

SUPPLEMENTARY MATERIAL

Supplementary Table 1: Search Strategy on Ovid MEDLINE®

1. "annals of the rheumatic diseases".jn.
2. arthritis & rheumatology.jn.
3. arthritis & rheumatism.jn.
4. arthritis care & research.jn.
5. seminars in arthritis & rheumatism.jn.
6. rheumatology.jn.
7. rmd open.jn.
8. "journal of rheumatology".jn.
9. arthritis research & therapy.jn.
10. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
11. exp Journal Article/
12. 10 and 11
13. (("semi-structured" or semistructured or unstructured or informal or "in-depth" or indepth or "face-to-face" or structured or guide) adj3 (interview* or discussion*)) or (focus group* or qualitative or ethnograph* or fieldwork or "field work" or "key informant").ti,ab. or interviews as topic/ or focus groups/ or narration/ or qualitative research/
14. Meta-Analysis as Topic/ or meta analy\$.tw. or metaanaly\$.tw. or Meta-Analysis/ or (systematic adj (review\$1 or overview\$1)).tw. or exp Review Literature as Topic/ or cochrane.ab. or embase.ab. or (psychlit or psyclit).ab. or (psychinfo or psycinfo).ab. or (cinahl or cinhal).ab. or science citation index.ab. or bids.ab. or cancerlit.ab. or reference list\$.ab. or bibliograph\$.ab. or hand-search\$.ab. or relevant journals.ab. or manual search\$.ab. or ((selection criteria or data extraction).ab. and review/)
15. exp clinical pathway/ or exp clinical protocol/ or exp consensus/ or exp consensus development conference/ or exp consensus development conferences as topic/ or critical pathways/ or exp guideline/ or guidelines as topic/ or exp practice guideline/ or practice guidelines as topic/ or health planning guidelines/ or (guideline or practice guideline or consensus development conference or consensus development conference, NIH).pt. or (position statement* or policy statement* or practice parameter* or best practice*).ti,ab,kf,kw. or (standards or guideline or guidelines).ti,kf,kw. or ((practice or treatment* or clinical) adj guideline*).ab. or (CPG or CPGs).ti. or consensus*.ti,kf,kw. or consensus*.ab. /freq=2 or ((critical or clinical or practice) adj2 (path or paths or pathway or pathways or protocol*).ti,ab,kf,kw. or recommendat*.ti,kf,kw. or (care adj2 (standard or path or paths or pathway or pathways or map or maps or plan or plans)).ti,ab,kf,kw. or (algorithm* adj2 (screening or examination or test or tested or testing or assessment* or diagnosis or diagnoses or diagnosed or diagnosing)).ti,ab,kf,kw. or (algorithm* adj2 (pharmacotherap* or chemotherap* or chemotreatment* or therap* or treatment* or intervention*).ti,ab,kf,kw.
16. exp comment/ or exp editorial/ or exp "review"/ or case reports/ or meta-analysis/ or RANDOMIZED CONTROLLED TRIAL/ or exp CLINICAL TRIAL/ or exp historical article/ or exp PUBLISHED ERRATUM/
17. exp PRACTICE GUIDELINE/ or exp GUIDELINE/
18. exp Genetics/ or exp POLYMORPHISM, GENETIC/
19. (in vitro or assay\$ or biomarker\$).ti,ab.
20. exp animals/ not humans.sh.
21. (genetic\$ or gene or polymorph\$ or allele\$).ti.
22. (rat or rats or mice or mouse).ti,ab.
23. (randomized controlled trial or controlled clinical trial).pt. or placebo\$.ab. or clinical trials as topic.sh. or random\$.ab. or trial\$.ti.
24. 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23
25. 12 not 24
26. limit 25 to yr="2008-Current"

