

AMSTAR를 활용한 메타논문의 질 평가

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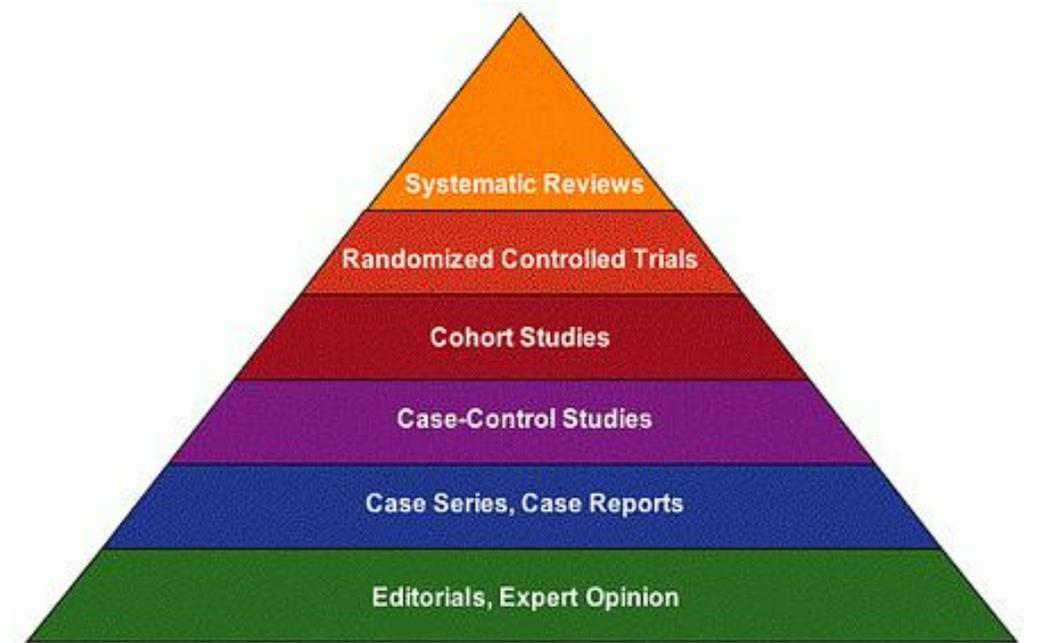
순서

- 체계적 문헌고찰과 질 평가
- AMSTAR 2.0
 - 연구문제
 - 문헌선택
 - 자료추출
 - 자료분석
 - 결과보고 및 해석
- 메타분석 연구의 질 평가 연구

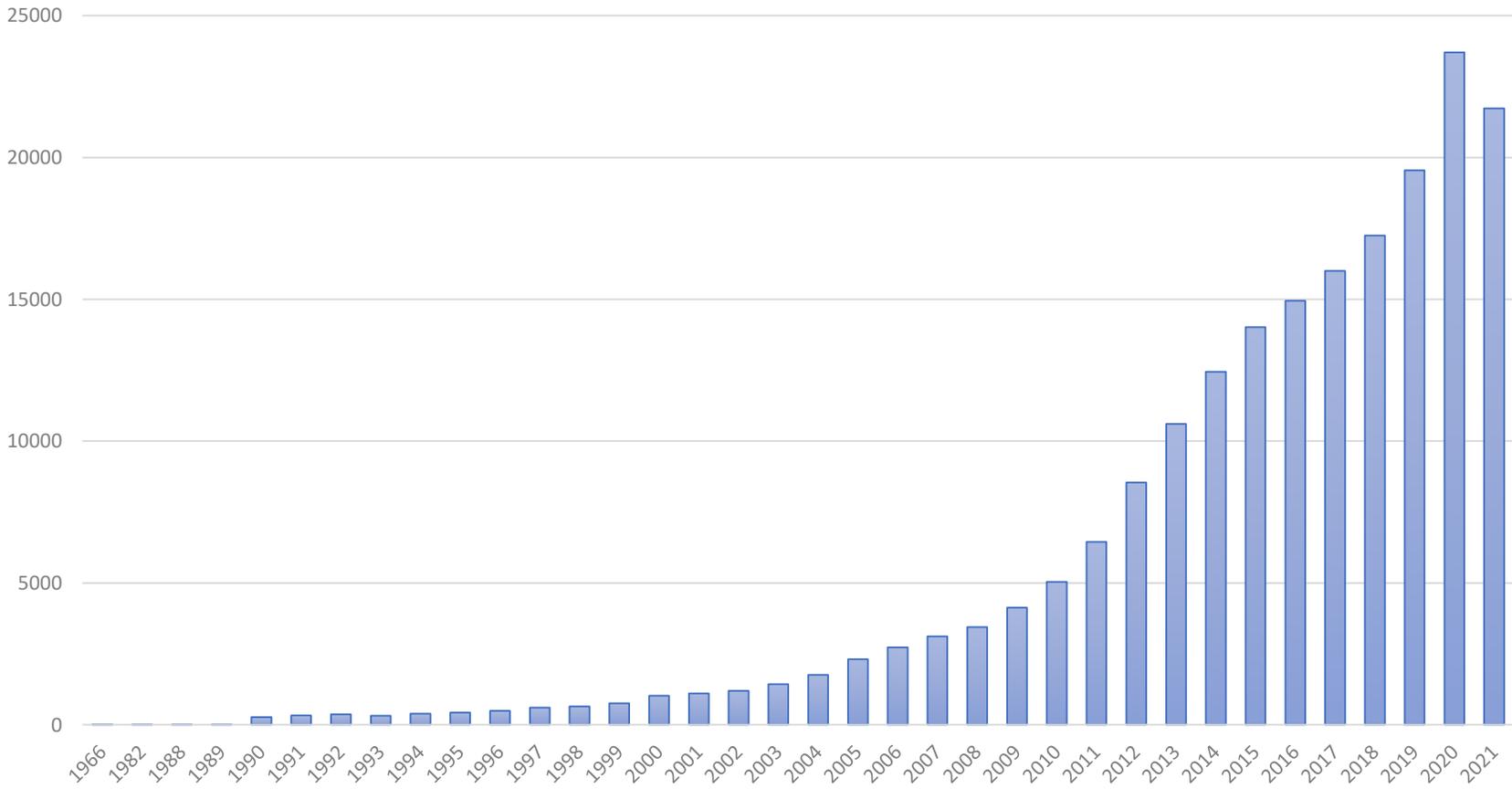
체계적 문헌고찰과 질 평가

임상적 근거와 체계적 문헌고찰

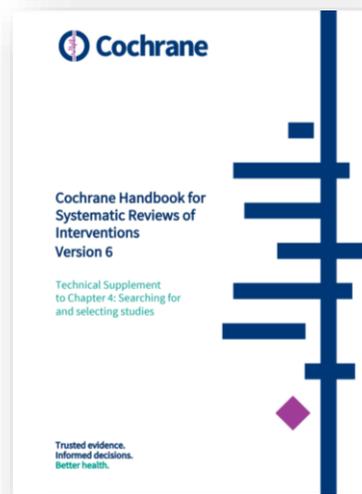
- 의사결정의 연속
- 의사결정의 근거 : 그 결과는 서로 상충되기도
- 수준 높은 의사결정은 보건의료의 질 향상에 기여
 - 의사결정 지침의 개발의 투명성, 합리성, 신뢰성에 의심이 간다면?



Search in Pubmed : SR or meta-analysis

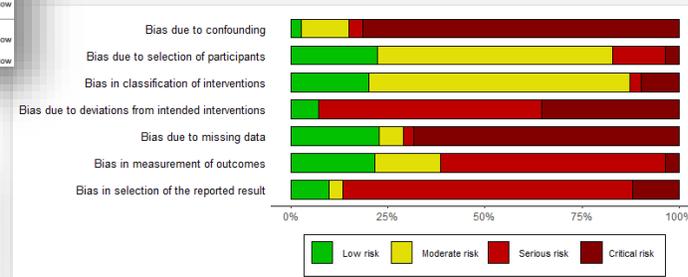


- The Cochrane Collaboration Handbook
 - Comprehensive guide
- MECIR
 - Methodological Expectations of Cochrane Intervention Reviews
- PRISMA : Reporting guide, checklist tool
- ROBIS : Risk of Bias in SR
- GRADE : Quality of evidence
- **AMSTAR** : Critical appraisal tool



Intervention category (outcomes)	No. of studies (design)	Quality
Combined training and placements		
Wage Labour	8 (5 RCT)	⊕⊕⊕ Moderate
Income	9 (5 RCT)	⊕⊕⊕ Moderate
Empowerment	5 (2 RCT)	⊕⊕⊕ Low
Soft skills training on promotion		
Career progression	2 (2 RCT)	⊕⊕⊕ Very low
Empowerment	2 (2 RCT)	⊕⊕⊕ Very low
Job placement services only		
Wage Labour	3 (3 RCT)	⊕⊕⊕ Low
Income	3 (3 RCT)	⊕⊕⊕ Low
Empowerment	3 (3 RCT)	⊕⊕⊕ Low
National labour subsidies		
Wage Labour	2 (0 RCT)	⊕⊕⊕ Very low
Macro-level empowerment policies		
Wage Labour	2 (0 RCT)	⊕⊕⊕ Very low
Empowerment	2 (0 RCT)	⊕⊕⊕ Very low

