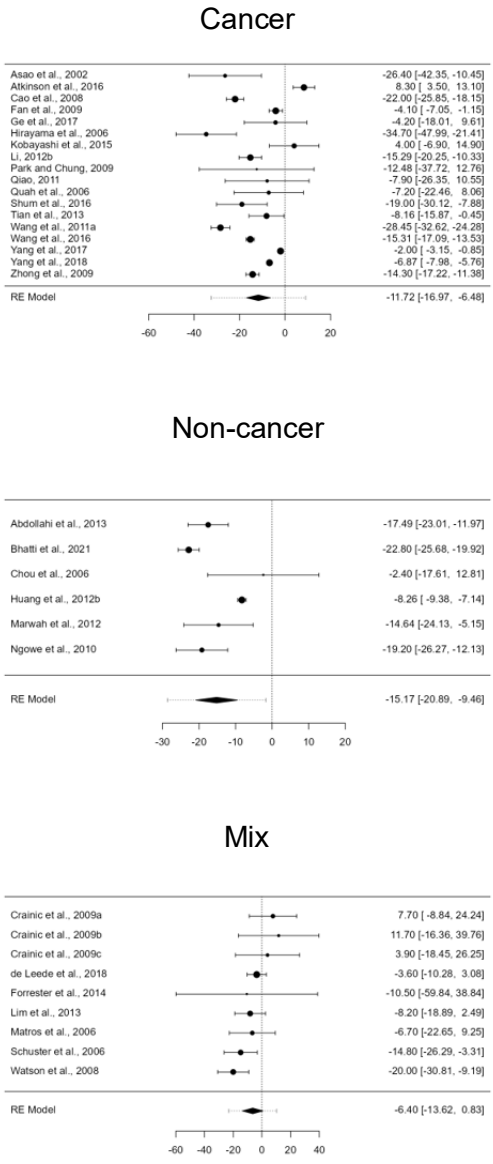
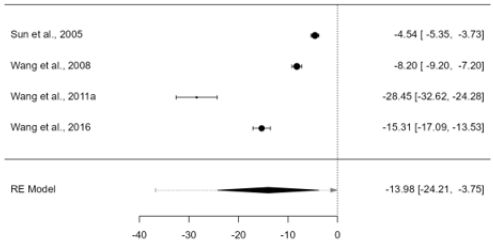
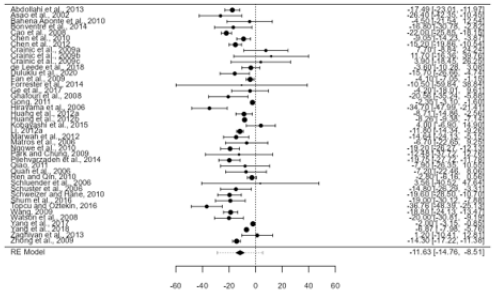


**Figure A1.5.** Subgroup analysis of forest plot of effect sizes of study data for time to first flatus by chewing frequency.

<2x/Days




3x/Days



>4x/Days

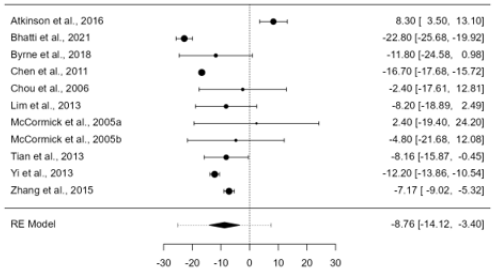
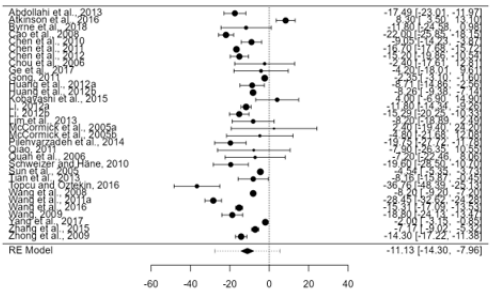
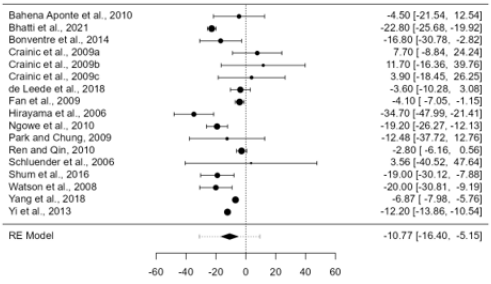


**Figure A1.6.** Subgroup analysis of forest plot of effect sizes of study data for time to first flatus by chewing duration.

