Additional file 1

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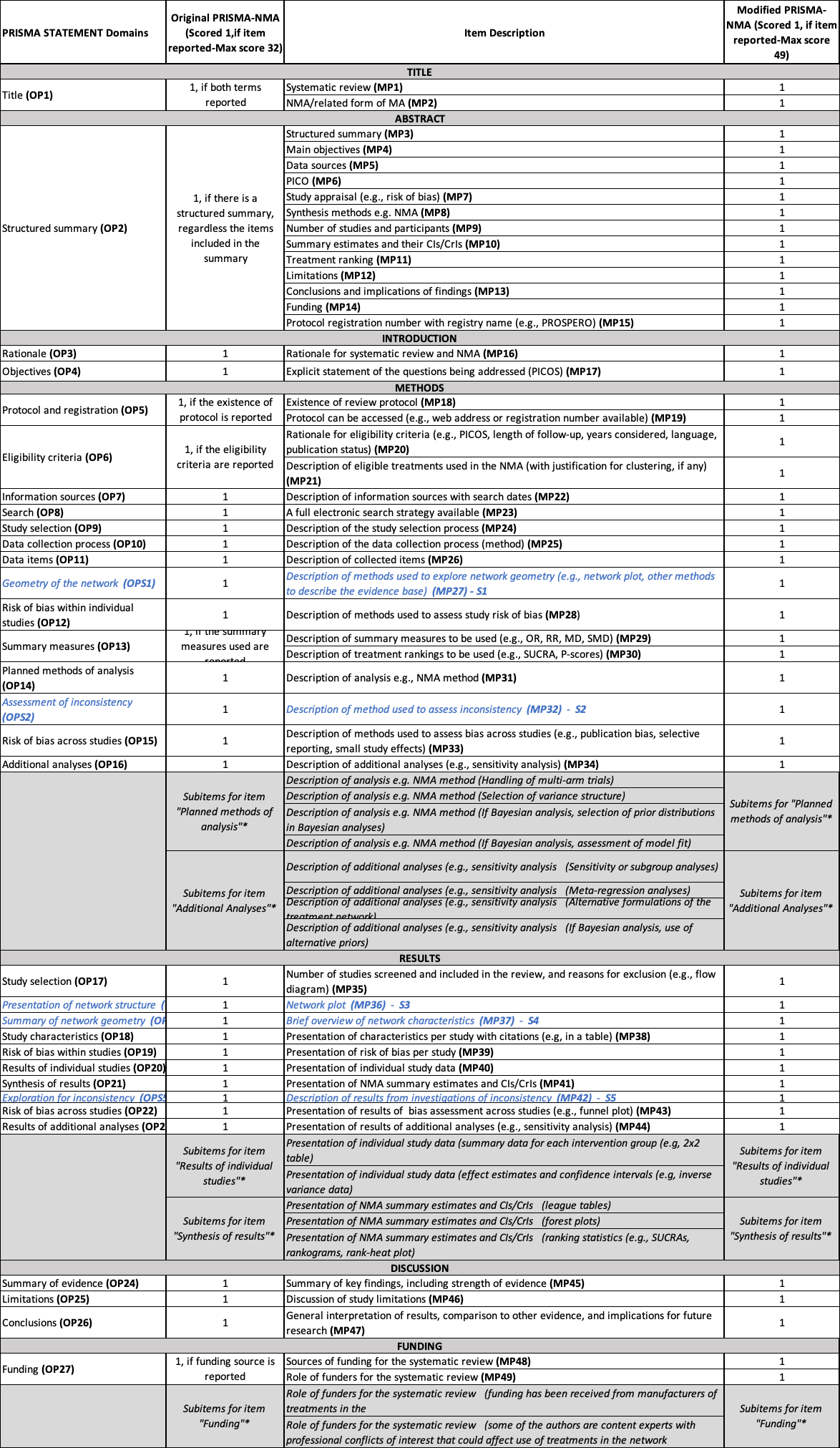
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# Appendix Table 1. Original and Modified PRISMA-NMA items