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
	1	Identify the report as a systematic review.	
ABSTRACT			
	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
	3	Describe the rationale for the review in the context of existing knowledge.	
	4	Provide an explicit statement of the objectives, or questions, the review addresses.	
METHODS			
	5	Specify the inclusion and exclusion criteria for the review, and how studies were grouped for the synthesis.	
	6	Specify all databases, registers, references, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
	7	Present the full search strategies for all databases, registers and references, including any filters and limits used.	
	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items			
	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, and sexes), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used. How many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	
	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods			
	13a	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13b	Describe any methods used to tabulate or visually display results of individual studies and synthesis.	
	13c	Describe any methods used to synthesize results and provide a rationale for the choice(s); if meta-analysis was performed, describe the model(s), methods to identify the presence and extent of statistical heterogeneity, and both the package(s) used.	
	13d	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	
Reporting bias assessment			
	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	

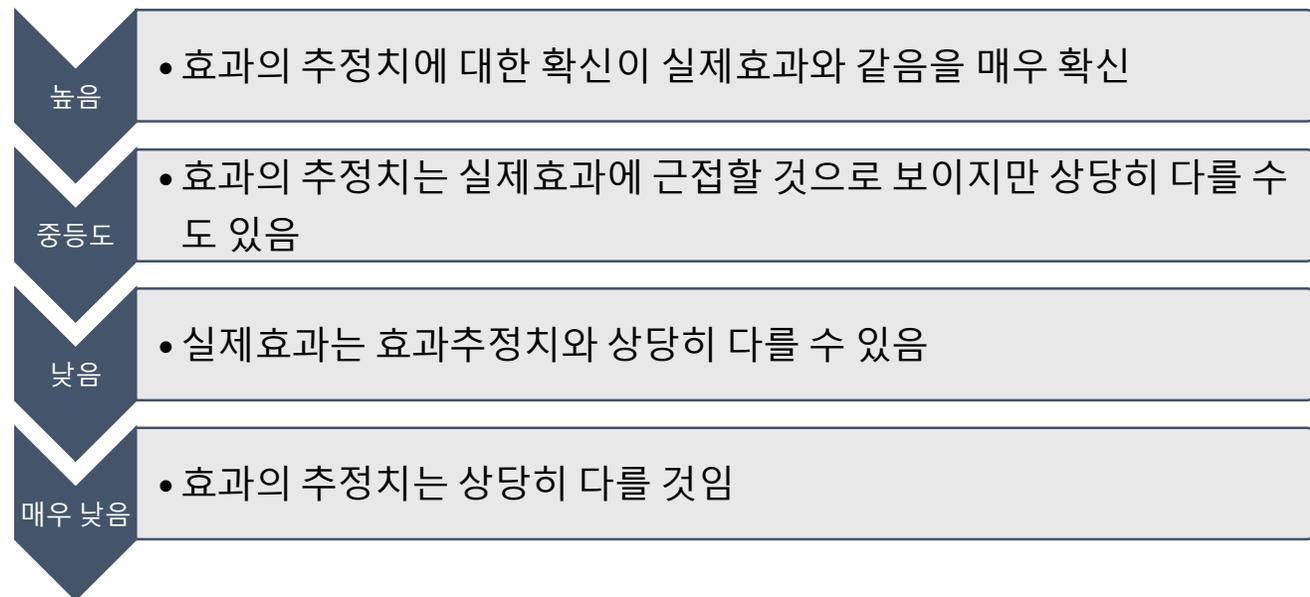


AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both

Beverley J Shea,^{1,2,3} Barnaby C Reeves,⁴ George Wells,^{3,5} Micere Thuku^{1,2} Candyce Hamel,¹ Julian Moran,⁶ David Moher,^{1,3} Peter Tugwell^{1,2,3,7} Vivian Welch,^{2,3} Elizabeth Kristjansson,⁸ David A Henry^{9,10,11}

근거수준의 평가 : GRADE

- 근거의 수준 : 특정중재의 **효과**에 대해 **확신하는 정도**
- **효과추정치에 대한 확신정도**



근거수준의 평가 : 하향조정

영역	평가내용	하향 조정 예
비뚤림 위험	무작위, 배정순서 은폐, 눈가림 부재	10개의 무작위 연구에서 2개 연구는 눈가림 x
비일관성	연구결과마다 추정치가 크게 다른 경우	이질성이 높음
근거의 간접성	직접 비교가 아닌 경우, 인구, 중재, 비교, 문헌 고찰 측면에서 직접 적이지 않음	COVID 19 연구가 아닌 SARS, 메르스 연구
결과의 비정밀성	연구대상자가 거의 적고, 신뢰구간이 넓은 경우	RR : 1을 통과하지 않으며, 0.75보다 작거나, 1.25보다 큰 경우는 적절
출판비뚤림	연구결과에 따라 출판되지 않을 수 있음	규모가 작고, 효과가 적은 연구는 발표되지 않을 가능성 있음

체계적 문헌고찰

명백하고 재현성 있는 방법에 따라 확고한
연구목적과 방법으로 이뤄진 일차문헌의 개괄

(Kim et al., 2020)

메타분석

동일한 주제로 수행된 다양한 연구로부터 도출된
결과들을 계량적으로 분석하는 통합적인 접근 방법

(Borenstein et al., 2009; Cooper, 2017; Polanin & Tanner-Smith, 2014)

➤ 메타분석의 장점

- 모수를 더 정확하게 추정(better parameter estimates)
- 다중 결과를 분석, 평가(assessment of outcomes in multiple domains)
- 결과에 영향을 줄 만한 요인에 대한 분석(moderator analysis)
- 오류와 왜곡을 최소화 (minimizing error and bias)

AMSTAR 2.0

연구문제
문헌선택
자료추출
자료분석
결과보고 및 해석

AMSTAR 2.0 vs. AMSTAR

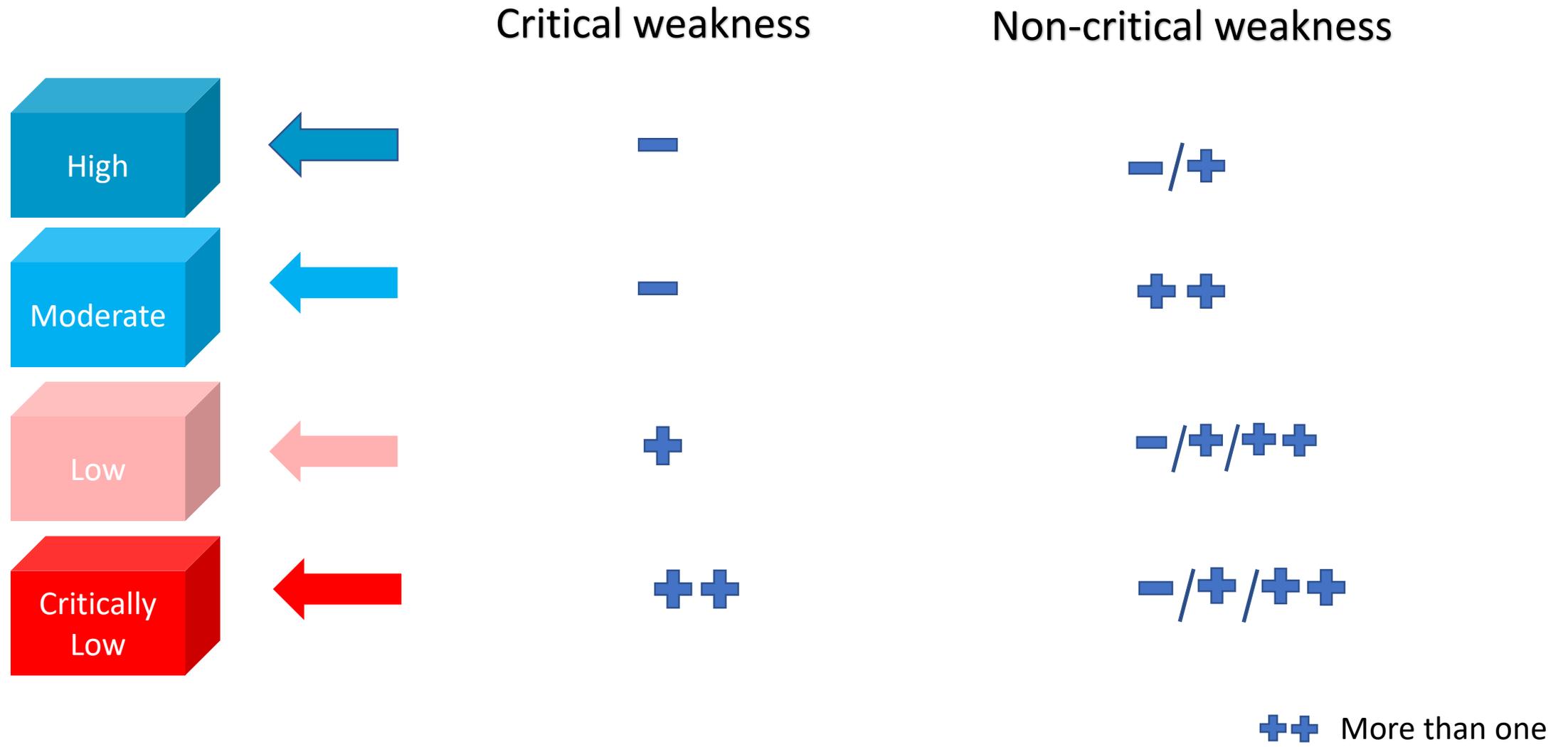
Critical Appraisal tool for Systematic Review

