



Middle East Journal of

Rehabilitation and Health

ISSN: 2423-4451



The Official Journal of **Semnan** University of Medical Sciences

دانشگاه علوم پزشکی و خدمات بهداشتی درمانی سمنان کارگاه دو روزه نحوه نگارش مقالات علمی انگلیسی

مدرس‌ان (به ترتیب الفبا)
دکتر امیر هوشنگ بختیاری
دکتر علی رشیدی پور
دکتر پرویز کوخانی

روز اول سه شنبه ۱۸ مهر ۱۳۹۶



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جلسه اول

طبقه بندی مقالات و ساختار علمی مقالات تحقیقی



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Level 1a evidence	Systematic review of all relevant randomized controlled trials (RCT).
Level 1b evidence	Individual RCT
Level 2a evidence	Lower quality systematic review incl. both randomised controlled trials and non-randomised controlled trials and cohort studies
Level 2b evidence	Individual cohort study (including low quality RCT)
Level 3a evidence	Systematic review of case control studies
Level 3b evidence	Individual case control study
Level 4 evidence	Case series (and poor quality cohort and case-control studies)
Level 5 evidence	Expert opinion without explicit critical appraisal, or based on physiology, bench research, text book, or literature review



A Systematic Review is a single convenient paper which review systematically all the available evidence from primary studies.

Randomised Clinical Trial (RCT) is developed by trying to answer questions related to patients or scientific subjects from information gained through research projects or primary studies, that build an **Evidence Pyramid**. Each layer of the pyramid is created from evidence derived from the layers below and someone has done the work involved to value-add.



Systematic reviews and **RCTs** have been named the "gold standard" in the literature, i.e that is the level of evidence to aim for. Unfortunately systematic reviews are still rare, so clinicians need to be able to interpret all available evidence.

Expert Opinion is acknowledged as level 5 and this includes unpublished work, conference notes, text book excerpts, etc. Although changing, this is where much of allied health evidence is available at present.



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Consolidated Standards of Reporting Trials (CONSORT)

<http://www.consort-statement.org/>



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جلسه دوم

نگارش خلاصه مقاله یا Abstract



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اجزای یک خلاصه مقاله خوب چیست؟

یک خلاصه مقاله خوب چه خصوصیات دارد؟



An example

Title: Electrocardiographic Changes and Exposure to Organic Solvents

Methods : It was a historical cohort study and was done on workers of industries. The study was done with flexible interview, physical examination and checklist by getting history. Group 1 was workers in production line of solvent and color works, group 2 was administrative personnel and group 3 was workers from other industries that had not solvent exposure. Data were analyzed with SPSS 16, t-test, ANOVA and Chi-2 were calculated with considering $P < 0.05$ as significant level. Relative risks were calculated with confidence interval 95%.



Title: Relationship between parental bonding and academic-burnout and addiction potential among Iranian students: a cross sectional study

Results:

From a total of 300 students participated, 245 of them (85%) responded to the questionnaire (33.5% male and 66.5% female). The mean age of the participants was 20.34 years. Only 40% of fathers and 23.2% of mothers had an education degree above high school diploma. male gender, higher Grade Point Average, more academic-burnout, more care by both parents, and less control by father were associated with increased susceptibility of students to addiction.



Title: Relationship between parental bonding and academic-burnout and addiction potential among Iranian students: a cross sectional study

Conclusion:

Due to factors related to susceptibility of students to addiction, the Mental Health Care Unit of the Ministry of Health and Medical Education can play an important role in implementing the necessary measures to reduce the medical students' tendency toward drug abuse.



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لغات کلیدی یا Keywords

Best keywords?

<https://meshb.nlm.nih.gov/MeSHonDemand>



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جلسه سوم

نگارش مقدمه یا Introduction



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اجزای یک مقدمه مقاله خوب چیست؟

یک مقدمه چه خصوصیات دارد؟



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- ✓ Avoid obvious and non-relevant facts
- ✓ Avoid long sentences and also short one-sentence paragraphs
- ✓ Avoid burbling
- ✓ Focus on the main topic
- ✓ Present the most recent relevant research on your main topic
- ✓ Present scientific background and explanation of rationale
 - ✓ Present both Pros and Cons
 - ✓ Present the contradictions on your main topic
- ✓ Present specific objectives or hypotheses including;
 - ✓ main question that you are trying to answer
 - ✓ write the purpose of your study



Title: **The effect of whole body vibration on static balance in low arched feet**

INTRODUCTION

The feet are the most distal segments in the lower extremity chain and represent a comparatively small base of support for the body to maintain balance specially in single leg stance (1).

It is generally believed that the function of the feet depends on the shape of the feet (2) .

A low arched foot describes a structural position of the foot in weight-bearing that is associated with reduced height of the medial longitudinal arch (3) .

Since the foot is the interface with the ground during gait, any structural changes may cause compensatory malalignment and consequently mechanical deviations of the entire lower extremity (4).

Williams et al. reported that low-arched runners with decreased leg stiffness experienced more soft tissue injuries than high-arched runners with greater leg stiffness (4-5). In contrast, however, the results of another study indicated that having a lower or higher than normal MLA is not a definite risk factor for sports-related injuries (6).



Title: The effect of whole body vibration on static balance in low arched feet

Being the sole point of direct contact with the ground during weight-bearing situations, the foot is a contributory factor in maintaining stability in two major ways: 1) by offering mechanical support for the body by way of the osteo-ligamentous architecture of the arch and the synchronized function of lower limb muscles 2) by making available sensory information regarding the position of the body from plantar tactile mechanoreceptors (7). Postural control or balance can be defined statistically as the ability to maintain a base of support with minimal movement, which represents a complex interplay between the sensory systems with the visual system as the primary sensory information to maintain postural balance (8).

In a study conducted by Tsai et al. individuals with different foot postures such as pronated or supinated feet have poorer postural control than individuals with neutral feet (9). Indeed these changes result in possible neuromuscular and biomechanical compensations for the changed structural stability.

The inability to adjust or control posture properly may lead to an increased risk of injury (10) . For this reason interventions to improve postural control are frequently incorporated as part of rehabilitation and prophylactic programs (11). Whole body vibration (WBV) is a novel modality that has recently been developed and introduced as a rehabilitative protocol (12-13).



Title: The effect of whole body vibration on static balance in low arched feet

Nevertheless, information on the impact of vibration training on static balance improvement is scarce. Younger adults use distinct patterns of response and strategies to maintain their balance, which are not the same as in other age groups (16). The sole is considered as a 'dynamometric map' having numerous sensors able to spatially code every pressure exerted against the sole. The processing of the cutaneous messages from the sole along with other sensory messages must allow the central nervous system(CNS) to constantly extract body position information and trigger appropriate responses to reduce the gap between the body position and the equilibrium position (17).

As a result, there is limited scientific proof with regarding the effects of WBV as a rehabilitation tool for those with low arched feet. Thus, the objective of this paper is to examine the impact of six weeks WBV on static balance in subjects with low arched feet.