Supplementary Table 2: Data extracted from the studies

General information	
Type of disease	Rheumatoid arthritis Spondylarthropathies Juvenile idiopathic arthritis Systemic Lupus Erythematosus Osteoarthritis Adult Onset Still Disease Gout Vasculitis Myositis Sjögren Syndrom Other
Number of participants	
Scientific journal ranking in 2018	
Year of publication	
General information on methods	
Presence of a method section	Y/N
Description of the data collection	Prospective Retrospective Mixed Not mentioned
Indication of adherence to STROBE guidelines	Y/N
Exposures and outcomes	
Treatment was the main exposure	Y/N
Comparison of at least 2 treatment was the main exposure	Y/N
Other outcome than effectiveness (e.g. safety)	Y/N
Type of outcome for effectiveness	Disease activity* Retention Patient reported outcome Radiographic Other
Was the outcome categorical	Y/N
Number of different effectiveness outcome (type and if categorical or not)	
Confounding	
Was a crude analysis presented	Y/N
Was an adjusted analysis presented	Y/N
Number of covariates used for adjustment	
Method of selection for adjustment covariates	A priori/wisely Stepwise method Bivariate selection Unknown Other
Method of adjustment for confounding	Multivariate model Stratification Matching Inverse probability weighting

	Propensity score Restriction Other
Follow-up information and handling of attrition	
Reporting of patients lost to follow-up	Y/N
Reporting of patients lost to follow-up by treatment	Y/N
Reporting of patients changing/stopping treatment	Y/N
Reporting reasons of treatment discontinuation	Y/N
Handling of attrition in the analysis	Y/N
Method to handle attrition	Non-responder imputation Complete case Last observation carried forward Other
Missing data	
Reporting of the number of missing data of covariates of interest	Y/N
Reporting of the method to handle missing data	Y/N
Handling of missing data	Complete case Multiple imputation Last observation carried forward Supplementary category Other
*Disease activity could include a patient reported outcome in the composite score	

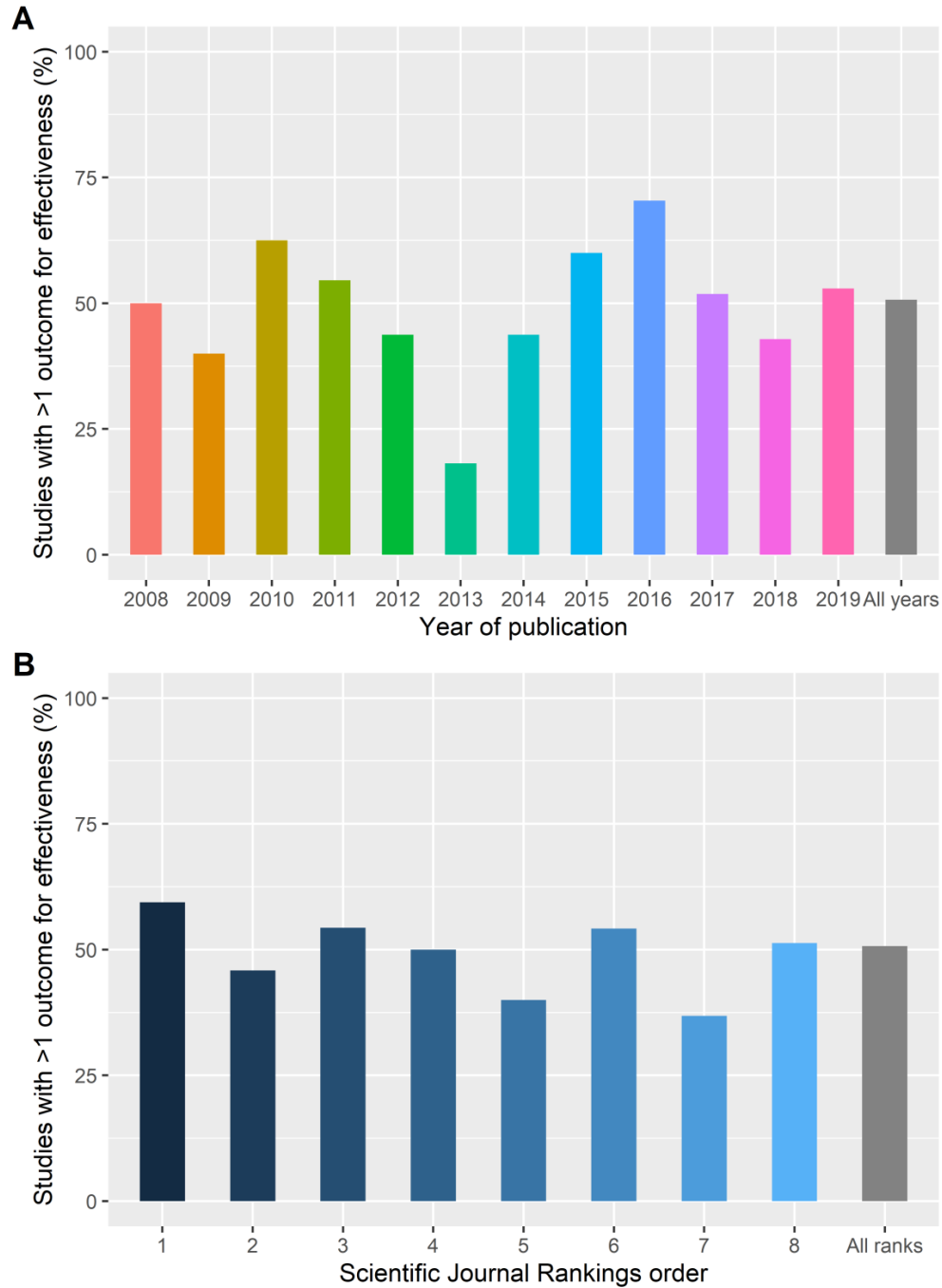
Supplementary Table 3: Definitions of some terms used in the review