- Shea et al., 2017
 - 비무작위 연구 포함
 - 16개 문항
 - 총점 X
 - 핵심평가항목(critical domain)
 - 7개
- Shea et al., 2007
 - RCT 평가
 - 11개 문항
 - 총점

Critical domains

- Protocol registered before commencement of the review (item 2)
- Adequacy of the literature search (item 4)
- Justification for excluding individual studies (item 7)
- Risk of bias from individual studies being included in the review (item 9)
- Appropriateness of meta-analytical methods (item 11)
- Consideration of risk of bias when interpreting the results of the review (item 13)
- Assessment of presence and likely impact of publication bias (item 15)

Rating overall confidence in the results of the review



연구질문

PICO와 포함기준

1 Did the research questions and inclusion criteria for the review include the components of PICO?

FOR YES:

Optional(recommended)

Population

Timeframe for follow-up

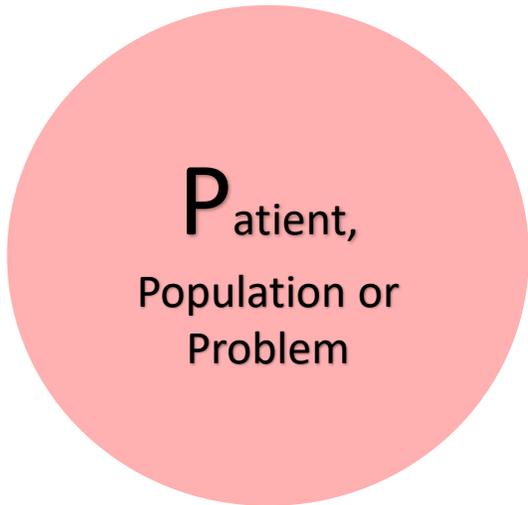
Yes

Intervention

No

Comparator group

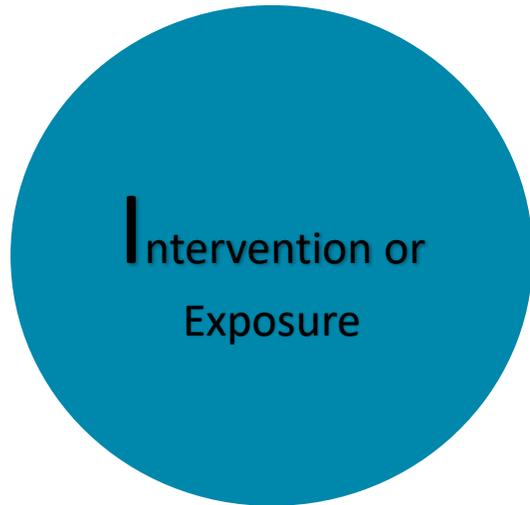
Outcome



Patient,
Population or
Problem

- 환자 집단 규명
- 대상자를 특정 연령군, 특정속성을 가진 군 등

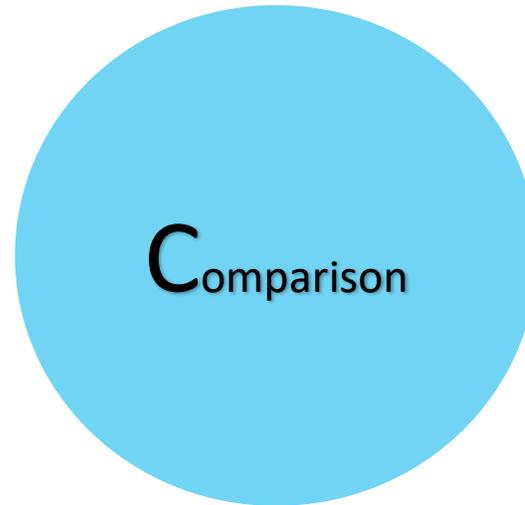
대동맥판협착증
환자



Intervention or
Exposure

- 도입하고자 하는 **중재법**
- 중재의 구체적 규명을 통해 주제에 맞는 검색 할 수 있음

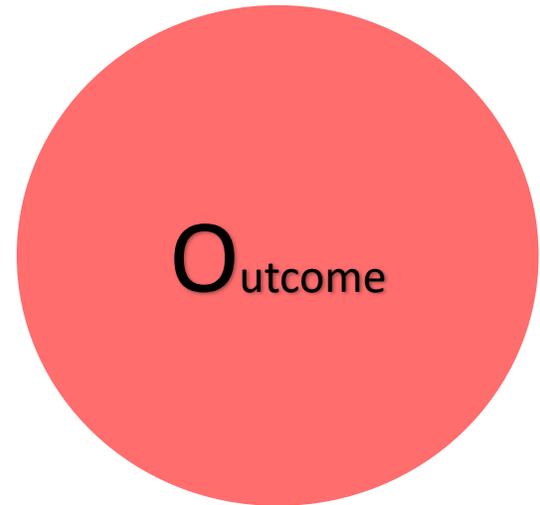
TAVI



Comparison

- 중재 또는 관심주제와 **비교하고자 하는 것**
- 현재 시행되고 있는 방법, 중재의 한계 기술

기존 외과적 시술



Outcome

- 관심 갖는 결과

사망률, embolism
발생율

사전프로토콜



2 Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?

For Partial Yes:

The authors state that they had a written protocol or guide that included ALL the following:

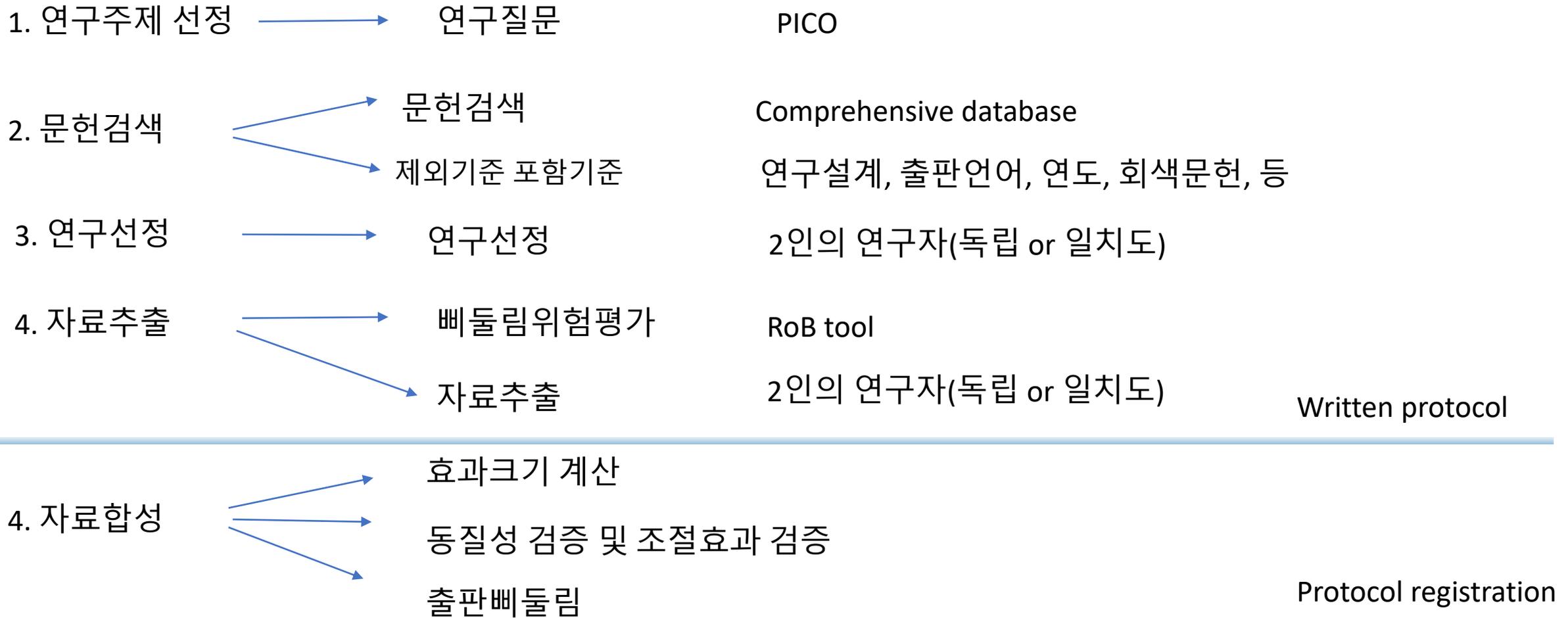
- review question(s)
- a search strategy
- inclusion/exclusion criteria
- a risk of bias assessment