As day-to-day activities include standing, walking and also resting periods, there is therefore a need to establish whether irregular stimulation by the WBV may have the same impact of regular stimulation. This implies that we do not know whether the benefits are lost immediately after removing the WBV or whether these benefits continue. To answer this question we followed up the patients.



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جلسه چهارم

نگارش مواد، روش تحقیق یا **Materials and Methods**



A: General Information about the study such as; Type of the study, Ethical committee report, Clinical trial registration, consent form, type of blinding and how sample size was calculated

B: Demographic characteristics of subjects such as; subject recruitment, numbers, sex, groups of study, randomization method,

C: Intervention details such as; who applied interventions, types, dosage and timing of interventions, complete information about the used device or drug,

D: Measurement Details such as; used instruments and devices including validity and reliability data, measured parameters, timing of measurements, who measured and recorded data

E: Statistical Analysis methods including; type of used software, used tests, the level of significance



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An example

Manuscript Full Title: Investigating the relationship between work - family conflict and job satisfaction of health and medical employees after health system reform implementation plan;

Research method

Population and sampling method

According to the methodology of the study, this study is correlational type of analytical descriptive study. In this study, population of study included all employees of Damghan Velayat Hospital (Semnan University of medical sciences) working in 2016. Sample of study was selected based on the number of employees using proportional stratified method (according to the number of employees in each area and ratio of employees in each group). Accordingly, hospital departments were divided into 13 parts (administrative and medical) and a number of samples were selected using simple random sampling method. Using the formula sample size of study was determined 100. Considering 100% additional sample for higher accuracy ($d=0.08$), sample size was determined to be 110.



Research tool

In this study, two questionnaires were used. One of them was a researcher-made questionnaire measured the job satisfaction of employees after the implementation of health reform plan and the second one was questionnaire assessing the work - family conflict that initially they has no acceptable validity and reliability. For this purpose, pilot study of questionnaire was implemented on a small group (n=10) of the target group who were interviewed by a researcher with the aim of examining the ability to understand people, and their interpretation and perceptions and investigation of alternative words. At this stage, information obtained about the questionnaire was analyzed and the necessary reforms were applied in final version of the questionnaire. Then, to ensure validity and reliability of tool, face validity to find difficulty in understanding phrases and words, optimal consistently and relation of cases, the probability of the uncertainty and ambiguity and inadequate understanding was examined by a group of experts. The content validity of the tool in order to ensure that the content of the test representing that the structure that claims measures it. It was measured both qualitatively and quantitatively, and accordingly data were collected. Validity and reliability of the questionnaire for the work and family conflict with Cronbach Alpha coefficient of 0.89 and for employee job satisfaction questionnaire with Cronbach's alpha coefficient of 0.9 after the implementation of the health system reform plan were approved.



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جلسه ششم

نگارش یافته ها یا Results



- ✓ Present the number of dropped subjects in each groups of study
- ✓ Compare demographic characteristics and base line data between groups
- ✓ Explain findings clearly including exact p value, percent of changes or differences
- ✓ Avoid presenting data repeatedly
- ✓ Define used abbreviations in each table and graph separately
- ✓ Present the measurement unit for parameters in the tables and graphs
- ✓ Avoid more than 2 decimals for presented data (except for p values)
- ✓ Always use Error bar for presented data by Graph
- ✓ Always use SD or SEM after mean values in Tables



Table 2. Correlations between peak expiratory flow and the thickness of individual and combined muscle groups

Muscle	r value
EO + IO	0.563**
RA + EO + IO	0.555**
RA + IO	0.550**
RA + EO + IO + TrA	0.526**
EO + IO + TrA	0.515**
IO	0.513**
RA + IO + TrA	0.508**
IO + TrA	0.455*
RA + EO	0.388*
RA + EO + TrA	0.383*
RA	0.364*
RA + TrA	0.341
EO	0.323
EO + TrA	0.313
TrA	0.108

RA: rectus abdominis. EO: external oblique. IO: internal oblique. TrA: transverse abdominis. **: $p < 0.01$. *: $p < 0.05$.

Table 5: Correlation among job satisfaction dimensions and job dimensions

		Total objectives and policies	Total promotion opportunities	Total wages	Total physical conditions of workplace	Total training
Total investigation of job dimensions	Correlation Coefficient	.211*	.435**	.451**	.591**	.694**
	Sig. (2-tailed)	.046	.000	.000	.000	.000



Table 3:relationship between job field and total score of work and family conflict

		Total conflict					
		Less than 15		More than 15		Total	
		n	%	n	%	n	%
Filed	Medical	8	25	24	75	32	100.0%
	Administrative and financial	1	4	24	96	25	100.0%
	Service	8	15.7	43	84.3	51	100.0%
	Total	17	15.7	91	77.1%	108	100.0%



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جلسه هفتم

نگارش بحث یا Discussion



- ✓ Avoid presenting findings in the discussion section
- ✓ Discussion section should be **critical** and **comprehensive**
- ✓ Discuss your findings with **opposing** reports
- ✓ Avoid discuss your findings with **congruent** studies
- ✓ Use more **recent** literature to discuss your findings
- ✓ Present the limitations of study and discuss how these limitations might have affected the results
- ✓ Conclusion should be based on the results and findings
- ✓ Avoid conclusions that were **over-stated** and/or not supported by data



Sample for discussion

Radiation protection is both subjective and objective which is ideally performed if the necessary equipment and accessory exist and the personnel have enough knowledge and attitude to use them in daily practice. It is noteworthy that those working in radiation departments and exposed to x-ray should protect from harmful exposure [5]. The study that was done by Rassin et al, showed lack of knowledge about the radiation hazards [14]. Dehghani et al failed to find significant differences between different genders in radiation awareness[8]. In exploring the knowledge of operating room personnel about radiation protection, we found that the mean score of knowledge for men (50.56) were higher than women (43.84).



Discussion (Continuous)

Although gender did not affect knowledge level of personnel towards radiation protection, but it could be concluded that the knowledge of male personnel was better than female in radiation protection. Results of Mojiri et al, showed personnel's knowledge wasn't proper and their awareness about workplace was acceptable [2]. Our findings concerning personnel's knowledge showed significant difference for working region ($p=0.0$) and types of hospital ($p=0.004$).

Conclusion

Our finding showed that the level of KAP regarding radiation protection among operating room personnel was inadequate. They need to pay attention to radiation protection and it's principles in the operating room. In this regard, holding courses on radiation protection and an elaborate educational program might be useful.



A good example for the Study's Limitation

132 The present study has some limitations. The sample size is small. Since vital capacity
133 and forced expiratory volume in one second were not measured, the subjects may not have
134 normal pulmonary function. The procedure used to assess PEF is effort-dependent, and
135 requires full cooperation of the participant; therefore, screening with the Mini-Mental Status
136 Examination could have eliminated cognitively impaired participants. Only female subjects
137 participated, so the influence of gender was not observed. Finally, a cross-sectional design
138 might not allow for cause-effect inferences. A longitudinal study would be needed to define
139 whether the production of PEF is associated with individual and combined abdominal muscle
140 thickness.