\* Sub-items were not included in the original or modified PRISMA-NMA score

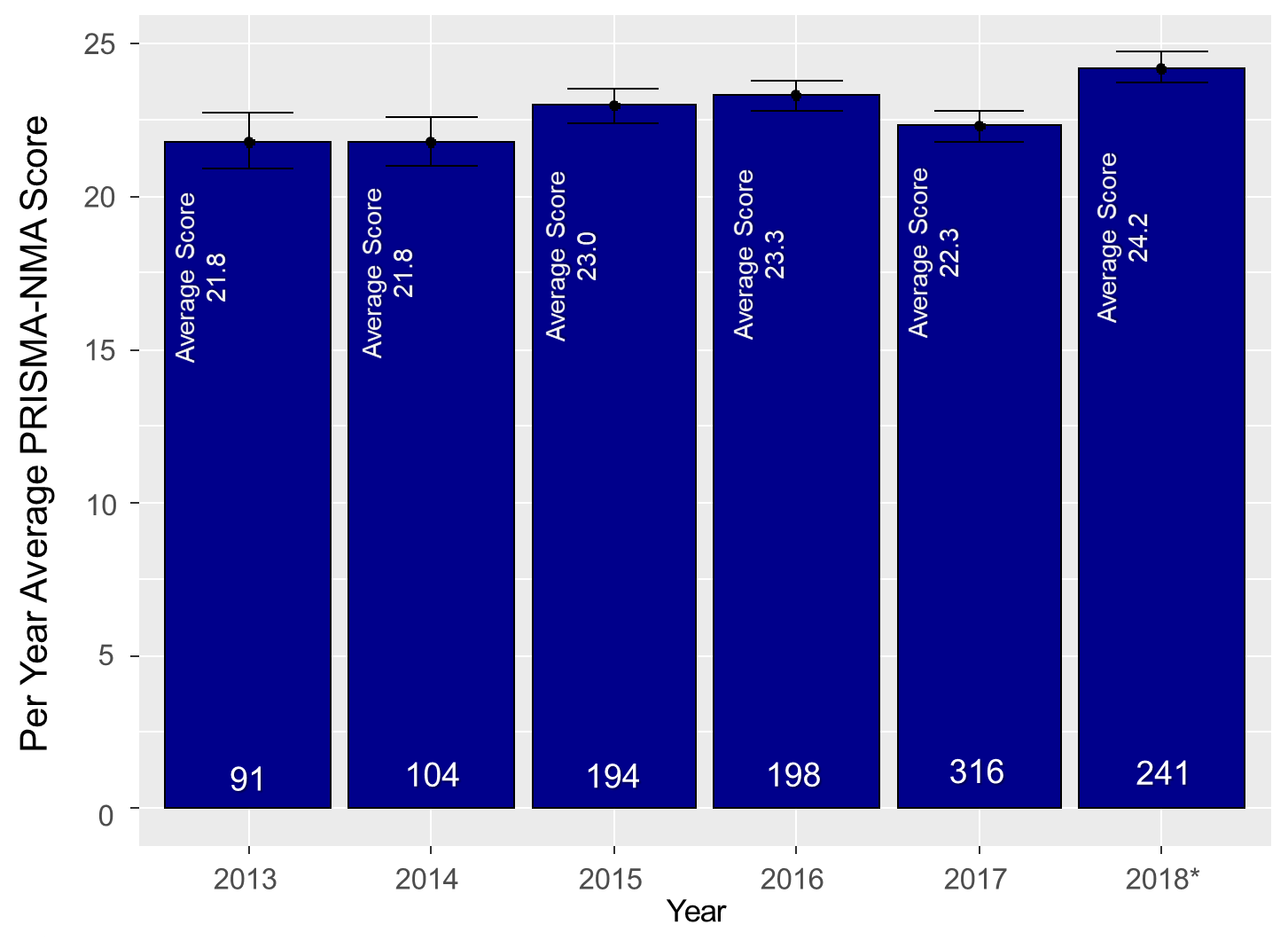


# Appendix Table 2. List of included studies

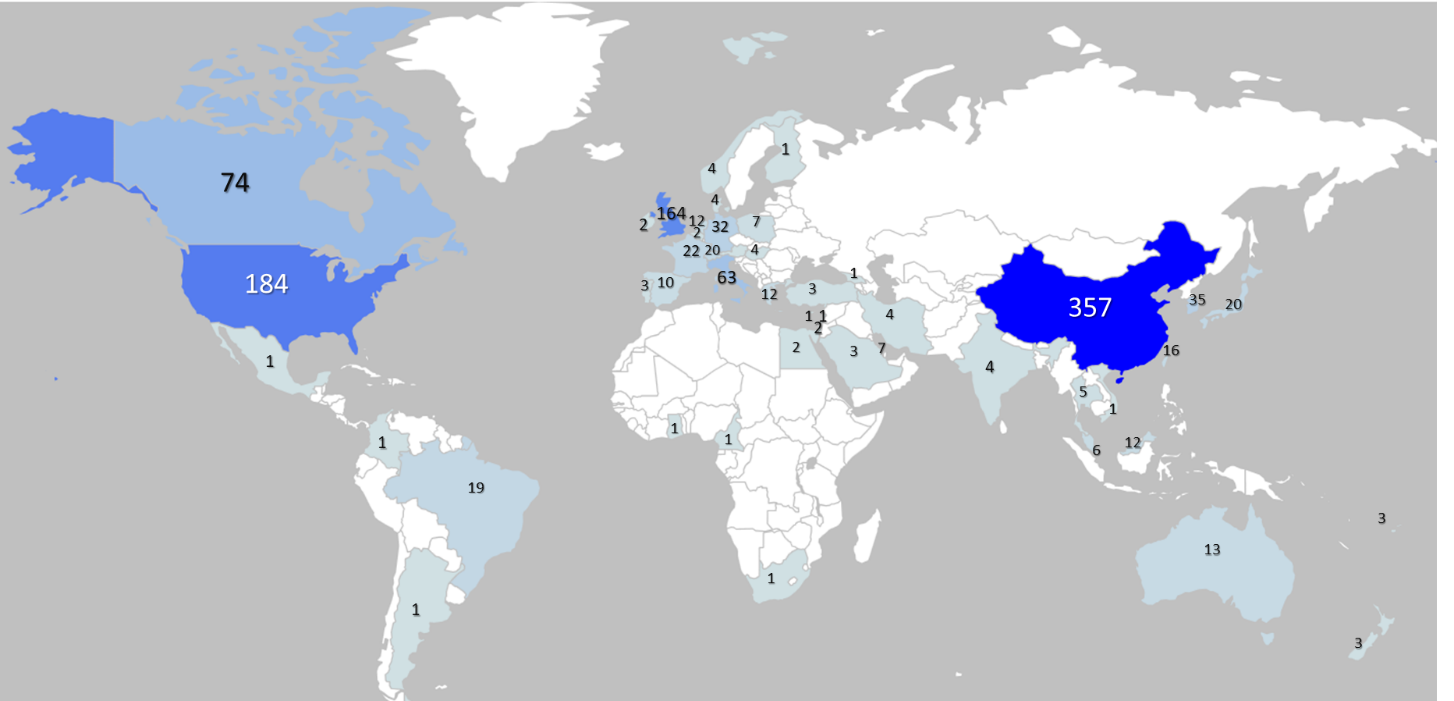
See Supplementary file 2

# Appendix Figure 1. Number of systematic reviews and network meta-analyses, and per-paper average original PRISMA-NMA score published between 2013 and 2018.

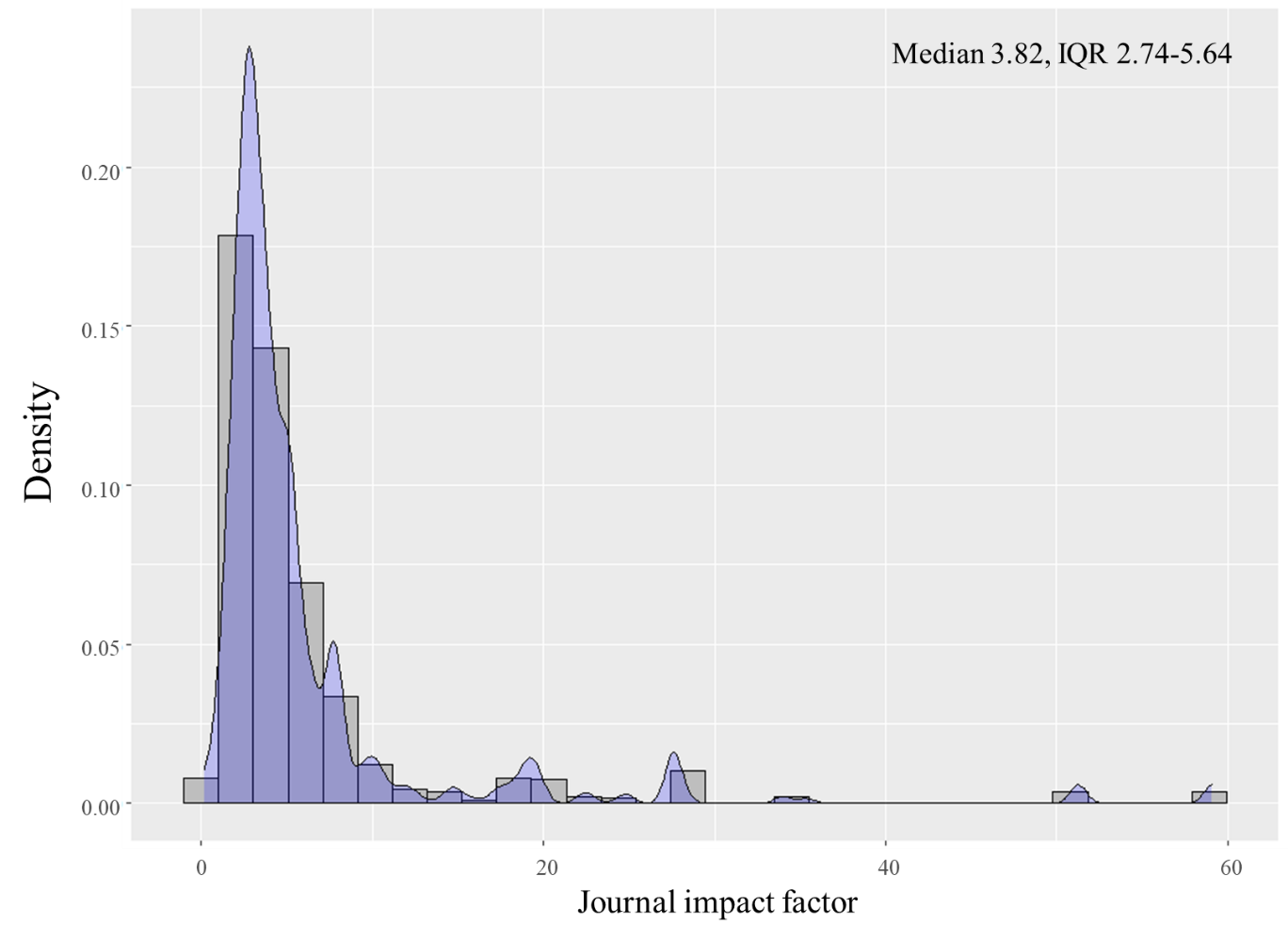
‘\*’ denotes that the search was performed up to July 2018, and thus only 7 months of that year are reflected in this graph