For Yes:

As for partial yes, plus the protocol should be registered and should also have specified:

- a meta-analysis/synthesis plan, if appropriate, and
- a plan for investigating causes of heterogeneity
- justification for any deviations from the protocol

Yes
Partial Yes
No



포함기준

무작위 vs 비무작위

3 Did the review authors explain their selection of the study designs for inclusion in the review?

For Yes, the review should satisfy ONE of the following:

Explanation for including only RCTs

YES

OR Explanation for including only NRSI

NO

OR Explanation for including both RCTs and NRSI



4 Did the review authors use a comprehensive literature search strategy?

For Partial Yes (all the following):

searched at least 2 databases
(relevant to research question)
provided key word and/or search strategy
justified publication restrictions
(e. g. language)

For Yes, should also have (all the following):

searched the reference lists /
bibliographies of included studies
searched trial/study registries
included/consulted content experts
in the field
where relevant, searched for grey
literature
conducted search within 24 months
of completion of the review

Yes
Partial Yes
No



구분	분야
PubMed	Biomedical 관련 최신 의학서지 정보 검색 가능한 의학분야 최고의 데이터베이스 (의학, 간호학, 치의학, 수의학)
EMBASE	생물의학, 약학 Medline과 중복되는 논문은 30~40% 내외
CINAHL	보건학 분야의 데이터 베이스로서, CINAHL with full text를 통하여 약 490여 종 저널의 원문이 제공됨
ProQuest	전 세계의 학위논문, 학술지, 신문, 45만 권 이상의 전자책 제공
Web of Science	ISI에서 선정한 과학기술, 사회과학, 예술 및 인문학 분야의 저널에 수록 된 문헌의 서지 정보 및 인용 정보 제공

연구 선정

2인이 중복 선정

5 Did the review authors perform study selection in duplicate?

For Yes, either ONE of the following:

at least two reviewers independently agreed on selection of eligible studies

Yes

and achieved consensus on which studies to include

NO

OR two reviewers selected a sample of eligible studies and achieved good agreement (at least 80 percent), with the remainder selected by one reviewer.



7 Did the review authors provide a list of excluded studies and justify the exclusions?

For Partial Yes:

provided a list of all potentially relevant studies that were read in full-text form but excluded from the review

For Yes, must also have:

Justified the exclusion from the review of each potentially relevant study

Yes

Partial Yes

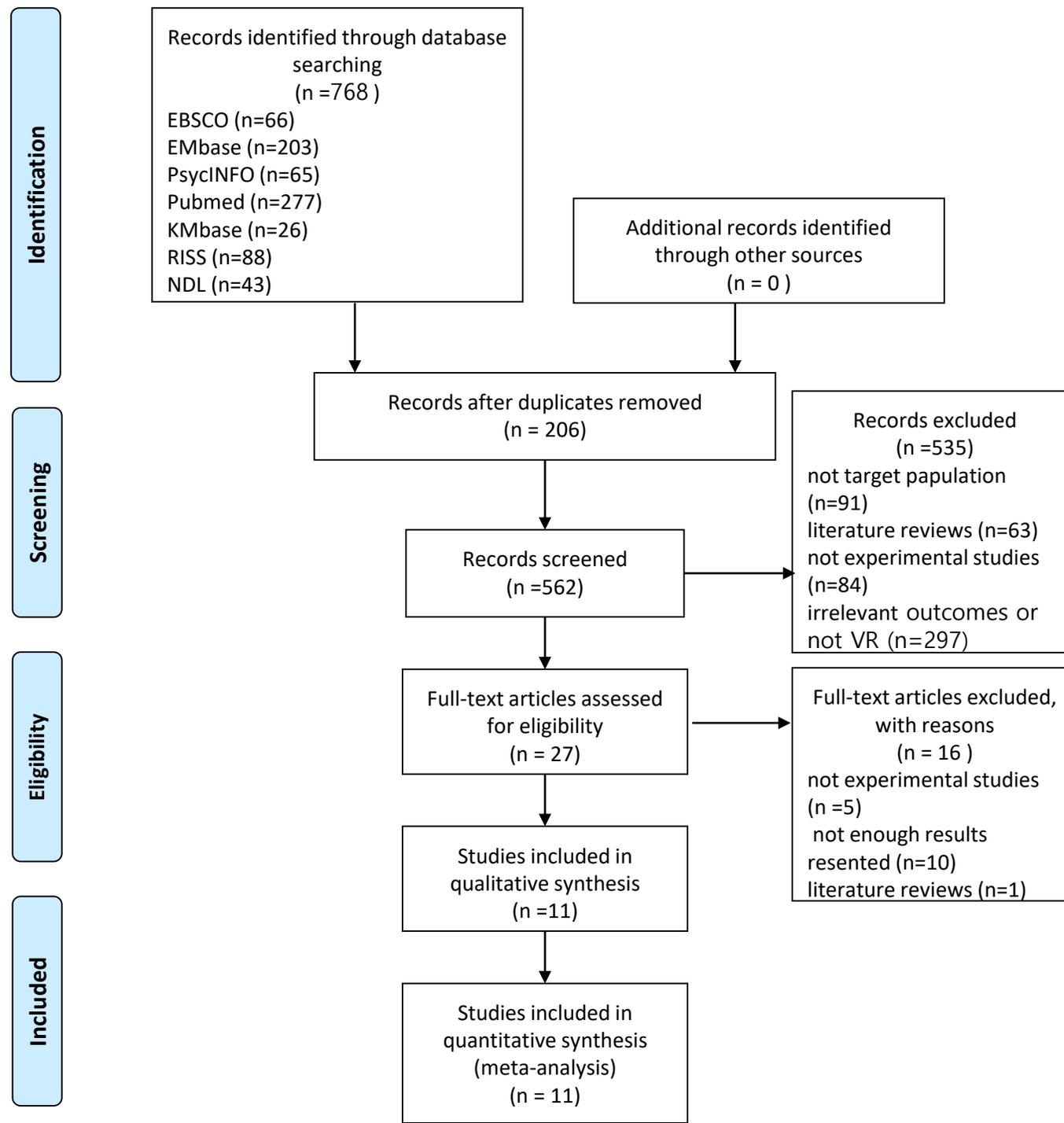
No

Selecting Studies

문헌선정 과정

- 중복 연구 제거
- 제목과 초록 검토
- 전문(full text) 검토
 - 기계적인 제외x
 - 복수의 보고서
 - 필요시 저자 연락
- 최종 포함 선정

PRISMA Flow Chart 예



- 독립적인 2인이 참여
 - 2인이 연구 선정과정
 - 일치도 검사 80% 이상시
 - 불일치 : 토론, 제 3자의 중재
- 배제연구 목록
 - 선정기준은 충족하나 추가 평가에서 배제된 연구
 - 잘 알려진 연구로, 일부 독자들은 관련성이 있다고 평가할 수도

자료추출

2인이 중복추출

6 Did the review authors perform data extraction in duplicate?

For Yes, either ONE of the following:

at least two reviewers achieved consensus on which data to extract from included studies

Yes

No

OR two reviewers extracted data from a sample of eligible studies and achieved good agreement (at least 80 percent), with the remainder extracted by one reviewer

8 Did the review authors describe the included studies in adequate detail?

For Partial Yes (ALL the following):

described populations

described interventions

described comparators

described outcomes

described research designs

For Yes, should also have ALL the following:

described population in detail

described intervention in

detail (including doses where relevant)

described comparator in detail (including doses where relevant)

described study's setting

timeframe for follow-up

Yes

Partial Yes

No

자료추출

개별 연구의 연구비지원

10 Did the review authors report on the sources of funding for the studies included in the review?

For Yes

Must have reported on the sources of funding for individual studies included

Yes

in the review. Note: Reporting that the reviewers looked for this information

No

but it was not reported by study authors also qualifies

Extract the Data 자료 추출

- 자료? 각 연구의 정보
 - 연구방법 : 연구설계, 모집방법, 대상자 추적기간, 결측치 처리방법
 - 대상자 : 연령, 성별, 질환, 사회경제적 상태, 지역, 국가, 환경
 - 중재 : 제공방법, 중재기간, 빈도, 제공자, 대조군 처치 등
 - 중재결과 : 측정변수, 측정도구, 평가시점
 - 결과 : 대상자수, 위험비, 오즈비, 평균차이
 - 표준오차, 신뢰구간, 통계량, p값으로도 계산
 - 기타 : 연구비출처
- 프로토콜 작성
- 신뢰도 및 합의
 - 2인 이상의 추출자가 독립적으로 시행
 - 불일치는 토의
 - 제3자 검토



비뚤림위험

Assessment

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?