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جلسه هشتم

اصول رفرنس نویسی، تقدیر تشکر، اصول ادبی نگارش



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References

Always use the most **3R** references

most **R**elevant

most **R**eliable

most **R**ecent

Always use ENDNOTE to enter references



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Acknowledgment

All people and organizations who help to run the present study should be acknowledged in this section



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Editing Principles

Use same fonts with same size through the manuscript

Use 20 to 24 lines per page

Use a 2.5 cm margin from the edge

Avoid long sentences

Avoid too many short paragraphs

Use Punctuation to enhance phrasing

Ask a Native English speaker to edit the final version of your manuscript

How to write a scientific paper

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18-07-96

- A scientific experiment is not complete until the results have been **published** and understood.
- A scientific paper is a written and published report describing *original research results*.

What is Scientific Writing

- The purpose of scientific writing is to communicate new scientific findings
- Thus it has to be clear, simple and well ordered communication to transmit new scientific findings
- Scientific writing must use proper English which gives the sense in the fewest short words

Origins of Scientific Writing

- Knowledge is lost without written records
- Cave paintings and inscriptions were the first attempts to leave records
- About 2000 BC, Papyrus paper was used as a medium of communication
- In 190 BC, parchment made from animal skin came into use
- In 105 AD, the Chinese invented paper
- Knowledge could not be widely circulated with no effective duplication
- In 1100 AD, the Chinese invented movable type
- In 1455 AD, Gutenberg printed his 42-line Bible from movable type on a printing press
- By the year 1500 thousands of copies of hundreds of books (called "incunabula") were printed
- In 1665, the first scientific journals were published

IMRAD Story

(Introduction, Methods, Results and Discussion)

- Early journals published **descriptive** papers (still used in case reports, geological surveys etc..)
- By the second half of the 19th century, **reproducibility of experiments** became a fundamental principle of the philosophy of science.
- The **methods section** became all important since Louis Pasteur confirmed the germ theory of disease
- IMRAD organization of a scientific paper started to develop
- IMRAD format slowly progressed in the latter half of the 19th century

IMRAD Format

- **I** = Introduction, what question (problem) was studied
- **M** = Methods, how was the problem studied
- **R** = Results, what are the findings
- **A** = and
- **D** = Discussion, what do these findings mean

Organization of a scientific paper

- The most common is the IMRAD
- If a number of methods were used to achieve directly related results:
 $M + R = \text{Experimental section}$
- The results are so complex that they need to be immediately discussed:
 $R + D = \text{Results and Discussion section}$

IMRAD: Introduction, Methods, Results, and Discussion

Title

Author information

Acknowledgments

Abstract

References (what, how many, self-citation, journal self-citation; in-press, in-print; forthcoming; theses, personal comm.,)

Tables

Figures

Legends

Word count

Keywords

Author contribution (what qualifies, ghost authors, honorary authors)

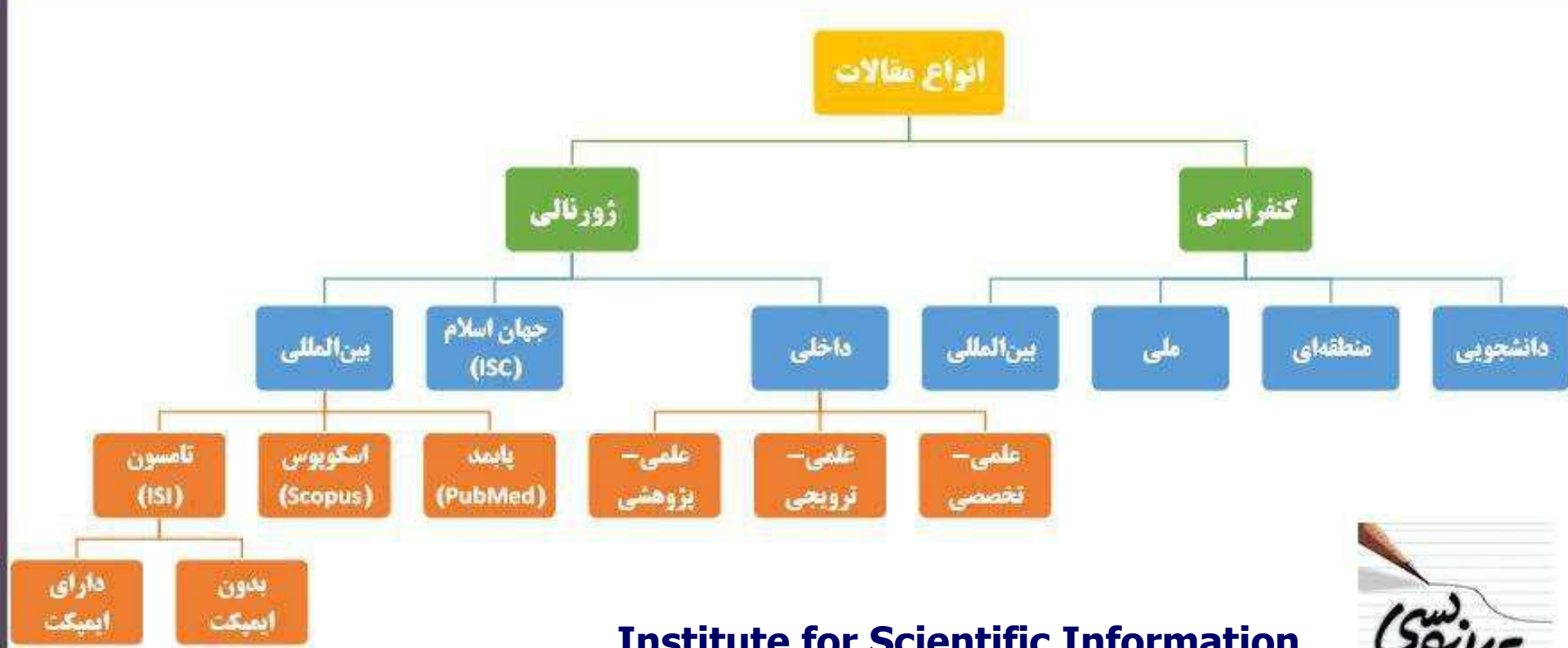
Conflict of interest (sponsors, agency information)

Trials registration, statements such as the CONSORT

Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication

<http://www.icmje.org/>

انواع مقالات



Institute for Scientific Information



- مقالات ژورنال

در هر مقاله ژورنال (Journal paper) یک یافته جدید علمی به طور کامل و شفاف بررسی می‌شود. در این نوع مقالات، مقایسه پژوهش جدید با پژوهش‌های پیشین انجام می‌گیرد و نتایج به صورت دقیق و مفصل توضیح داده می‌شوند.