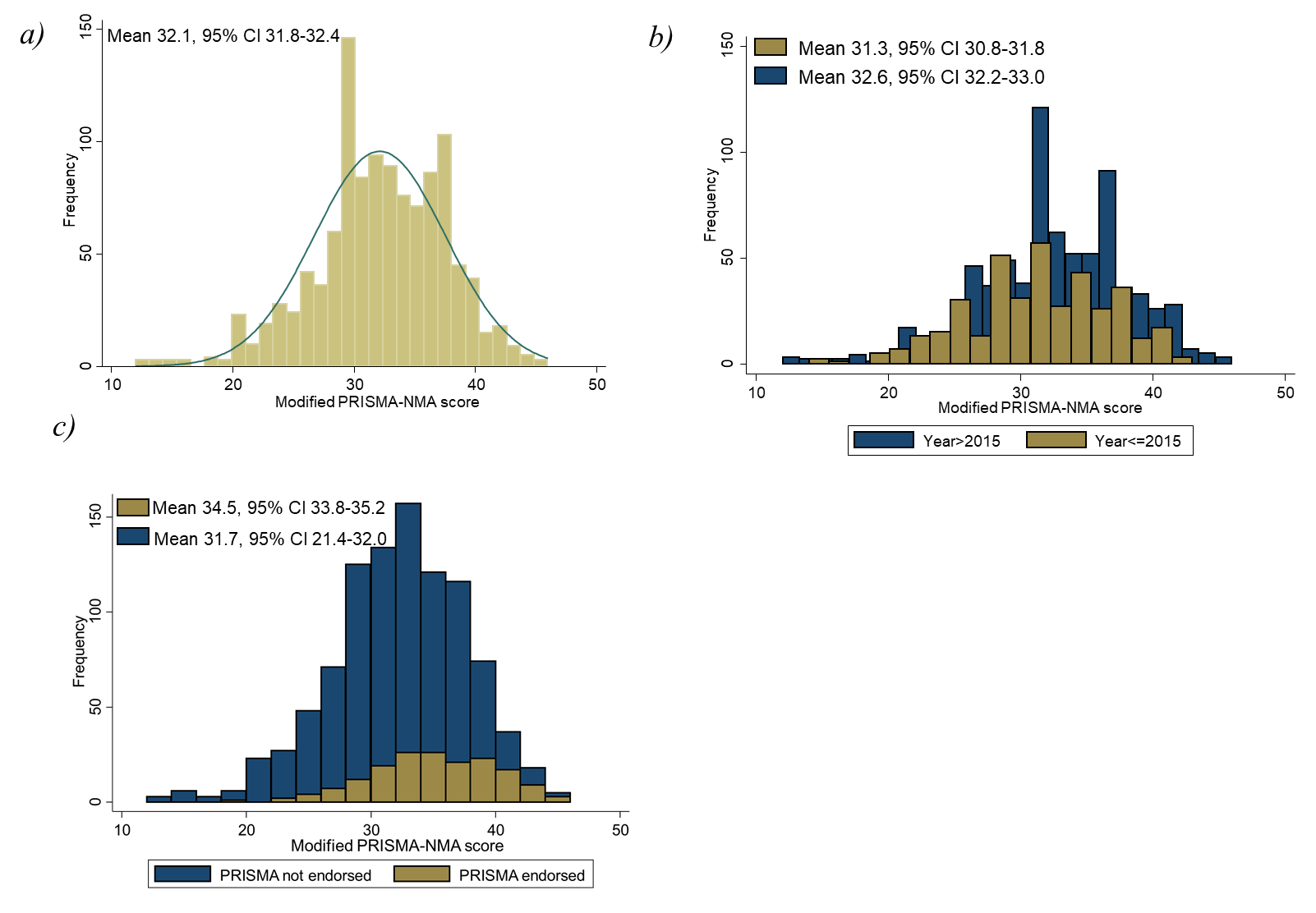
# Appendix Figure 2. Geographic heat map with published NMAs between 2013 and 2018



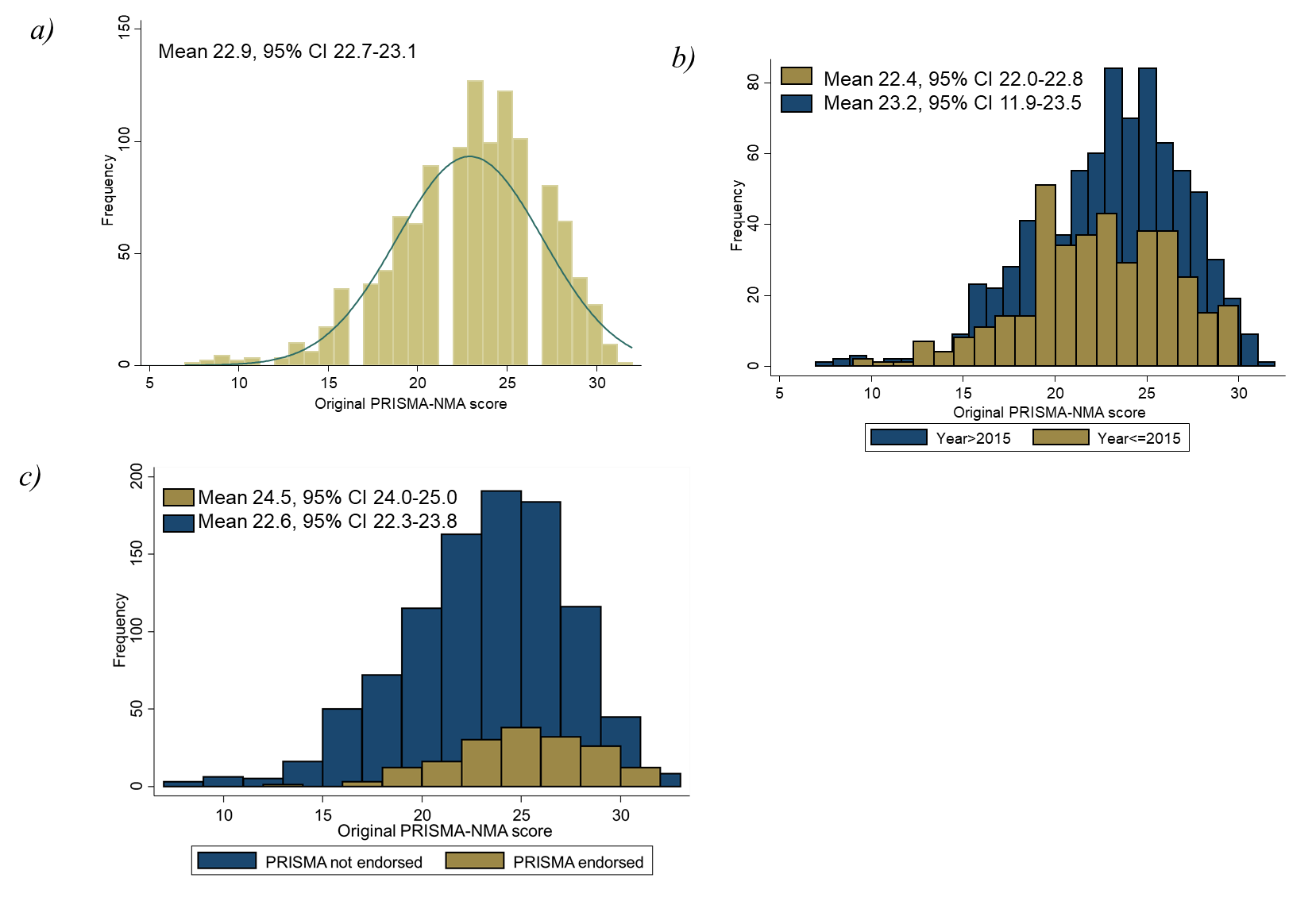
# Appendix Figure 3. Distribution of journal impact factor