RCTs		
For Partial Yes, must have assessed RoB from unconcealed allocation, and lack of blinding of patients and assessors when assessing outcomes (unnecessary for objective outcomes such as all cause mortality)	For Yes, must also have assessed RoB from: allocation sequence that was not truly random, and selection of the reported result from among multiple measurements or analyses of a specified outcome	Yes Partial Yes No Includes only NRSI

NRSI		
For Partial Yes, must have assessed RoB: from confounding, and from selection bias	For Yes, must also have assessed RoB from: methods used to ascertain exposures and outcomes, and selection of the reported result from among multiple measurements or analyses of a specified outcome	Yes Partial Yes No Includes only RCTs

Assess Risk of Bias

- 개별 연구의 방법론적 질 평가
 - 연구의 내적 타당도 평가
 - 체계적인 오류 확인
 - 중재효과의 과대, 과소추정 요소

질평가 도구

- RoB 2.0
 - 무작위배정 비교 임상연구, 비무작위배정 비교 임상연구
 - 연구자가 연구대상자를 각 집단에 배정한 경우
- Jadard score
 - 무작위 배정 2문항, 눈가림문항 2문항, 탈락 1문항
- SIGN
 - 연구설계별 체크리스트
 - SR, 비교임상시험, 환자-대조군 연구, 코호트 연구, 진단법 평가연구
- RoBANS ver 2.0 : 비무작위 연구
 - 교란, 선택, 정보, 보고 비뚤림/ 총 8개 항목
 - 낮은, 높음, 불확실
 - 코호트연구, 환자-대조군 연구, 전후 연구, 단면연구
- ROBINS-I





11

If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?

RCTs

For Yes:

The authors justified combining the data in a meta-analysis
AND they used an appropriate weighted technique to combine study results and
adjusted for heterogeneity if present.
AND investigated the causes of any heterogeneity

Yes

No

No meta-analysis
conducted

For NRSI

For Yes:

The authors justified combining the data in a meta-analysis
AND they used an appropriate weighted technique to combine study results,
adjusting for heterogeneity if present
AND they statistically combined effect estimates from NRSI that were adjusted
for confounding, rather than combining raw data, or justified combining raw data
when adjusted effect estimates were not available
AND they reported separate summary estimates for RCTs and NRSI separately
when both were included in the review

Yes

No

No meta-analysis
conducted

효과크기

- 중재의 효과크기
- 모든 연구의 결과들이 쉽게 해석, 비교, 통합될 수 있도록, **표준화된 척도로 요약**
- 효과크기의 유형은 표준화된 평균 차이(Cohen's d, Hedges' g), 두 집단의 비율(risk ratio, odds ratio, risk difference), 두 변수 간의 상관관계(correlation coefficients)

Effect size d	Percentage of the experimental group above the average of the control group
0.30 (weak)	62%
0.50 (medium)	69%
0.80 (large)	79%

가중치

- 가중치가 큰 연구들은 정밀성(precision)이 높은 (즉 신뢰구간이 짧은) 연구들이며, 가중치가 작은 연구들은 정밀성이 낮은 (즉 신뢰구간이 긴) 연구
- 가중치는 분산의 역수(the inverse of the variance)로 계산되며, 표본이 클수록(즉 분산이 작을수록) 높은 가중치가 부여됨

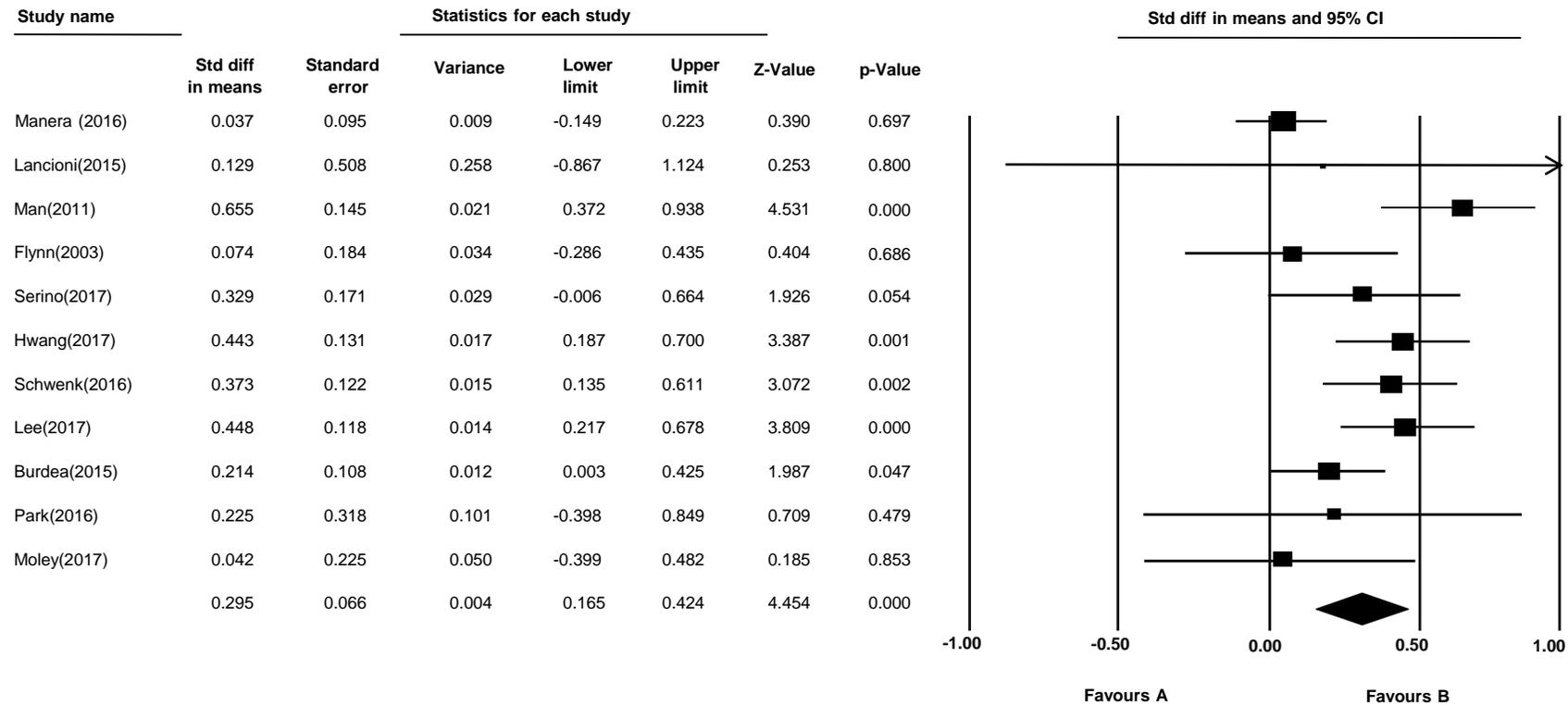
$$W_i = \frac{1}{V_i}$$

평균효과크기

- 개별연구의 효과크기에 가중치를 부여해서 전체 연구의 효과크기
→ 평균효과크기를 산출

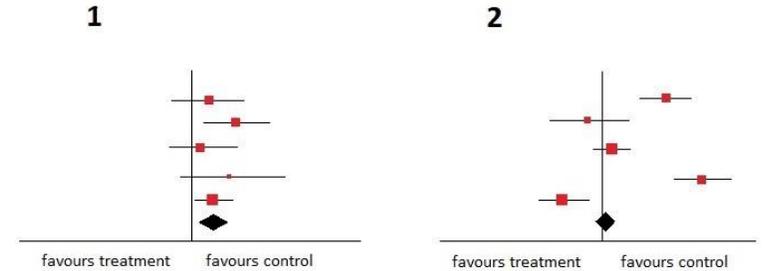
Forest plot

- 개별연구의 효과크기 : 정사각형의 크기는 가중치, 위치는 효과크기의 방향(+/-)
- 평균효과크기



이질성의 의미

- 효과크기 간의 차이(differences in effect sizes)
 - 각 개별연구로부터 도출된 추정된 모집단의 효과크기가 다름



이질성 통계치 Q , I^2 및 I^2

- Q 값
 - 각 효과크기들의 관찰된 분석(observed weighted sum of squares)
 - 표집오차분산과 실제 연구 간 분산(true variance)을 포함하는 총분산(total variance)
 - Q 값은 자유도(df) 즉, 포함된 연구수(k)에 많은 영향, 이질성 존재 여부 검증
- I^2
 - 각 연구 간 효과크기의 실제분산을 나타내며, 표준화된 값으로 표현되기 때문에 서로 비교
- I^2
 - 총분산에 대한 실제분산의 비율, I^2 과 달리 절댓값이 아니라 비율(%)로 나타냄
 - I^2 이 25%이면 이질성이 작은 것, 50%이면 중간 크기 정도로, 75% 이상이면 이질성이 매우 큰 것