انواع مقالات ژورنال

مقالات اصیل (Original Paper) یا (Regular Research)

مقالات مروری (Review Paper)

مقالات از نوع Letter

مقالات Short/ Rapid/ Brief Communication

تقسیم بندی انواع مقالات علمی

- مقالات مروری Review (tutorial) articles
- مقالات اصیل پژوهشی Original research articles
 - Randomized control trials
 - Case-control
 - گزارش موارد نادر و جالب : Case reports
 - گزارش های کوتاه پژوهشی : Brief research reports
- مقالات Short/ Rapid/ Brief Communication
- مقالات از نوع Letter

● مقالات اصیل

- نوآوری کافی
- نتایج مهم
- این دسته مقالات، مقاله‌هایی مفصل با شرح جزییات کافی می‌باشند و دارای ارزش علمی بالایی هستند.
- ممکن است به سرعت مورد استقبال جامعه علمی قرار بگیرند تحت عنوان Hot Papers در سایت مجلات مشخص می‌شوند. *Essential Science Indicators*.

What are Hot Papers?

Hot Papers are papers that receive citations soon after publication,
Relative to other papers of the same field and age.

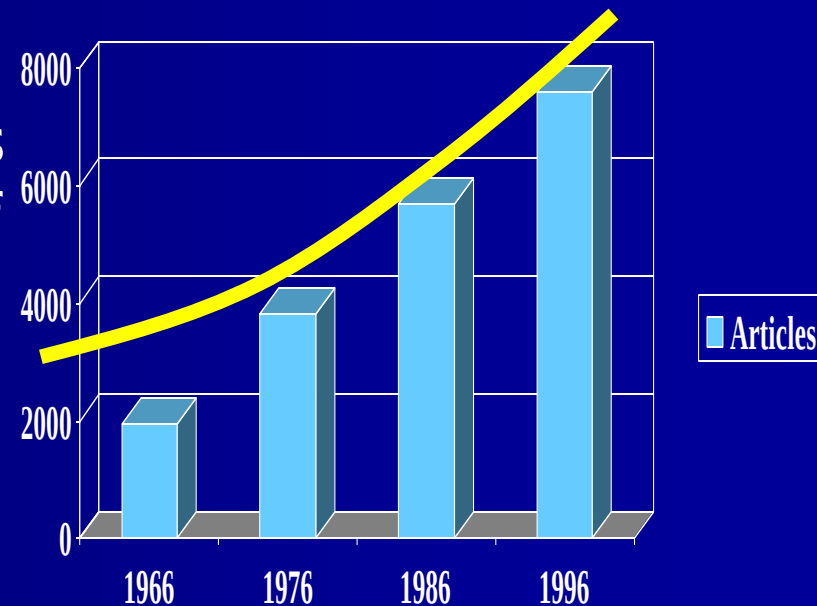
● مقالات مروری

- افراد علمی و صاحب‌نظر با بررسی تعداد زیادی از مقالات مرتبط، ضمن بین تارخچه و تشریح پژوهش‌هایی که بر روی آن موضوع انجام شده است، وضعیت فعلی و نیز پژوهش‌های آتی را بیان می‌کنند
- نویسندگان به ارایه نظرات و دستاوردهای پژوهشی خود پرداخته و افق‌های جدید و پیشرو را ارایه می‌کنند.
- گاهی اوقات نیز مجله از پژوهشگران برجسته دعوت می‌کند که در یک موضوع به روز پژوهشی، مقاله مروری بنویسند که اصطلاحاً invited review گفته می‌شود

Increasing Knowledge

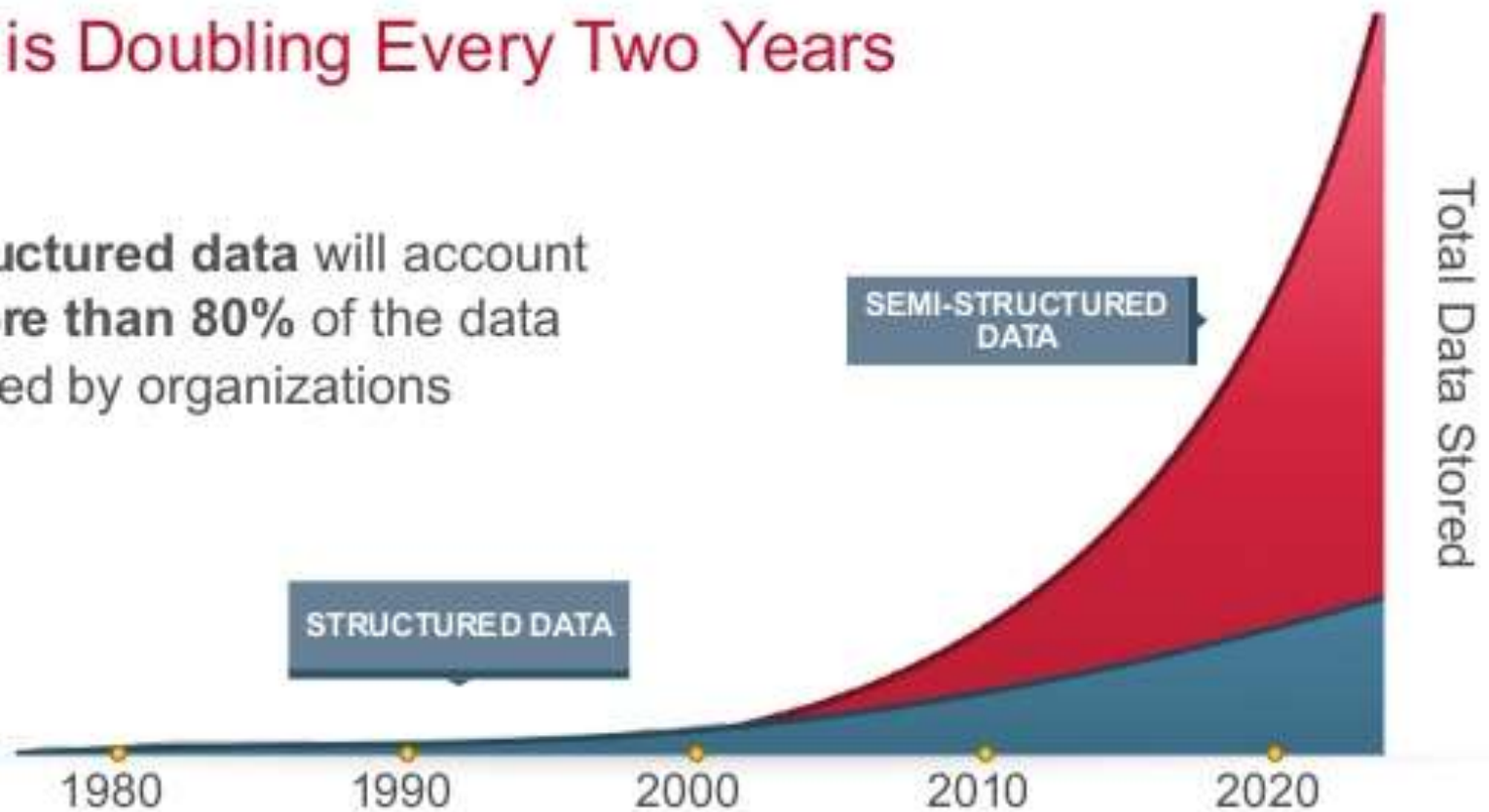
Until 1900 human knowledge doubled approximately every century. By the end of World War II knowledge was doubling every 25 years. Today things are not as simple as different types of knowledge have different rates of growth. . . . But on average human knowledge is doubling every 13 months.” And that rate will increase exponentially. IBM theorizes it could someday become every 12 hours.