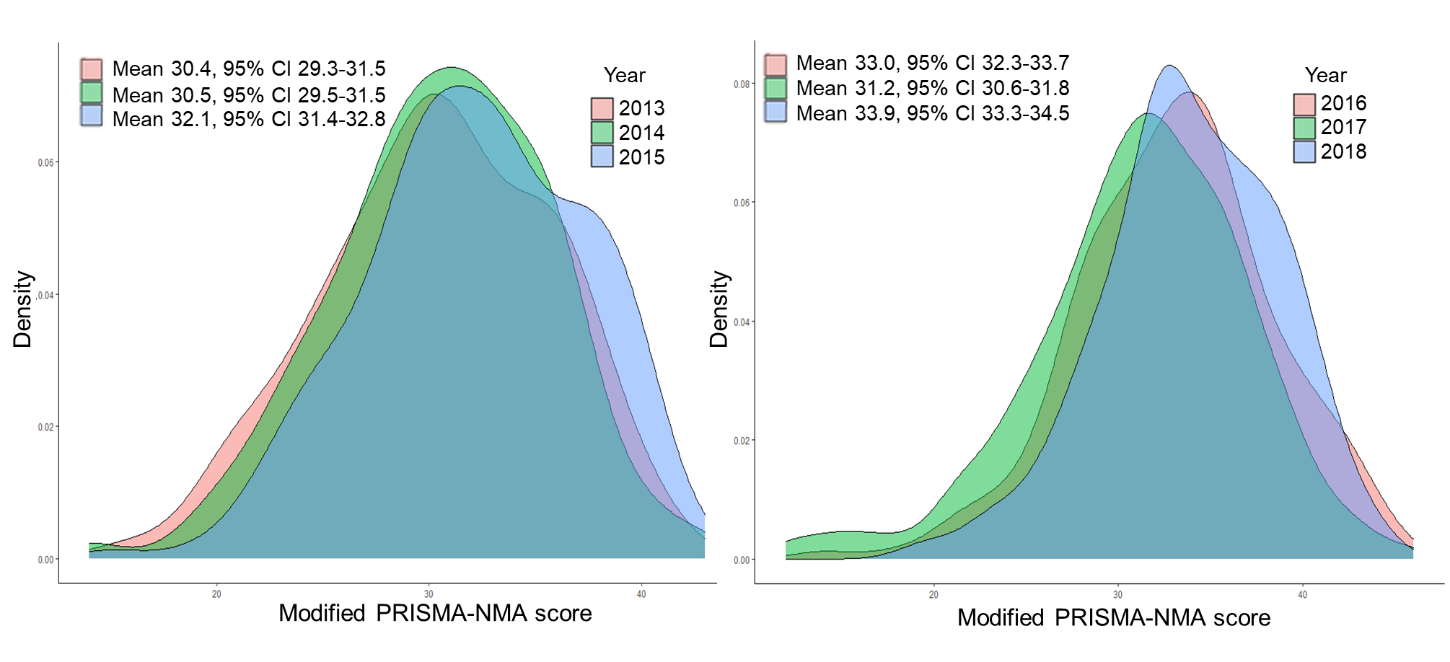
# Appendix Figure 4. Distribution of modified PRISMA-NMA score: a) overall, b) before and after 2015, and c) per journals endorsing or not the PRISMA-NMA guidelines.



# Appendix Figure 5. Distribution of original PRISMA-NMA score: a) overall, b) before and after 2015, and c) per journals endorsing or not the PRISMA-NMA guidelines



# Appendix Figure 6. Distribution of modified PRISMA-NMA score per year of publication



# Appendix Table 3. Univariable and multivariable regression using the original PRISMA-NMA score

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Covariates** | **Interpretation of the coefficient** | **Coefficient (95% CI)** | | **Sample size** |
| **Original PRISMA-NMA Score** | **S1-S5 Score** |
| **Univariable analyses and subgroups** | | | | |
| **Published after 2015 vs until 2015** | Average increase in the score after 2015 | 0.69 (0.21, 1.18) | 0.32 (0.14, 0.49) | Before 2015: 389  After 2015: 755 |
| **Year of publication, subgroup: only NMAs published before 2015** | Average increase in the score per year | 0.48 (0.10, 0.86) | 0.22 (0.11, 0.33) |
| **Year of publication, subgroup: only NMAs published after 2015** | Average increase in the score per year | 0.77 (0.28, 1.28) | 0.48 (0.32, 0.64) |
| **Multivariable analyses** | | | | |
| **Year of publication** | Average increase in the score per year | 0.46 (0.01, 0.92) | 0.44 (0.28, 0.60) | Year 2013: 91 Year 2014: 104 Year 2015: 194 Year 2016: 198 Year 2017: 316 Year 2018: 241 |
| **Treatment type** | Average increase in the score if network includes pharmacological treatments | -0.52 (-1.06, 0.00) | -0.19 (-0.37, 0.00) | Pharmacological treatments: 907  Non-pharmacological treatments : 237 |
| **Funding type** | Average increase in the score if non-sponsored/publicly-sponsored | 1.01 (0.40, 1.62) | 0.50 (0.29, 0.71) | Non-sponsored/publicly-sponsored: 974  Industry sponsored: 170 |
| **Review type** | Average increase in the score if protocol exists | -3.49 (-3.97, -3.00) | -0.31 (-0.48, -0.14) | With protocol: 313  Without protocol: 831 |
| **Impact factor** | Average increase in the score per impact factor increase (1 unit) | 0.06 (0.03, 0.09) | 0.02 (0.01, 0.03) |  |