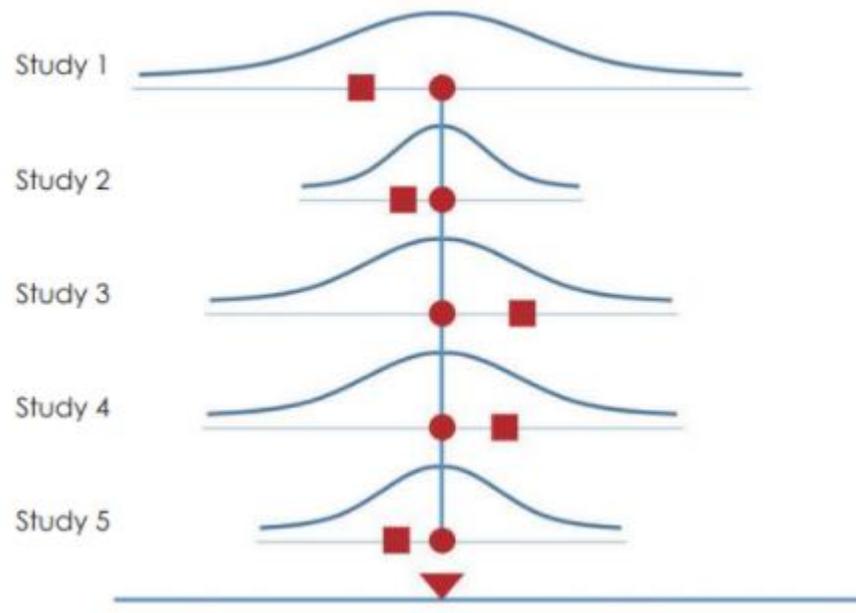
0~0.2 : trivial
0.2~0.5 : moderate
0.5이상 : high

25% : low
50% : moderate
75% : high

	모집단 효과크기	관찰된 효과크기
개별 연구	●	■
종합 결과	▼	

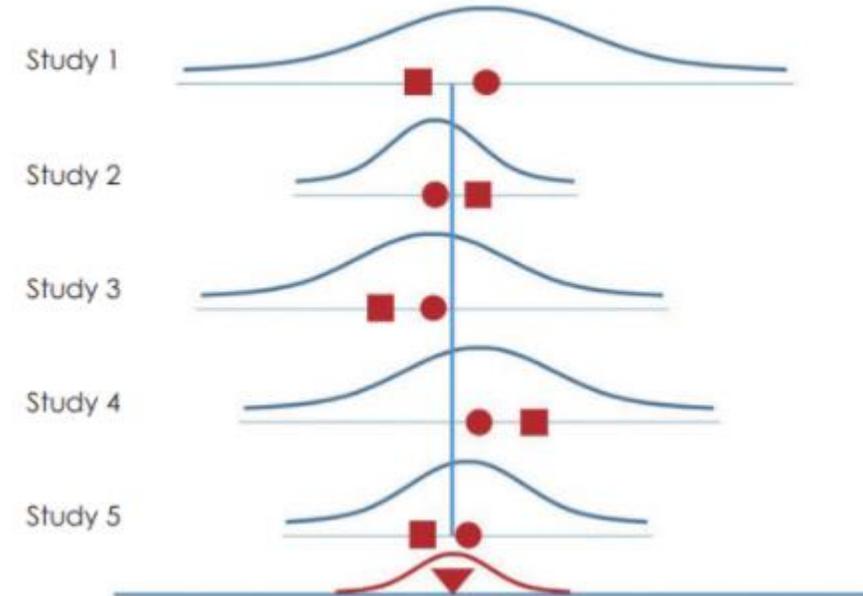
고정효과모형

출처: Borenstein et al., 2009, p.65에서 재구성



랜덤효과모형

출처: Borenstein et al., 2009, p.65에서 재구성



Dealing with Heterogeneity

- 이질성 여부 확인
 - Visual, 통계
 - 자료추출 재확인
 - RoB
- 이질성의 원인확인
 - Clinical heterogeneity (참여자, 중재, 결과 등)
 - 지역, 환경, 연령, 성별, 진단명, 질병중증도, 중재량, 강도, 결과변수
 - Methodological heterogeneity (연구수행방법)
 - 연구설계, 연구의 질, 분석방법(ITT, PP)
- 이질성을 설명해야 : 근거가 하향
 - Subgroup analysis : 하위집단간 효과크기 비교
 - Meta regression

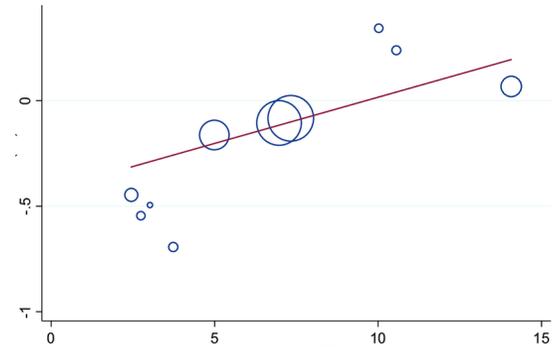


Table 2 Effect Sizes by Subgroup According to Evaluation Levels, and Outcomes

Outcomes	Sub-outcomes	k	-95% CI	ES	+95% CI	SE	p value
Level of Evidence	MCQ	5	0.14	0.42	0.70	0.14	.00
	Observer	8	-0.30	0.11	0.52	0.21	.50
	Self-reported	42	0.14	0.31	0.47	0.08	.00
Level of Evaluation	Learning	43	0.22	0.38	0.55	0.08	.00
	Reaction	12	-0.23	0.01	0.25	0.12	.93
Domain of Learning	Affective	25	0.25	0.50	0.74	0.12	.00
	Cognitive	8	0.07	0.27	0.46	0.09	.00
	Psychomotor	10	-0.15	0.17	0.49	0.16	.29

k = number of effect size; *ES* = effect size; *SE* = standard error; MCQ = multiple-choice questions.

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?

For Yes:

included only low risk of bias RCTs

Yes

OR, if the pooled estimate was based on RCTs and/or NRSI at variable RoB, the authors performed analyses to investigate possible impact of RoB on summary estimates of effect.

No

No meta-analysis conducted

결과 및 해석

배뚫림 위험



13 Did the review authors account for RoB in individual studies when interpreting/discussing the results of the review?

For Yes:

included only low risk of bias RCTs

Yes

OR, if RCTs with moderate or high RoB, or NRSI were included the review provided a discussion of the likely impact of RoB on the results

No

결과 및 해석

이질성 설명

14

Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?

For Yes:

There was no significant heterogeneity in the results

OR if heterogeneity was present the authors performed an investigation of sources of any heterogeneity in the results and discussed the impact of this on the results of the review

Yes

No



- 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?

For Yes:

performed graphical or statistical tests for publication bias and discussed
the likelihood and magnitude of impact of publication bias

- Yes
- No
- No meta-analysis conducted

Interpreting Results 결과보고 및 해석

- 효과크기, 방향, 일관성
- 근거의 강도
 - 개별연구의 뼈뿔림 위험
 - 출판 뼈뿔림
 - 용량반응 등

- 통계적 유의성에 상관없이 표본이 큰 연구들은 출판될 가능성이 높음
- 표본이 작은 연구들은 출판되지 않을 가능성이 가장 높음
그렇지만 효과크기가 크다면 출판될 가능성이 있음

Small-Study Effect : 출판오류가 존재한다는 근거

- 메타분석에 포함된 연구 중 표본크기가 작은 연구는 효과크기가 상대적으로 큰 연구일 가능성이 높다고 할 수 있음
- 표본크기와 효과크기 관계를 고찰