Number of articles on Hypertension cited in Medline by Year



Data is Doubling Every Two Years

Unstructured data will account for **more than 80%** of the data collected by organizations



Source: Human-Computer Interaction & Knowledge Discovery in Complex, Unstructured, Big Data

© 2018 MapR Technologies

MAPR 4

Daily

- **46 RCTs**
- **1000 Medline New articles**
- **6,000 biomedical articles**

Annually

- **3 million articles**
- **30,000 journals**

Too much information, too little time

- There is simply **too much information** around for people to keep up to date.
- On top of this, high quality information is often **not easy to find**.

- A '**review**' is the generic term for any attempt to **synthesis** the results and **conclusions** of two or more publications on a given topic.

Most research published in medical
journals is

too poorly done

or

insufficiently relevant

to be clinically useful

Review paper

- Narrative review
- Systematic review
- Meta analysis

Narrative review

مقاله نقلی

- مقاله مروری معمولی که یک حوزه خاص را انتخاب و در آن حوزه کلیه اطلاعات را جمع می کند. یک سوال خاص را پاسخ نمی دهد
- مثال : گیاهان دارویی و لاغری
- در پایان به شما می گوید در این حوزه چه اطلاعاتی موجود است

Systematic review

- یک سوال خاص را پاسخ می دهد
- مثال تاثیر قهوه بر لاغری
- استراتژی جستجو ساختار مند و نظام مند است ، واژه های کلیدی مورد جستجو، پایگاههای جستجو و تمام مقالات موجود بررسی می شود.
- قید زمان دارد، مثال ۵ سال اخیر
- ستون خیمه این مقالات جدول است
- جمعیت؟ روش؟ نمونه؟ تست؟
- پیام مقالات علمی در یک موضوع خاص را خلاصه می کند

Table III Vaccine Trials in Renal Cell Carcinoma

Diagnosis	Trial stage	Number of pts	Study design	Vaccine	Adjuvant	Number of immunizations	Immune response	Clinical outcome	References
Adjuvant	Phase III	379 (177 vaccine; 202 control)	Multicenter, randomized	Autologous renal tumor cell	None	6	Not evaluated	5-yr PFS 77% vs 68% ($p = 0.0204$); 70-mo PFS 72% vs 59%	Jocham <i>et al.</i> (2004)
Advanced		27		Autologous or allogenic tumor cells-loaded DC	KLH	3	40% cellular response to KLH ^a ; 18% to OFA ^b	7% CR, 3% PR, 26% SD	Hold <i>et al.</i> (2002)

^aT-cell proliferation (only 11/27 pts evaluated).

^bT-cell proliferation (only 6/27 pts evaluated).

KLH, keyhole limpet hemocyanin; PFS, progression-free survival; OFA, oncofetal antigen; PR, partial response; pts, patients; SD, stable disease; mo, months; yrs, years.

Table 1 Vaccine Trials in B-Cell Malignancies

Diagnosis	Trial stage	Number of pts	Study design	Vaccine	Adjuvant	Number of immunizations	Immune response	Clinical outcome	References
Indolent phase (Rai stage 0–IV) B-CLL	Phase I–II	18	3 vaccination schedules	Oxidized, autologous leukemic cells	None	12 or 4	7 cellular	5 PR; 6 SD	Spaner <i>et al.</i> (2005)
Stage III or IV follicular B-cell NHL	Pilot followed by phase I	35	10 pts with measurable disease (pilot); 25 pts in adjuvant setting	DC pulsed with Id-KLH	Syntex adjuvant formulation	4 DC-Id-KLH booster with Id-KLH + SAF	17/35 (48%) cellular; 9/35 (25%) anti-Id humoral (mainly IgM)	Of first 10 pts: 2 CR, 2 PR; of 25 adjuvant pts: 5 CR, 11 CRu ^a , 7 PR	Timmerman <i>et al.</i> (2002)
Stage III–IV follicular lymphoma	Phase I	20	Adjuvant vaccine therapy after clinical remission post chemotherapy	FL-Ig-KLH	GM-CSF	4	19/20 cellular; 15/20 anti-FL-Ig humoral	18/20 pts maintain CR (28–53 mo, median 42 mo); 8/11 pts were t(14;18) PCR positive before vaccination and turned negative after vaccination	Bendandi <i>et al.</i> (1999)
Stage III–IV follicular lymphoma	Phase I–II Retrospective analysis	136	Adjuvant vaccine therapy after clinical remission post chemotherapy	ID-KLH	86 chemical ^b ; 32 DC; 18 GM-CSF	Not shown	27/136 (20%) cellular; 48/136 (35%) humoral; 12/136 pts had both	PFS was greater in pts with humoral response (8.21 v 3.38 yrs; $p = .018$). PFS correlation to cellular response was not significant ($p = .312$)	Weng <i>et al.</i> (2004)

Meta analysis

- بعد از همگن سازی داده ها در یک موضوع خاص
آنالیز آماری انجام می دهد.
- به یک یافته آماری دقیق می رسد
- در یک مرور ساختارمند ممکن است متا آنالیز های
کوچک هم انجام شود.

A meta-analysis is research in which data from separate studies that address a similar research question are combined quantitatively and then analysed statistically.

A systematic review is a review article based on data from original research studies that have been selected in an objective and rigorous manner following a defined method.

مقالات از نوع Letter

- ارزش علمی مقاله‌های از نوع Letter از مقاله‌های اصیل کمتر است
- از نظر حداکثر تعداد کلمات به کار رفته در مقاله یا حداکثر تعداد صفحات، محدودیت دارند که به نوع مجله بستگی دارد (۳-۴ صفحه)
- یک حالت خاص، Letter to the Editor است که می‌تواند در یک صفحه نیز نوشته شود.
- معمولاً این مقالات دو حالت پذیرش (Accept) و یا رد (Reject) دارند و کمتر حالت اصلاح (Revise) به خود می‌گیرند.