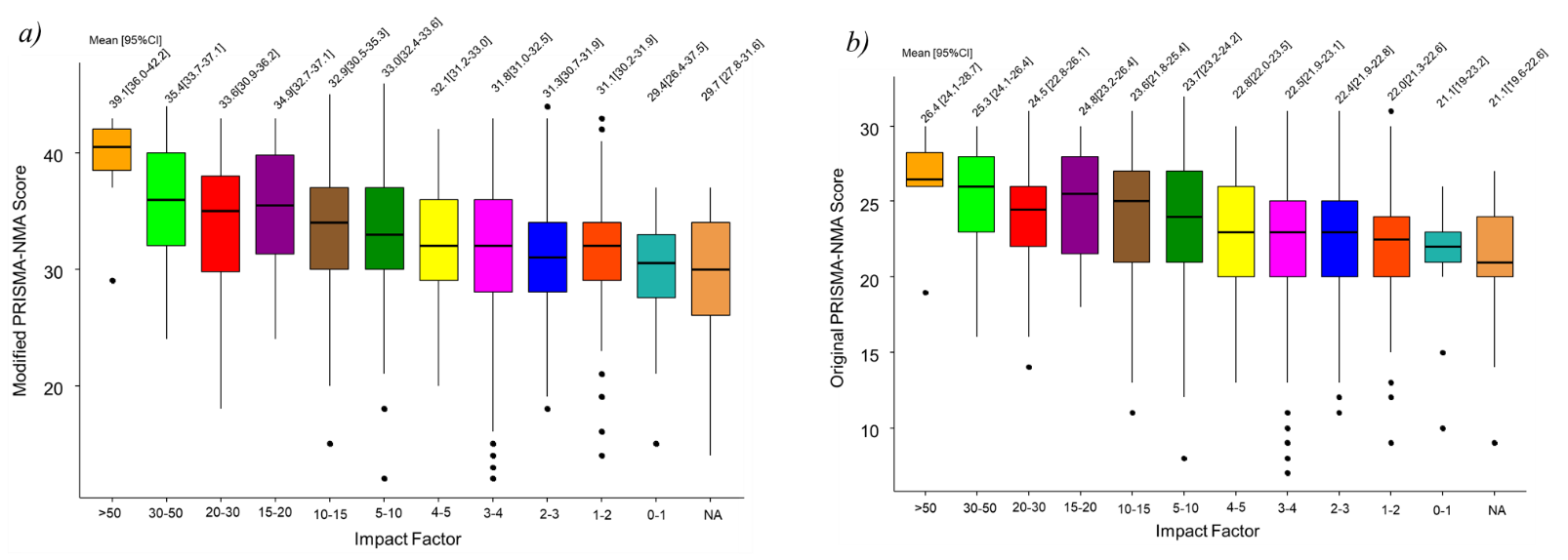
# Appendix Table 4. Assessment of reporting quality per journal with impact factor >10

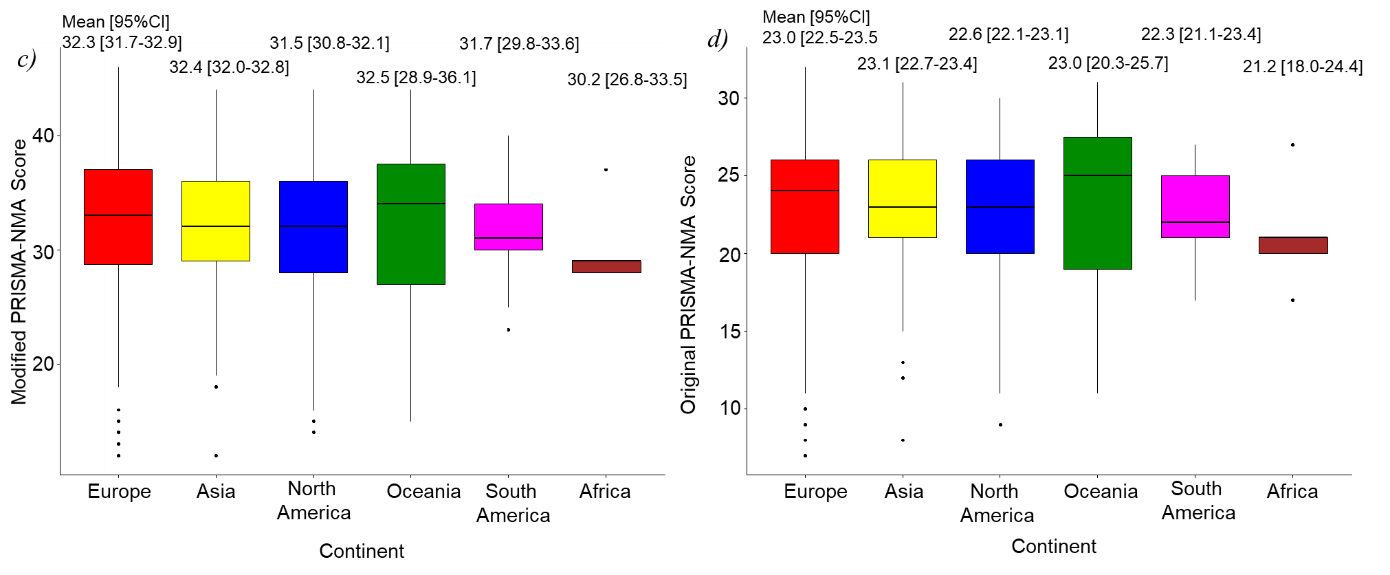
In **bold** we highlight journals that endorse the PRISMA checklist