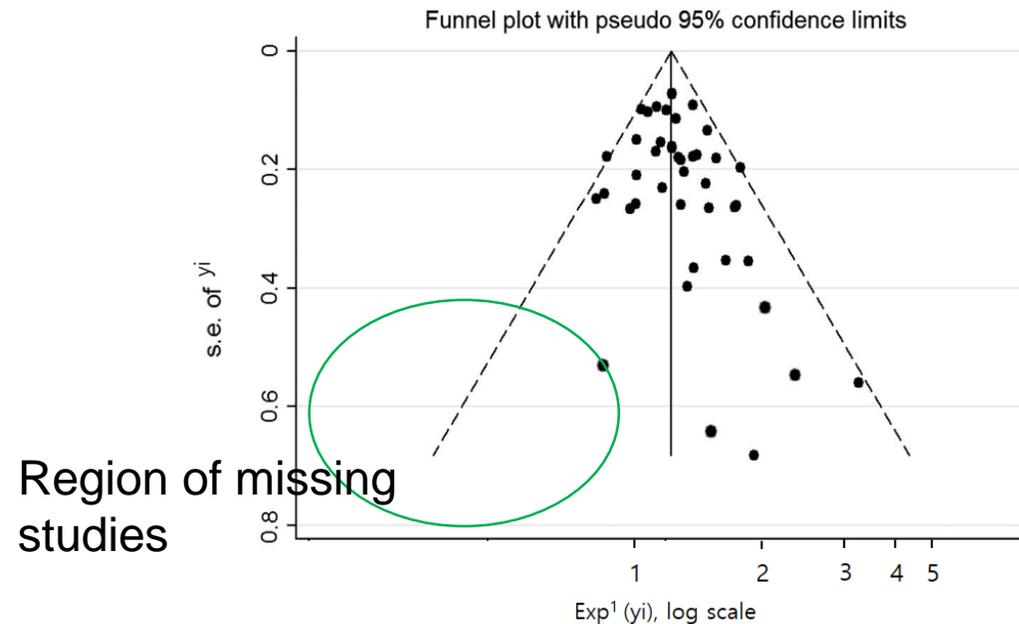
왜곡된 표본(biased sample)이라면, 전체효과크기는 과대추정(overestimated)(Borenstein et al., 2009)

출판비돌림 확인

'Small-Study Effect' 존재 유무에 대한 확인 (funnel plot)이용

비대칭에 대한 시각적 분석

(10편 이상)

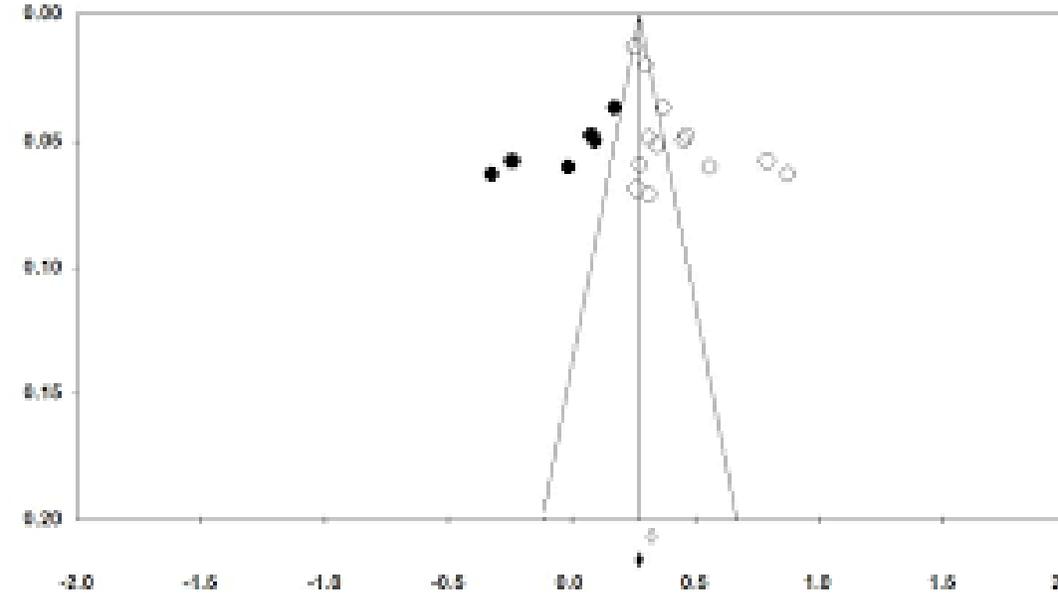


Funnel plot asymmetry의 통계적 분석

- 효과크기와 표준오차는 관계가 없다는 귀무가설(bias=0, 즉 no Small-Study Effect)을 기각하게 되어 효과크기와 표준오차의 관계는 통계적으로 유의미한 관계가 있음

• Trim-and-Fill기법 :

- ① Trim: funnel plot에서 먼저 좌우대칭이 되도록 대칭이 되지 않은 연구 제외
- ② 제외시킨 후 **평균계산**
- ③ Fill: 계산된 평균을 기준으로 제외한 연구들을 복원 -> 대칭이 되도록 **누락되었다고 생각하는 연구를 채움**



- Egger test : 효과크기와 1/standard error (precision)상의 선형관계가 있는가?
 - 있다면 출판편의가 있음
- Fail-safe N : “file-drawer” method
 - Negative 결과가 나와서 출판하지 않고 캐비닛 속에 있는 연구의 개수를 예상
 - Overall treatment effect가 유의하지 않으려면 몇 편의 연구가 추가되어야는가?

크면 바뀔
가능성이 낮음 :
Tolerance level
5K+10

이해상충

- 16** Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?

For Yes:

The authors reported no competing interests OR

Yes

The authors described their funding sources and how they managed potential conflicts of interest

No

<https://www.youtube.com/watch?v=61dKq6RfmDI>

메타분석 연구의 질 평가

ORIGINAL ARTICLE

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<http://dx.doi.org/10.4040/jkan.2013.43.6.736>

국내 간호학 분야 메타분석 논문의 질 평가

김정희 · 김애경

단국대학교 간호학과

A Quality Assessment of Meta-Analyses of Nursing in South Korea

EBSJ Special Section: Systematic Review

Critically Low Confidence in the Results Produced by Spine Surgery Systematic Reviews: An AMSTAR-2 Evaluation From 4 Spine Journals

Joseph R. Dettori¹ , Andrea C. Skelly², and Erika D. Brodt²

AO
SPINE

Global Spine Journal
2020, Vol. 10(5) 667-673
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 SAGE

- 메타분석의 질 관리가 필요
 - 학문분야, 주제, 학회지
- Overview of SR
 - Medication adherence (Wihelmsen et al., 2019)
 - 32편중 18편은 critically low, 15편은 low, 8편은 moderate, 6편은 high
 - Tai Chi for COPD (Yang et al., 2021)
 - 12편 논문중에 10편은 최하, 2편은 하

분석 대상 논문의 선정 및 수집

- 검색
 - “spine” or “spinal” in the title of the journal
 - IF > 2
 - publications listed as a SR or meta-analysis
- 제외
 - prognostic factors, diagnostic criteria, therapy in nonoperative patients, and therapy in postoperative patients
- 평가
 - AMSTAR 2.0

연구 선정절차

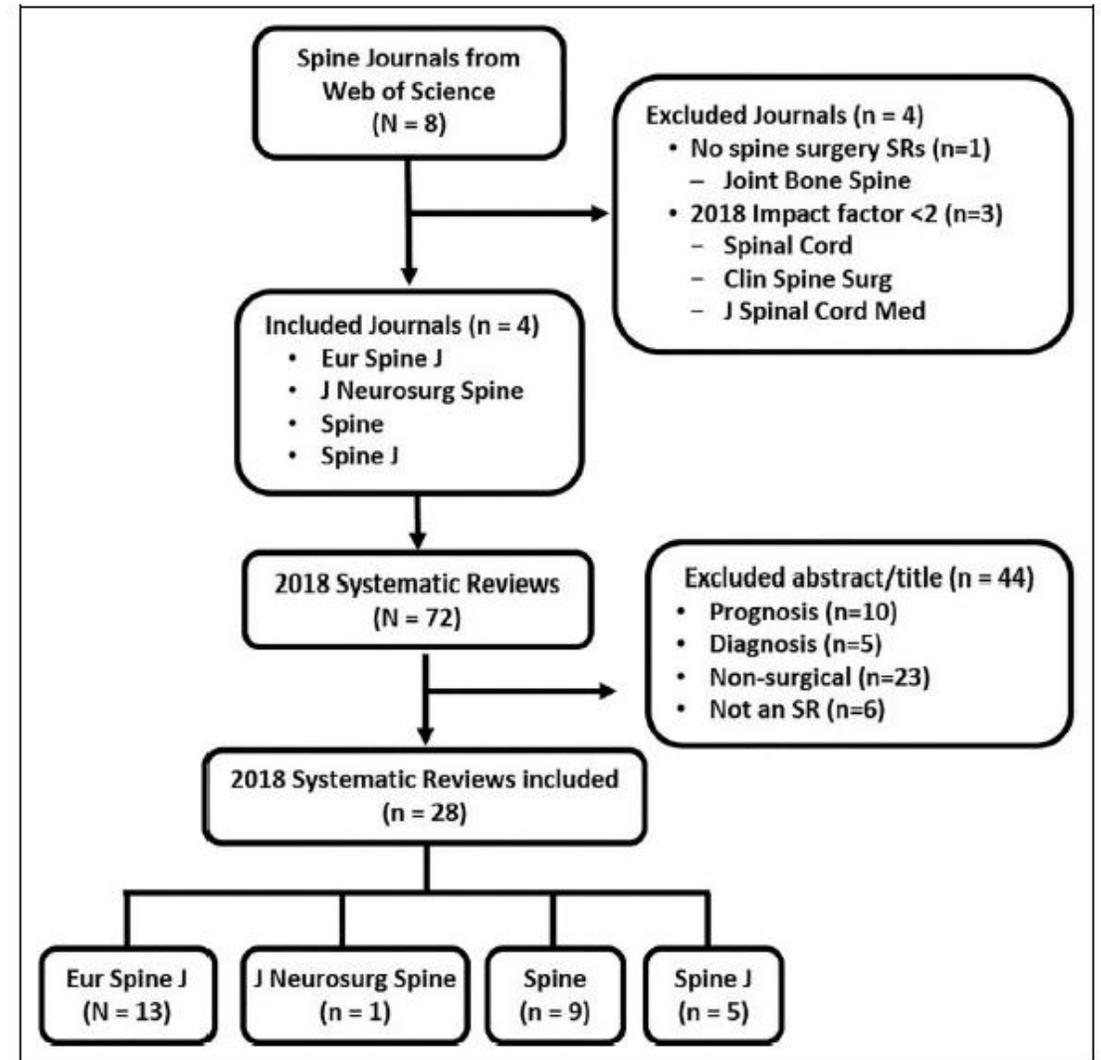


Figure 1. Study selection. Abbreviation: SR, systematic review.