<30 Min




≥30 min




≥45 min

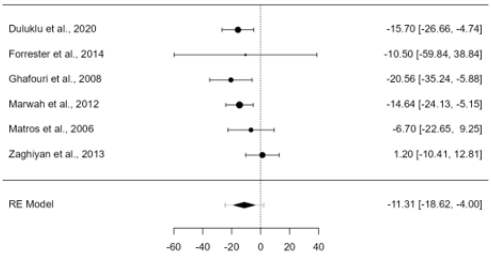


**Figure A2.1.** Forest plot of effect sizes of meta-analysed data for time to first bowel movement.

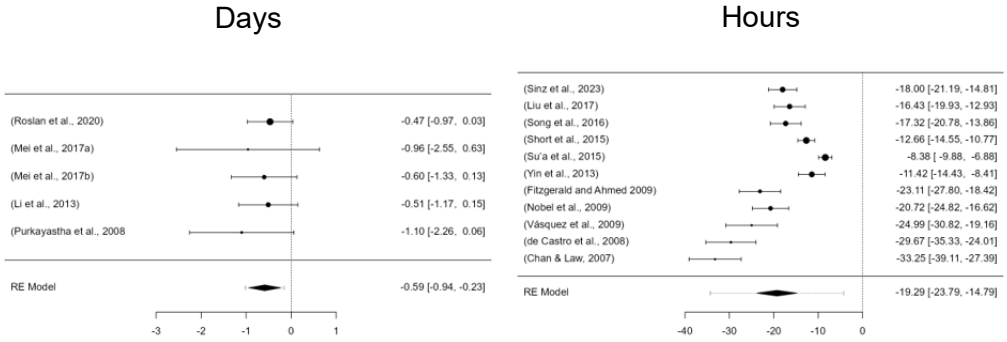



**Figure A2.2.** Forest plot of effect sizes of study data for time to first bowel movement.

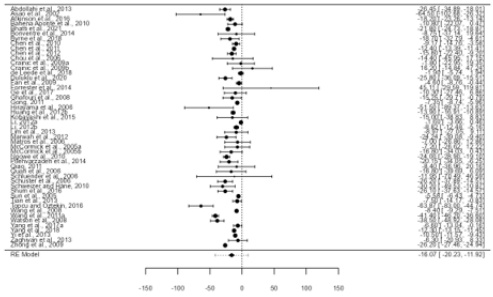
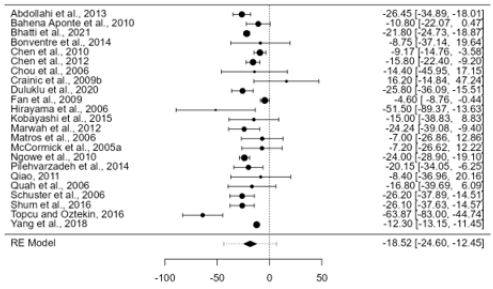
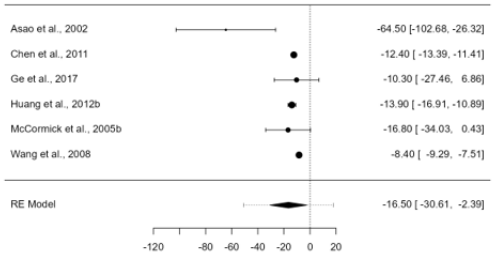


**Figure A2.3.** Subgroup analysis of forest plot of effect sizes of study data for time to first bowel movement by types of surgery.