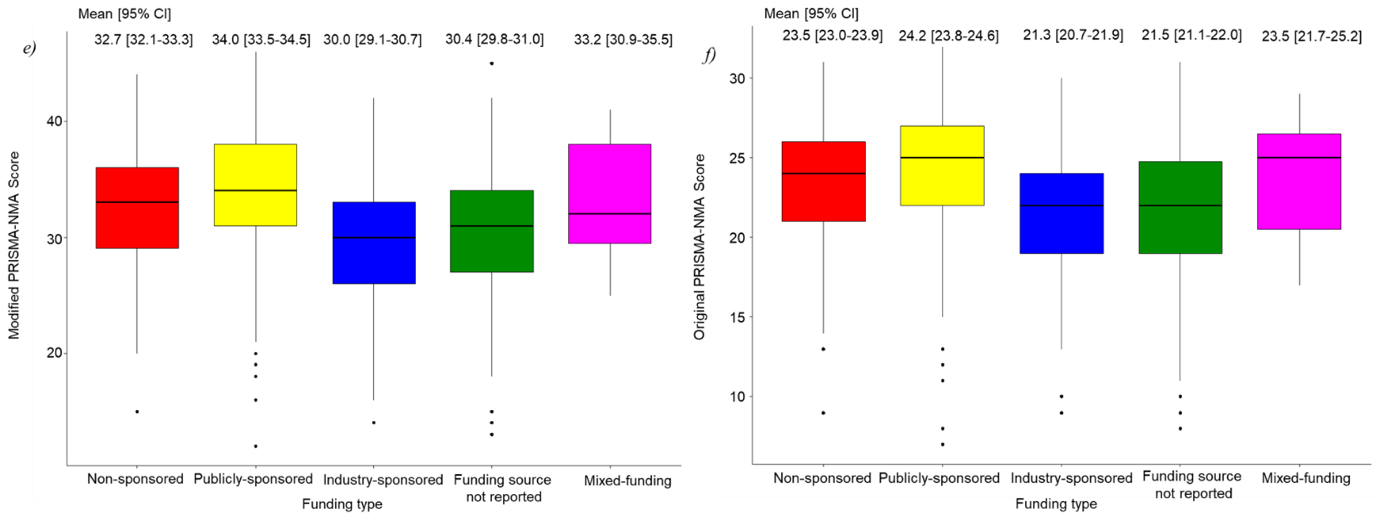
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Journal  (Impact Factor >10) | Total # of NMAs | Percentage of reported items in NMAs published <=2015 (mean) | Percentage of reported items in NMAs published >2015 (mean) | Mean Percentage Difference  (95% CI) | Percentage of reported items in NMAs published <=2015 (mean) | Percentage of reported items in NMAs published >2015 (mean) | Mean Percentage Difference (95% CI) |
|  | Original PRISMA-NMA score | | | | Modified PRISMA-NMA score | | |
| **Lancet (60.392)** | **8** | **78%** | **87%** | **9% ( -5%, 23%)** | **76%** | **84%** | **8%(-3%, 21%)** |
| **Jama-Journal Of The American Medical Association (45.54)** | **8** | **73%** | **85%** | **12% (6%, 19%)** | **67%** | **80%** | **13% (8%, 17%)** |
| World Psychiatry (40.595) | 3 | 72% | 83% | 11%\* | 65% | 77% | 12%\* |
| Lancet Oncology (33.752) | 2 | 81% | NA | NA | 72% | NA | NA |
| Journal of Clinical Oncology (32.956) | 1 | NA | 56% | NA | NA | 55% | NA |
| **Bmj (30.223)** | **21** | **79%** | **88%** | **9% (1%, 15%)** | **71%** | **82%** | **11% (4%, 19%)** |
| Lancet Diabetes & Endocrinology (25.34) | 1 | 78% | NA | NA | 76% | NA | NA |
| Jama Oncology (24.799) | 4 | 72% | 66% | -6%\* | 65% | 62% | -3%\* |
| Circulation (23.603) | 1 | 75% | NA | NA | 67% | NA | NA |
| European Heart Journal (22.673) | 3 | NA | 57% | NA | NA | 50% | NA |
| Annals Of Internal Medicine (21.317) | 11 | 81% | 85% | 4% (-6%, 15%) | 79% | 80% | 1% (-6%,8%) |
| Journal Of The American College Of Cardiology (20.589) | 4 | 64% | 69% | 5%\* | 56% | 59% | 3%\* |
| Gut (19.819) | 3 | NA | 84% | NA | NA | 76% | NA |
| Annals Of Oncology (18.274) | 1 | NA | 65% | NA | NA | 67% | NA |
| European Urology (17.947) | 5 | 69% | 72% | 3% (-19%, 25%) | 63% | 64% | 1% (-15%, 17%) |
| Intensive Care Medicine (17.679) | 4 | 66% | 70% | 4%\* | 61% | 65% | 4%\* |
| Jama Psychiatry (17.471) | 2 | NA | 77% | NA | NA | 74% | NA |
| Gastroenterology (17.373) | 5 | 86% | 86% | 0% (-12%, 11%) | 76 | 78% | 2% (-8%, 12%) |
| Lancet Psychiatry (16.209) | 2 | NA | 84% | NA | NA | 85% | NA |
| Lancet Hiv (14.813) | 3 | 78% | 81% | 3%\* | 69% | 76% | 7%\* |
| Lancet Gastroenterology & Hepatology (14.789) | 1 | NA | 75% | NA | NA | 69% | NA |
| Hepatology (14.679) | 2 | 81% | 84% | 3%\* | 73% | 73% | 0%\* |
| Jama Surgery (13.625) | 1 | NA | 91% | NA | NA | 82% | NA |
| Jama Neurology (13.608) | 1 | 75% | NA | NA | 65% | NA | NA |
| Journal Of Thoracic Oncology (13.357) | 2 | 50% | 34% | -16%\* | 45% | 31% | -14%\* |
| Jama Cardiology (12.794) | 1 | NA | 88% | NA | NA | 78% | NA |
| British Journal Of Sports Medicine (12.022) | 4 | 59% | 85% | 26%\* | 55% | 78% | 23%\* |
| European Journal Of Heart Failure (11.627) | 1 | 53% | NA | NA | 53% | NA | NA |
| Jnci-Journal Of The National Cancer Institute (11.577) | 4 | 75% | 80%% | 5%\* | 69% | 71% | 2%\* |
| Ageing Research Reviews (10.616) | 1 | NA | 8% | NA | NA | 78% | NA |
| **Plos Medicine (10.5)** | **2** | **72%** | **97%** | **25\*** | **69%** | **92%** | **23%\*** |
| Journal Of Allergy And Clinical Immunology (10.228) | 1 | 66% | NA | NA | 57% | NA | NA |
| American Journal Of Gastroenterology (10.171) | 2 | NA | 77% | NA | NA | 67% | NA |
| Annals Of Surgery (10.13) | 2 | 66% | 56% | -1%\* | 61% | 53% | -8%\* |
| Clinical Cancer Research (10.107) | 1 | 41% | NA | NA | 41% | NA | NA |