● مقالات از نوع Short/ Rapid/ Brief Communication

- این دسته از مقالات مشابه Letter هستند و معمولاً توسط پژوهشگران برجسته نوشته می‌شوند
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- سرعت دآوری و چاپ در این دسته از مقالات بیشتر است
- در واقع در این مقالات، نتایج به صورت مختصر و مفید با تکیه بر نوآوری و اهمیت موضوع توضیح داده می‌شود.
- برخی از مجلات برای این دسته از مقالات محدودیت تعداد کلمات و یا تعداد صفحات دارند.



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دانشگاه علوم پزشکی و خدمات بهداشتی درمانی سمنان کارگاه دو روزه نحوه نگارش مقالات علمی انگلیسی

مدرسان (به ترتیب الفبا)
دکتر امیر هوشنگ بختیاری
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دکتر مجید میرمحمدخانی

روز دوم چهارشنبه ۱۹ مهر ۱۳۹۶



Hierarchy of Studies

(Levels of evidence)





Systematic Review; Step by step

Formulating review questions



Searching & selecting studies



Study quality assessment



Extracting data from studies



Data synthesis & Interpreting the findings



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All Results (6680)

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☒ All

☐ Review

☐ Protocol

☐ Other Reviews (63)

☐ Trials (6361)

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☐ Technology Assessments (31)

☐ Economic Evaluations (32)

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Issue [updated daily](#) throughout month

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Chest **physiotherapy** compared to no chest **physiotherapy** for cystic fibrosis

Louise Warnock and Alison Gates

Online Publication Date: December 2015



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The Center for Reviews & Dissemination 1994

www.york.ac.uk/inst/crd/index.html

JBI:Joanna Briggs Institute 1996

<http://www.joannabriggs.edu.au/>

Campbell collaboration 2000

www.campbellcollaboration.org



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policy: the third wave of the
evidence revolution

Mapping the evidence for child
welfare in low- and middle-
income countries

Request for proposals from web
development companies

Introduction to evidence
synthesis, systematic reviews
and meta-analysis



A new blog article by Howard White, CEO, asks why policy makers don't base more decisions on evidence. "Suppose you, or you child, were recommended to undergo an operation. Would your response be to say, "sure, go head and stick the knife in and see what happens." cebook.com... likely you would seek

Consultation with preliminary findings: In Bloomsbury, London, the Campbell Collaboration and UNICEF are hosting a free event about evidence mapping on Friday 10 November. Speakers from the International Rescue Committee (IRC) and UNICEF will tell about how their organizations use

Developers wanted for web-based evidence map and database platforms Evidence and gaps maps are an evidence synthesis product with a pictorial representation of the evidence. The map is populated by data from an underlying database. Campbell plans to publish maps in the Campbell Library. To achieve

Free workshop 12-13 October 2017, Newcastle University This workshop presents the principles, methods, analysis, and reporting standards that guide the process of conducting systematic reviews, evidence and gap maps and meta-analysis in social sciences. Participants will also work in



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جلسه اول

Systematic Review ساختار علمی مقالات



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- A **Systematic Review** is a review of a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant research, and to collect and analyze data from the studies that are included in the review.
-
- Statistical methods (*meta-analysis*) may or may not be used to analyze and summarize the results of the included studies.



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The value of a Systematic Review is depend on
If the most relevant studies included
If the good and reliable studies were chosen
If the data were analyzed and synthesized correctly
If the results are transferable





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Cochrane Handbook for Systematic Reviews of Interventions



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Methods

Methodological Expectations of Cochrane Intervention Reviews (MECIR)

Standards for the conduct and
reporting of new Cochrane
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protocols and the planning,
conduct and reporting of updates

Julian PT Higgins, Toby Lasserson,
Jackie Chandler, David Tovey and
Rachel Churchill

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Systematic Reviews

CRD's guidance for undertaking reviews in health care





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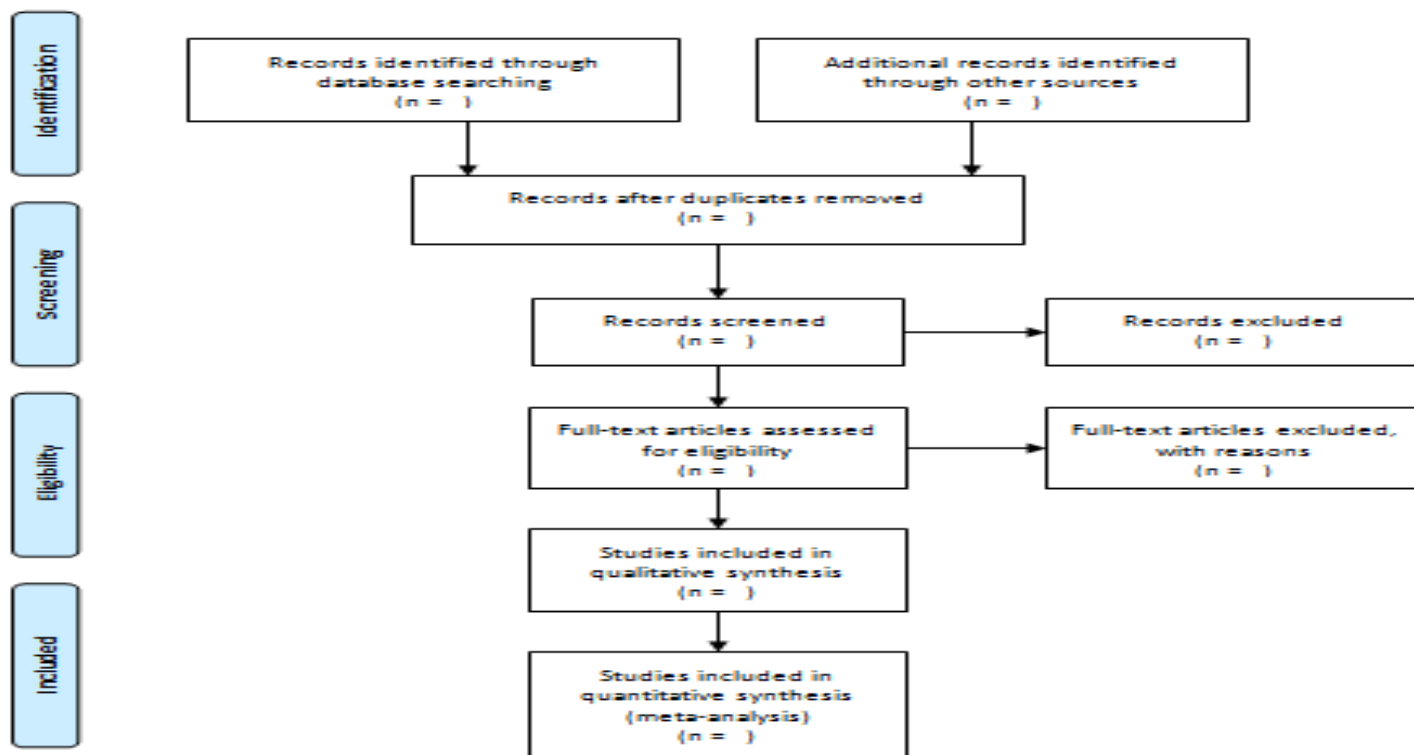
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Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)