Open surgery




Laparoscopic surgery




Mix

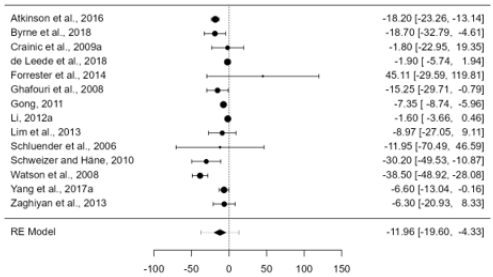
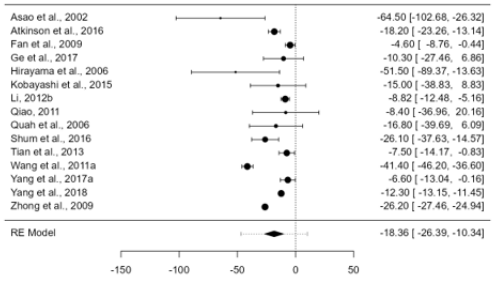
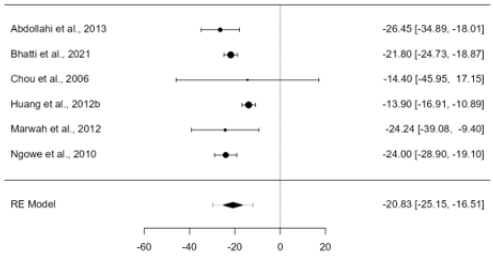


**Figure A2.4.** Subgroup analysis of forest plot of effect sizes of study data for time to first bowel movement by cancer status.

Cancer




Non-cancer




Mix

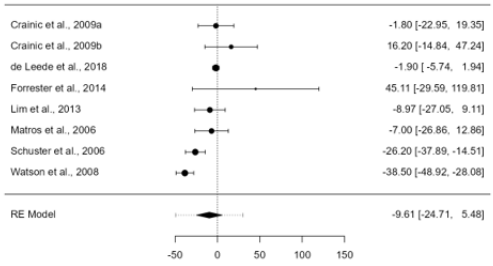
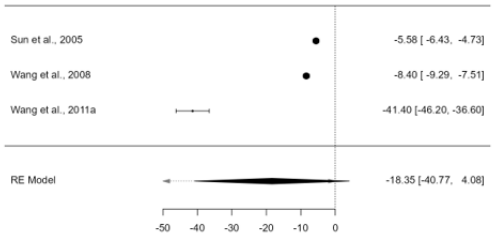
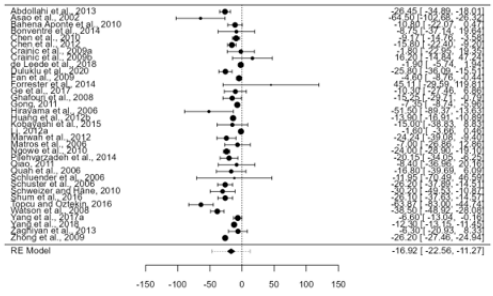


**Figure A2.5.** Subgroup analysis of forest plot of effect sizes of study data for time to first bowel movement by chewing frequency.

< 2 Days




3 Days




> 4 Days

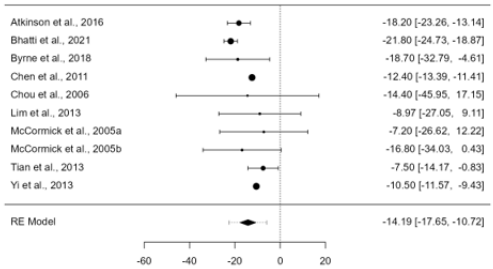
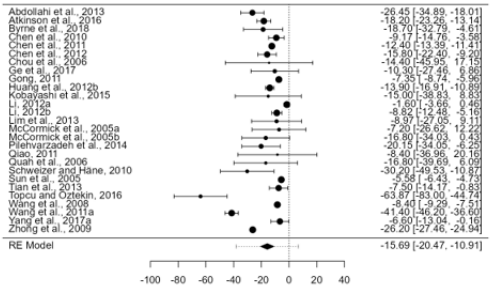
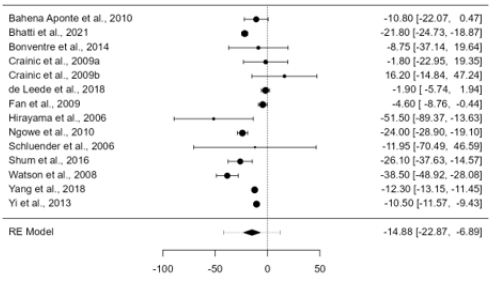


**Figure A2.6.** Subgroup analysis of forest plot of effect sizes of study data for time to first bowel movement by chewing duration.