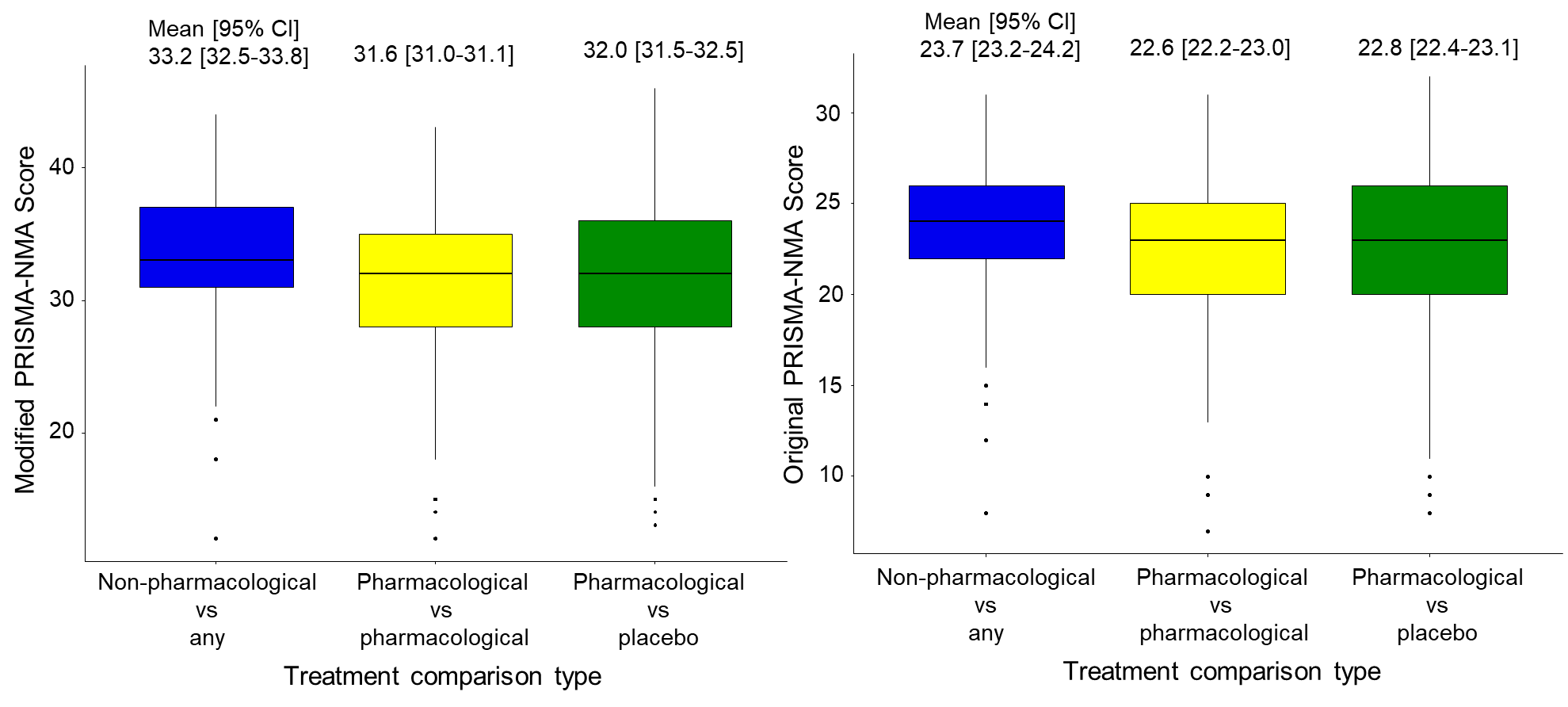
\* Inadequate number of studies per group to calculate a 95% confidence interval

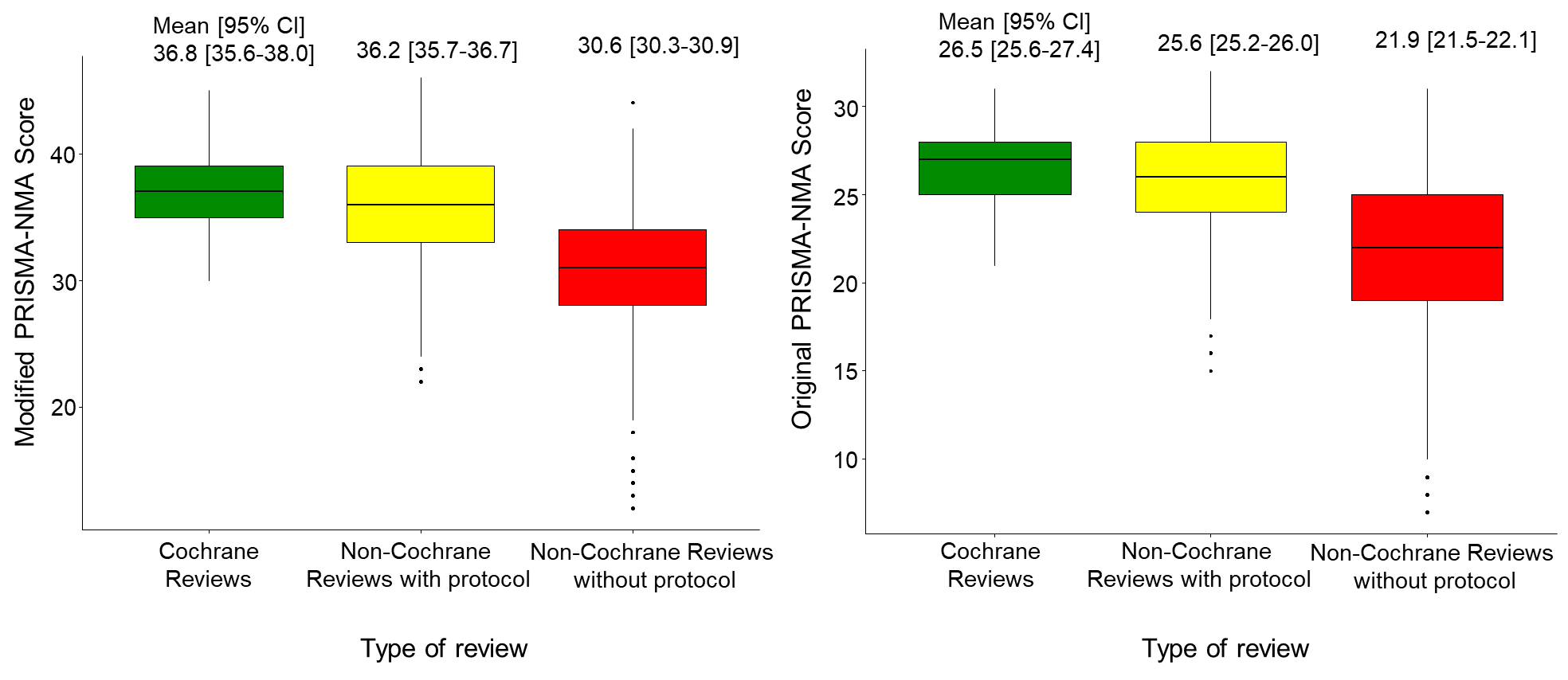
# Appendix Figure 7. PRISMA-NMA score per study characteristics