A priori/wisely selection of covariates	Selection of covariates based on background knowledge (e.g. prior studies, causal graph theory, ...)
Attrition	Type of selection bias that can occur if participants are lost to follow-up or cannot contribute a value of effectiveness
Bivariate selection	Selection of covariates in the model based on their association with the outcome in a univariate statistical test. Also called “univariate selection” or “screening”
Complete case analysis	Analysis that included only participants with no missing data on the covariates of interests
Last observation carried forward	The last observed value of a variables is used for all subsequent observation points if missing
Loss to follow-up	Incomplete follow-up, resulting in missing information at the end of the study
Missing at random	Missing depending on measured variables but not on unmeasured variables, including missingness in the variable of interest itself
Non-responder imputation	Categorisation of subjects no longer under the treatment of interest as non-responders
Stepwise selection	Automatic addition or deletion of covariates in the model based on some pre-specified criterion such as a p-value threshold. Stepwise selection can be <ul style="list-style-type: none"> • Backward: starting with all candidate covariates and deleting them according to criteria • Forward: starting with no variables and adding them according to criteria • A combination of backward elimination and forward selection

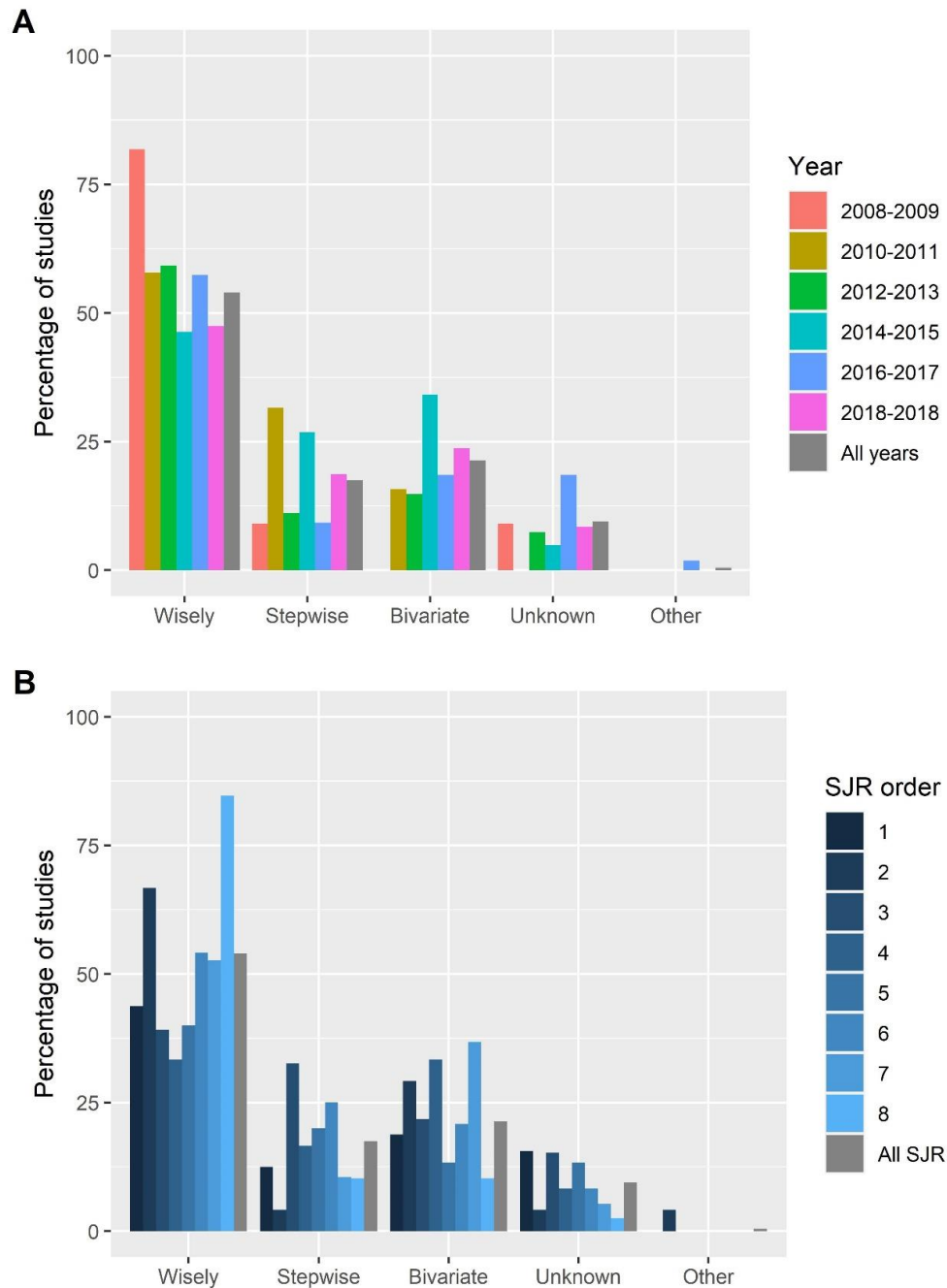
Supplementary Table 4. Summary of main results for reporting and analysing for confounding for studies mentioning STROBE vs not mentioning STROBE

	Studies mentioning STROBE	Studies not mentioning STROBE
N	10	201
Adjusted and crude analysis presented	7 (70%)	174 (87%)
Reporting of patients lost to follow-up	4 (40%)	65 (32%)
Reporting of patients changing/stopping treatment	4 (40%)	9 (48%)
Handling of attrition in the analysis (in studies with outcome other than retention)	2/8 (25%)	42/169 (25%)
Reporting of the number of missing data of covariates of interest	2 (20%)	34 (17%)
Reporting of the method to handle missing data	3 (30%)	60 (30%)
STROBE: STrengthening the Reporting of OBservational studies in Epidemiology.		

Supplementary Figure 1: Proportion of studies with more than one outcome for effectiveness by (A) year of publication (B) order of Scientific Journal Rankings from the lowest ranking (1) to the highest (8)