< 30 Min




≥ 30 min




≥ 45 min

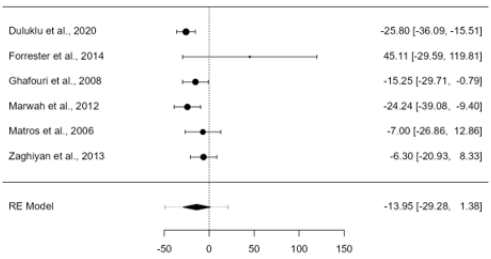


**Figure A3.1.** Forest plot of effect sizes of meta-analysed data for length of stay.

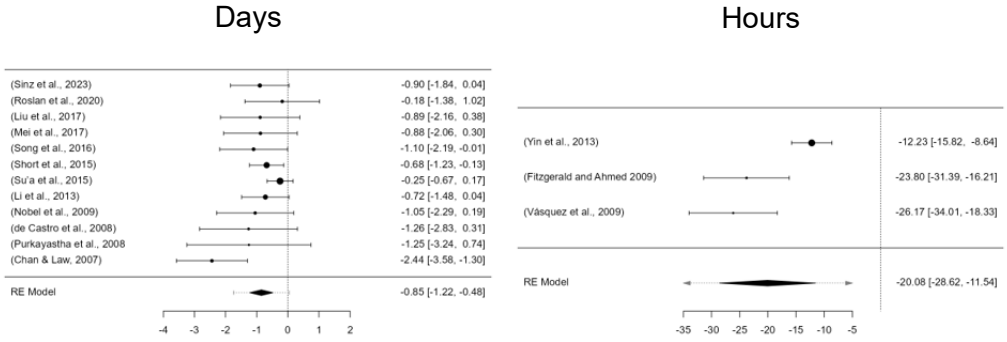



**Figure A3.2.** Forest plot of effect sizes of study data for length of stay.

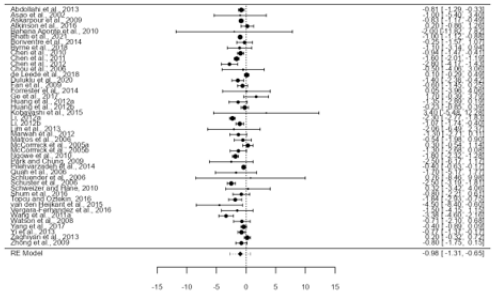
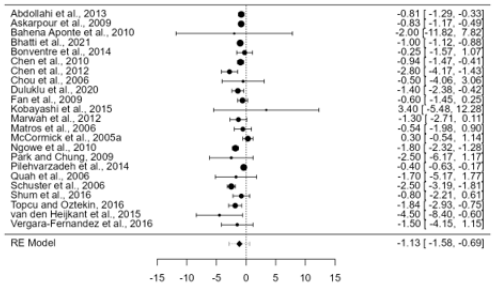
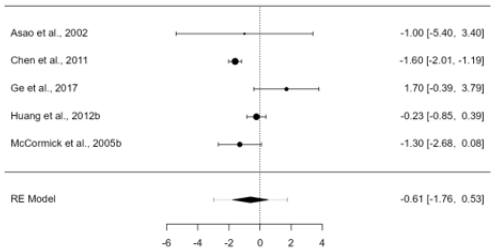