<http://www.prisma-statement.org/documents/PRISMA-P%202015%20checklist.docx>



PRISMA 2009 Flow Diagram





Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	



Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	

Page 1 of 2

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage,	



		ideally with a flow diagram.	
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	



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جلسه دوم

Title & Abstract



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The PRISMA for Abstracts Checklist

TITLE	CHECKLIST ITEM	REPORTED ON PAGE #
1. Title:	Identify the report as a systematic review, meta-analysis, or both.	
BACKGROUND		
2. Objectives:	The research question including components such as participants, interventions, comparators, and outcomes.	
METHODS		
3. Eligibility criteria:	Study and report characteristics used as criteria for inclusion.	
4. Information sources:	Key databases searched and search dates.	
5. Risk of bias:	Methods of assessing risk of bias.	
RESULTS		
6. Included studies:	Number and type of included studies and participants and relevant characteristics of studies.	
7. Synthesis of results:	Results for main outcomes (benefits and harms), preferably indicating the number of studies and participants for each. If meta-analysis was done, include summary measures and confidence intervals.	
8. Description of the effect:	Direction of the effect (i.e. which group is favoured) and size of the effect in terms meaningful to clinicians and patients.	
DISCUSSION		
9. Strengths and Limitations of evidence:	Brief summary of strengths and limitations of evidence (e.g. inconsistency, imprecision, indirectness, or risk of bias, other supporting or conflicting evidence)	
10. Interpretation:	General interpretation of the results and important implications	
OTHER		
11. Funding:	Primary source of funding for the review.	
12. Registration:	Registration number and registry name.	



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Systematic review

Effects of acute use of pursed-lips breathing during exercise in patients with COPD: a systematic review and meta-analysis

Anamaria Fleig Mayer^{a,b,*}, Manuela Karloh^{a,b}, Karoliny dos Santos^{a,b},
Cintia Laura Pereira de Araujo^{a,b}, Aline Almeida Gulart^{a,b}

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^b Programa de Pós-Graduação em Fisioterapia, Centro de Ciências da Saúde e do Esporte (CEFID), Universidade do Estado de
Santa Catarina (UDESC), Florianópolis, Brazil

Abstract

Background Pursed-lips breathing (PLB) is a ventilatory strategy frequently adopted spontaneously by patients with chronic obstructive pulmonary disease (COPD) to relieve dyspnoea, and its practice is widely taught as a respiratory strategy to increase exercise tolerance.

Objective To investigate the effects of acute use of PLB in exercise performance, dyspnoea, ventilatory parameters and oxygen saturation during exercise in patients with COPD.

Data sources PEDro, EMBASE, MEDLINE via OVID, and EBSCO up to May 2016.

Study selection Crossover, randomized and quasi-randomized controlled trials that studied PLB as a ventilatory strategy for patients with COPD during exercise.

Data extraction and synthesis Data extraction included background characteristics of the research reports; participant characteristics; description of the analyzed variables and corresponding instruments; exercise protocol; exercise performance; outcomes and corresponding results; data for "responder" and "non-responder" outcomes.

Results Eight studies were selected. The meta-analysis demonstrated that the use of PLB during exercise reduces minute ventilation and respiratory rate compared to exercise without PLB. No statistically significant differences were found in the 6-minute walk test distance.

Limitations The sample characteristics, exercise protocols, and criteria for "responders" and "non-responders" differed among studies.

Conclusion PLB is effective in reducing minute ventilation and respiratory rate during exercise in patients with COPD. It is still unclear who responds to PLB and how these responders benefit from its use. Further studies with better methodological quality are necessary to understand the implications of its acute use on the functional capacity and symptoms of patients with COPD.

Systematic review registration number: PROSPERO CRD42015025903.

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Keywords: Breathing exercises; Pulmonary disease; Chronic obstructive; Exercise

Introduction

Exercise intolerance in chronic obstructive pulmonary disease (COPD) is related to airflow, gas exchange, and systemic limitations [1], with exertional dyspnoea being the most common reported symptom [1, 2]. Pursed-lips breathing (PLB) is a ventilatory strategy frequently adopted spontaneously by patients with COPD to relieve dyspnoea [2], and its practice is widely taught in respiratory physical therapy and pul-

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Research

Inspiratory muscle training improves respiratory muscle strength, functional capacity and quality of life in patients with chronic kidney disease: a systematic review

Ana Irene Carlos de Medeiros, Helen Kerlen Bastos Fuzari, Catarina Rattes, Daniella Cunha Brandão, Patrícia Érika de Melo Marinho

Physiotherapy Department, Universidade Federal de Pernambuco, Recife, Brazil

KEY WORDS

Chronic renal insufficiency
Haemodialysis
Breathing exercises
Respiratory muscle training
Physical therapy



ABSTRACT

Questions: Does inspiratory muscle training improve respiratory muscle strength, functional capacity, lung function and quality of life of patients with chronic kidney disease? Does inspiratory muscle training improve these outcomes more than breathing exercises? **Design:** Systematic review and meta-analysis of randomised trials. **Participants:** People with chronic kidney disease undergoing dialysis treatment. **Intervention:** Inspiratory muscle training versus sham or no inspiratory muscle training, and inspiratory muscle training versus breathing exercises. **Outcome measures:** The primary outcomes were: maximal inspiratory pressure, maximal expiratory pressure, and distance covered on the 6-minute walk test. The secondary outcomes were: forced vital capacity, forced expiratory volume in the first second (FEV₁), and quality of life. **Results:** The search identified four eligible studies. The sample consisted of 110 participants. The inspiratory muscle training used a Threshold[®] or PowerBreathe[®] device, with a load ranging from 30 to 60% of the maximal inspiratory pressure and lasting from 6 weeks to 6 months. The studies showed moderate to high risk of bias, and the quality of the evidence was rated low or very low, due to the studies' methodological limitations. The meta-analysis showed that inspiratory muscle training significantly improved maximal inspiratory pressure (MD 23 cmH₂O, 95% CI 16 to 29) and the 6-minute walk test distance (MD 80 m, 95% CI 41 to 119) when compared with controls. Significant benefits in lung function and quality of life were also identified. When compared to breathing exercises, significant benefits were identified in maximal expiratory pressure (MD 6 cmH₂O, 95% CI 2 to 10) and FEV₁ (MD 0.24 litres 95% CI 0.14 to 0.34), but not maximal inspiratory pressure or forced vital capacity. **Conclusion:** In patients with chronic renal failure on dialysis, inspiratory muscle training with a fixed load significantly improves respiratory muscle strength, functional capacity, lung function and quality of life. The evidence for these benefits may be influenced by some sources of bias. **Registration:** PROSPERO CRD42015029986. [de Medeiros AIC, Fuzari HKB, Rattes C, Brandão DC, de Melo Marinho PE (2017) Inspiratory muscle training improves respiratory muscle strength, functional capacity and quality of life in patients with chronic kidney disease: a systematic review. *Journal of Physiotherapy* 63: 76–83] © 2017 Australian Physiotherapy Association. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