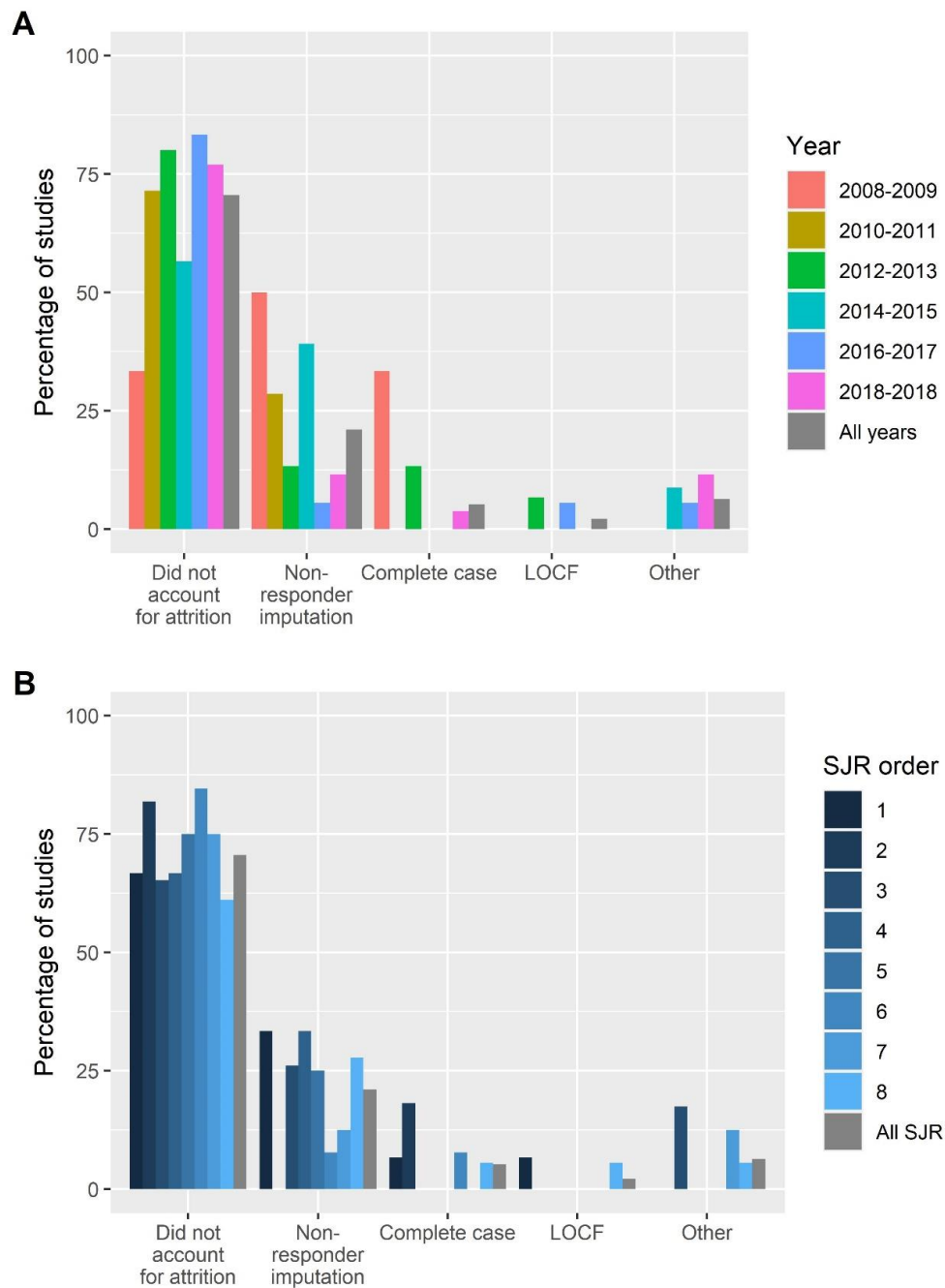


Supplementary Figure 2: Proportion of studies by type of methods for selecting covariates for adjustment and by (A) year of publication (B) order of Scientific Journal Rankings (SJR) from the lowest ranking (1) to the highest (8)



Supplementary Figure 3: Proportion of studies by handling method for and by (A) year of publication (B) order of Scientific Journal Rankings (SJR) from the lowest ranking (1) to the highest (8) in studies with at least 2 treatments as the main exposure and only effectiveness as the outcomes (DS2), with at least one other outcome than retention (n=95)

LOCF: last observation carried forward



Supplementary Figure 4: Proportion of studies with information on missing data and by type of handling of missing data by (A) year of publication (B) order of Scientific Journal Rankings (SJR) from the lowest ranking (1) to the highest (8) in all studies included (n=211)