**Figure A3.3.** Subgroup analysis of forest plot of effect sizes of study data for length of stay by types of surgery.

Open surgery




Laparoscopic surgery




Mix

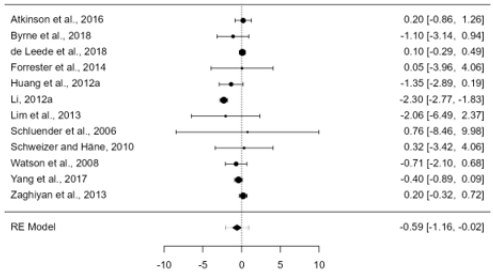


**Figure A3.4.** Subgroup analysis of forest plot of effect sizes of study data for length of stay by cancer status.

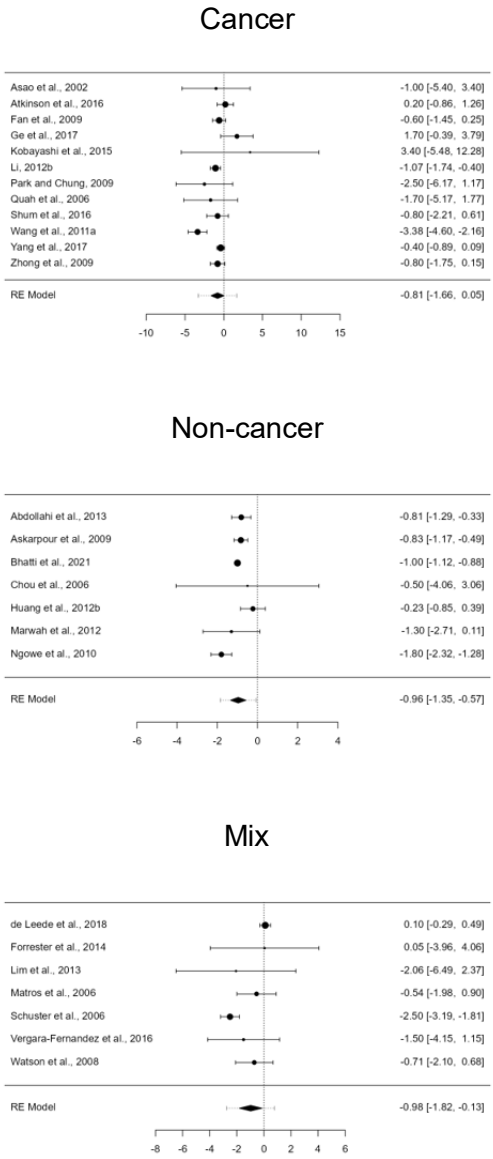
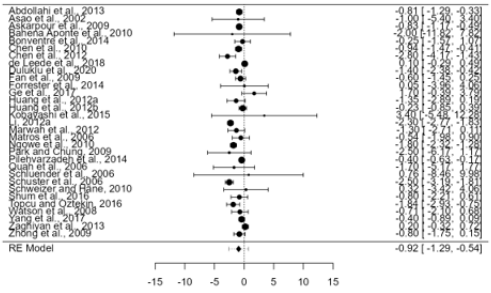


**Figure A3.5.** Subgroup analysis of forest plot of effect sizes of study data for length of stay by chewing frequency.

3 Days




> 4 Days

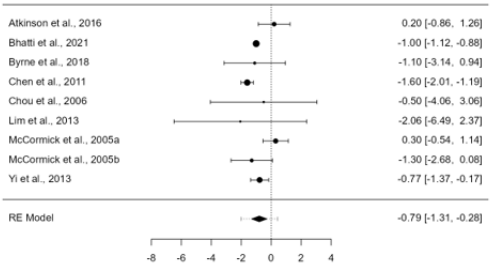
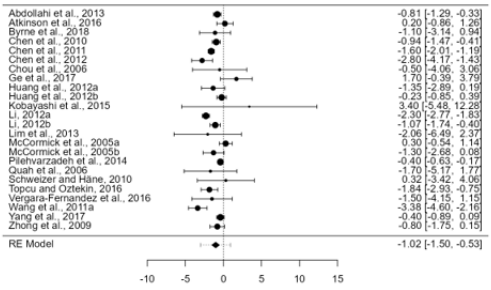
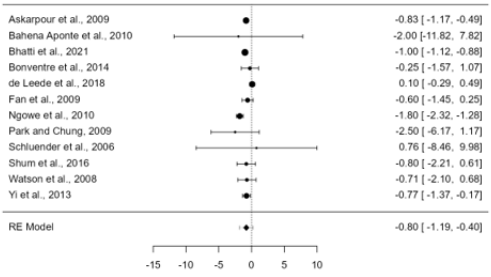


**Figure A3.6.** Subgroup analysis of forest plot of effect sizes of study data for length of stay by chewing duration.

< 30 Min




≥ 30 min




≥ 45 min