# Appendix Table 5. Assessment of reporting of NMAs using the modified PRISMA-NMA per year of publication

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year of publication | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** |
| **PRISMA ITEMS** | **# articles (%)** | **# articles (%)** | **# articles (%)** | **# articles (%)** | **# articles (%)** | **# articles (%)** |
| **TITLE** | | | | | | |
| Systematic review | 25 (27%) | 29 (28%) | 85 (44%) | 83 (42%) | 113 (36%) | 99 (41%) |
| NMA/related form of MA | 73 (80%) | 84 (81%) | 165 (85%) | 174 (88%) | 291 (92%) | 222 (92%) |
| **ABSTRACT** | | | | | | |
| Structured summary | 83 (91%) | 95 (91%) | 156 (80%) | 165 (83%) | 247 (78%) | 186 (77%) |
| Main objectives | 89 (98%) | 101 (97%) | 190 (98%) | 192 (97%) | 299 (95%) | 236 (98%) |
| Data sources | 50 (55%) | 57 (55%) | 114 (59%) | 120 (61%) | 159 (50%) | 148 (61%) |
| PICO | 65 (71%) | 93 (89%) | 174 (90%) | 175 (88%) | 204 (65%) | 215 (89%) |
| study appraisal (e.g., risk of bias) | 12 (13%) | 10 (10%) | 29 (15%) | 15 (8%) | 31 (10%) | 35 (15%) |
| synthesis methods (e.g. NMA) | 84 (92%) | 100 (96%) | 182 (94%) | 186 (94%) | 288 (91%) | 235 (98%) |
| Number of studies and participants | 78 (86%) | 90 (87%) | 158 (81%) | 158 (80%) | 265 (84%) | 214 (89%) |
| summary estimates and their CIs/CrIs | 65 (71%) | 72 (69%) | 117 (60%) | 122 (62%) | 186 (59%) | 136 (56%) |
| treatment ranking | 22 (24%) | 19 (18%) | 51 (26%) | 104 (53%) | 115 (36%) | 117 (49%) |
| limitations | 7 (8%) | 11 (11%) | 32 (16%) | 23 (12%) | 26 (8%) | 26 (11%) |
| conclusions and implications of findings | 84 (92%) | 104 (100%) | 186 (96%) | 192 (97%) | 308 (97%) | 233 (97%) |
| funding | 9 (10%) | 9 (9%) | 19 (10%) | 20 (10%) | 9 (3%) | 6 (2%) |
| registration number with registry name (e.g. PROSPERO) | 3 (3%) | 4 (4%) | 12 (6%) | 26 (13%) | 28 (9%) | 22 (9%) |
| **INTRODUCTION** | | | | | | |
| Rationale for systematic review and NMA | 85 (93%) | 100 (96%) | 192 (99%) | 180 (91%) | 297 (94%) | 234 (97%) |
| Explicit statement of the questions being addressed (PICOS) | 70 (77%) | 94 (90%) | 179 (92%) | 185 (93%) | 229 (72%) | 238 (99%) |
| **METHODS** | | | | | | |
| Existence of review protocol | 15 (16%) | 16 (15%) | 45 (23%) | 57 (29%) | 68 (22%) | 93 (39%) |
| Protocol can be accessed (e.g., Web address or registration number available) | 11 (12%) | 8 (8%) | 30 (15%) | 49 (25%) | 60 (19%) | 71 (29%) |
| rationale for eligibility criteria (e.g., PICOS, length of follow-up, years considered, language, publication status) | 82 (90%) | 96 (92%) | 179 (92%) | 187 (94%) | 293 (93%) | 231 (96%) |
| Description of eligible treatments used in the NMA (with justification for clustering, if any) | 74 (81%) | 82 (79%) | 150 (77%) | 176 (89%) | 272 (86%) | 199 (83%) |
| Description of information sources with search dates) | 88 (97%) | 97 (93%) | 187 (96%) | 191 (96%) | 299 (95%) | 225 (93%) |
| A full electronic search strategy available | 36 (40%) | 47 (45%) | 92 (47%) | 117 (59%) | 150 (47%) | 116 (48%) |
| Description of the study selection process | 72 (79%) | 79 (76%) | 170 (88%) | 180 (91%) | 259 (82%) | 200 (83%) |
| Description of the data collection process (method) | 61 (67%) | 68 (65%) | 111 (57%) | 181 (91%) | 231 (73%) | 183 (76%) |
| Description of collected items) | 57 (63%) | 66 (63%) | 136 (70%) | 174 (88%) | 230 (73%) | 185 (77%) |
| Description of methods used to explore network geometry (e.g., network plot, other methods to describe the evidence base) | 12 (13%) | 10 (10%) | 41 (21%) | 45 (23%) | 76 (24%) | 71 (29%) |
| Description of methods used to assess study risk of bias | 67 (74%) | 79 (76%) | 152 (78%) | 160 (81%) | 249 (79%) | 208 (86%) |
| Description of summary measures to be used (e.g., OR, RR, MD, SMD) | 85 (93%) | 98 (94%) | 183 (94%) | 181 (91%) | 285 (90%) | 212 (88%) |
| Description of treatment rankings to be used (e.g., SUCRA, P-scores) | 33 (36%) | 36 (35%) | 95 (49%) | 138 (70%) | 222 (70%) | 185 (77%) |
| Description of analysis methods (e.g., NMA method) | 85 (93%) | 99 (95%) | 187 (96%) | 185 (93%) | 307 (97%) | 235 (98%) |
| Description of method used to assess inconsistency | 47 (52%) | 54 (52%) | 133 (69%) | 126 (64%) | 214 (68%) | 188 (78%) |
| Description of methods used to assess bias across studies (e.g., publication bias, selective reporting, small study effects) | 27 (30%) | 26 (25%) | 72 (37%) | 59 (30%) | 104 (33%) | 124 (51%) |
| Description of additional analyses (e.g., sensitivity analysis) | 51 (56%) | 61 (59%) | 113 (58%) | 111 (56%) | 123 (39%) | 138 (57%) |
| **RESULTS** | | | | | | |
| # of studies screened and included in the review, and reasons for exclusion (e.g., flow diagram) | 86 (95%) | 95 (91%) | 178 (92%) | 183 (92%) | 288 (91%) | 229 (95%) |
| Network plot | 68 (75%) | 69 (66%) | 161 (83%) | 168 (85%) | 284 (90%) | 221 (92%) |
| Brief overview of network characteristics | 72 (79%) | 73 (70%) | 166 (86%) | 168 (85%) | 258 (82%) | 221 (92%) |
| Presentation of characteristics per study with citations (e.g., in a table) | 80 (88%) | 95 (91%) | 170 (88%) | 185 (93%) | 282 (89%) | 229 (95%) |
| Presentation of risk of bias per study | 51 (56%) | 56 (54%) | 134 (69%) | 134 (68%) | 193 (61%) | 166 (69%) |
| Presentation of individual study data | 52 (57%) | 62 (60%) | 101 (52%) | 59 (30%) | 125 (40%) | 112 (46%) |
| Presentation of NMA results (summary estimates and CIs/CrIs, ranking statistics) | 88 (97%) | 99 (95%) | 188 (97%) | 194 (98%) | 301 (95%) | 238 (99%) |
| Description of results from investigations of inconsistency | 40 (44%) | 44 (42%) | 111 (57%) | 112 (57%) | 192 (61%) | 156 (65%) |
| Presentation of results of bias assessment across studies (e.g., funnel plot) | 20 (22%) | 26 (25%) | 63 (32%) | 55 (28%) | 106 (34%) | 98 (41%) |
| Presentation of results of additional analyses (e.g., sensitivity analysis) | 44 (48%) | 56 (54%) | 108 (56%) | 106 (54%) | 126 (40%) | 142 (59%) |
| **DISCUSSION** | | | | | | |
| Summary of key findings, including strength of evidence | 91 (100%) | 104 (100%) | 192 (99%) | 196 (99%) | 314 (99%) | 238 (99%) |
| Discussion of study limitations | 85 (93%) | 93 (89%) | 182 (94%) | 186 (94%) | 301 (95%) | 233 (97%) |
| General interpretation of results, comparison to other evidence, and implications for future research | 90 (99%) | 103 (99%) | 169 (87%) | 182 (92%) | 301 (95%) | 220 (91%) |
| **FUNDING** | | | | | | |
| Sources of funding for the systematic review | 71 (78%) | 84 (81%) | 141 (73%) | 139 (70%) | 216 (68%) | 169 (70%) |
| Role of funders for the systematic review | 21 (23%) | 23 (22%) | 57 (29%) | 39 (20%) | 39 (12%) | 38 (16%) |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Total # of articles** | **91** | **104** | **194** | **198** | **316** | **241** |

**Abbreviations**: CI, confidence interval; CrI, credible interval NMA, network meta-analysis

# Appendix Figure 8. Distribution of journal impact factor in NMAs published in 2016 and 2017