연구결과

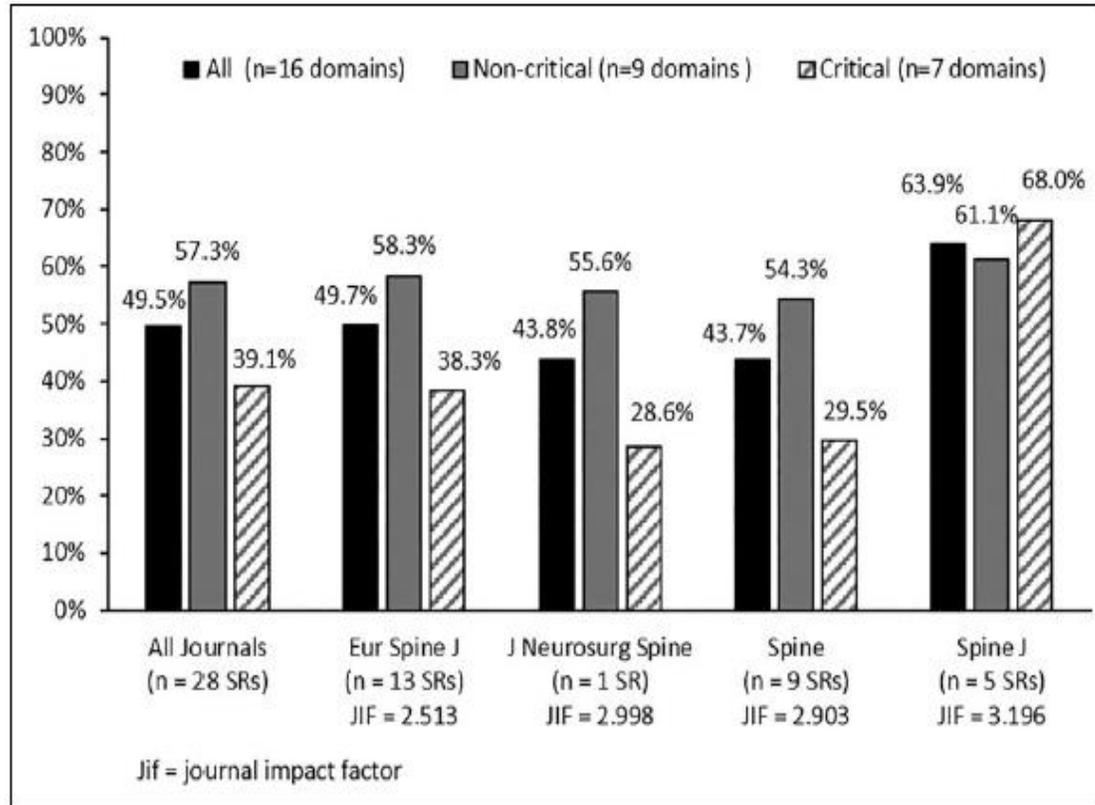


Figure 2. Mean percentage of AMSTAR 2 domain items satisfying the AMSTAR 2 criteria by journal.
Abbreviations: JIF, journal impact factor; SR, systematic review.

Table 3. Confidence in the Results of the Systematic Review.

	High, n (%)	Moderate, n (%)	Low, n (%)	Critically Low, n (%)
Overall	0 (0.0)	0 (0.0)	2 (7.1)	26 (92.9)
<i>European Spine Journal</i>	0 (0.0)	0 (0.0)	1 (7.7)	12 (92.3)
<i>Journal of Neurosurgery Spine</i>	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)
<i>Spine</i>	0 (0.0)	0 (0.0)	0 (0.0)	9 (100.0)
<i>Spine Journal</i>	0 (0.0)	0 (0.0)	1 (20.0)	4 (80.0)

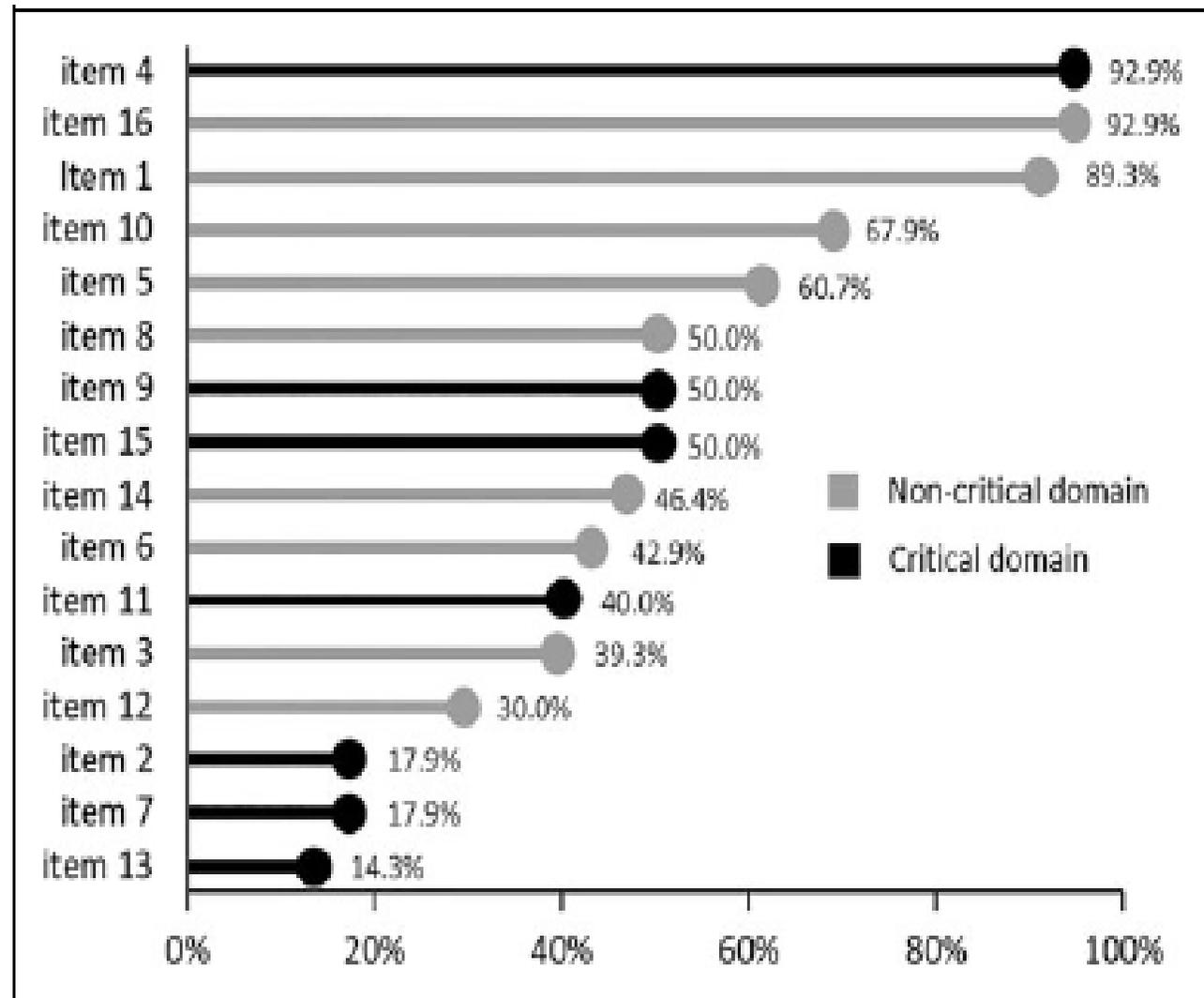


Figure 3. Percentage of systematic reviews satisfying the AMSTAR 2 criteria by domain item number.

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감사합니다!

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