ISI





Guidelines and Guidance

PRISMA for Abstracts: Reporting Systematic Reviews in Journal and Conference Abstracts

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Iain Chalmers⁴, Peter C. Gotzsche⁵, Toby Lasserson⁶, David Tovey⁶, for the PRISMA for Abstracts Group[†]

¹ Centre for Research in Evidence-Based Practice, Bond University, Gold Coast, Australia, ² Centre for Statistics in Medicine, University of Oxford, Oxford, United Kingdom, ³ National Center for Biotechnology Information, National Library of Medicine, Washington DC, United States of America, ⁴ James Lind Initiative, Oxford, United Kingdom, ⁵ Nordic Cochrane Centre, Copenhagen, Denmark, ⁶ Cochrane Editorial Unit, London, United Kingdom, ⁷ INSERM, Paris, France

Introduction

When readers screen the title of an article, and parts of its abstract, they try to determine whether or not to devote their scarce time to reading on. Some may be screening literature to identify the articles that are systematic reviews. Thus, the main function of an abstract of a systematic review should be to signal its systematic methodology. For most readers, the findings described in the abstract will also be key, either as the sole part of an article that will be read, or to determine whether reading the full text is required. Abstracts of systematic reviews are very important, as some readers cannot access the full paper, such that abstracts may be the only option for gleaming research results. This can be because of a pay wall, low Internet download capacity, or if the full article is only available in a language not understood by the reader. Readers in countries where English is not the primary language may have access to an abstract translated to their own language, but not to a translated full text. Conversely, a large proportion of systematic reviews are published by health technology agencies in non-English speaking countries [1], many of which provide only the abstract in English.

The predominance of the abstract in biomedical literature use is clear. Within queries to PubMed, most readers look only at titles; only half of searches result in any clicks on content [2]. The average number of titles clicked on to obtain the abstract or full text, even after retrieving several searches in a row, is less than five. Of those clicks, abstracts will be represented about 2.5 times more often than full texts of articles [2]. Even people going straight to a PDF or full text are likely to start, and perhaps end, with reading the abstract. The frequency of viewing full texts is somewhat higher among people searching the Cochrane Database of Systematic Reviews [3], but the same pattern is clear. After the title, the abstract is the most read part of a biomedical article.

Abstracts can be useful for screening by study type [4]; facilitating quick assessment of validity [4,5]; enabling efficient perusal of electronic search results [4,6]; clarifying to which patients and settings the results apply [4,5]; providing readers and

give more complete information, and facilitate the finding of information by the reader.

Despite the adoption of structured abstracts, studies of the quality of abstracts of clinical trials have demonstrated that improvement is needed [8,9], and a study of systematic review abstracts demonstrated that the direction of the effect or association could not be determined in one in four abstracts from the general and specialty medical literature [10]. The PRISMA Statement [11] gives some guidance for abstracts, closely linked to commonly used headings in structured abstracts. After observing that the quality of abstracts of systematic reviews is still poor [10], we decided to develop an extension to the PRISMA Statement to provide guidance on writing abstracts for systematic reviews. We also wanted to provide a checklist enabling the items suggested to fit into any set of headings mandated by a journal or conference submission.

Methods for Development of the Checklist

We established a steering committee (EMB, PPG, SH, DGA). In collaboration with the steering group of the PRISMA Statement [11], we used the Statement to inform our selection of potential items for the checklist of essential items that authors should consider when reporting the primary results of a systematic review in a journal or conference abstract. The committee generated a list of items from PRISMA and other sources of guidance and information on structured abstracts and abstract composition and reporting [7,11,12], which were found using a thorough search of the literature.

In preparation for a consensus meeting, we used a modified Delphi consensus survey method [13] to select and reduce the

Citation: Beller EM, Glasziou PP, Altman DG, Hopewell S, Bastian H, et al (2013) PRISMA for Abstracts: Reporting Systematic Reviews in Journal and Conference Abstracts. *PLoS Med* 10(4): e1001419. doi:10.1371/journal.pmed.1001419

Published: April 9, 2013

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Abstract

Provide a structured summary including:

- ✓ Background;
- ✓ Objectives;
- ✓ Data sources;
- ✓ Study eligibility criteria, participants, and interventions;
- ✓ Study appraisal and synthesis methods;
- ✓ Results;
- ✓ Conclusions and implications of key findings;
- ✓ Systematic review registration number.



ABSTRACT

Background

Chest physiotherapy is widely used in people with cystic fibrosis in order to clear mucus from the airways. This is an updated version of previously published reviews.

Objectives

To determine the effectiveness and acceptability of chest physiotherapy compared to no treatment or spontaneous cough alone to improve mucus clearance in cystic fibrosis.

Search methods

We searched the Cochrane Cystic Fibrosis and Genetic Disorders Group Trials Register which comprises references identified from comprehensive electronic database searches and handsearches of relevant journals and abstract books of conference proceedings.

Date of the most recent search of the Group's Cystic Fibrosis Trials Register: 02 June 2015.

Selection criteria

Randomised or quasi-randomised clinical studies in which a form of chest physiotherapy (airway clearance technique) were taken for consideration in people with cystic fibrosis compared with either no physiotherapy treatment or spontaneous cough alone.

Data collection and analysis

Both authors independently assessed study eligibility, extracted data and assessed the risk of bias in the included studies. There was heterogeneity in the published outcomes, with variable reporting which meant pooling of the data for meta-analysis was not possible.

Main results

The searches identified 157 studies, of which eight cross-over studies (data from 96 participants) met the inclusion criteria. There were differences between studies in the way that interventions were delivered, with several of the intervention groups combining more than one treatment modality. One included study looked at autogenic drainage, six considered conventional chest physiotherapy, three considered oscillating positive expiratory pressure, seven considered positive expiratory pressure and one considered high pressure positive expiratory pressure. Of the eight studies, six were single-treatment studies and in two, the treatment intervention was performed



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An example

Title: Antiphospholipid syndrome and recurrent miscarriage: A systematic review and meta-analysis.

Abstract

The aim of this study was to identify and analyze publications in recent years to better understand the diagnosis and its contribution to monitoring APS among women with recurrent miscarriage (RM). This systematic review and meta-analysis was conducted using the PubMed and Web of Knowledge databases, with articles published between 2010 and 2014, according to the PRISMA statement.



An example

Title: Antiphospholipid syndrome and recurrent miscarriage: A systematic review and meta-analysis.

Results:

Of the 85 identified studies, nine were selected. Most of the studies reported an association between recurrent miscarriage and specific antiphospholipid antibodies, as anticardiolipin antibodies (aCL), lupus anticoagulant (LA), anti- β 2-glycoprotein I antibodies (a β 2GPI) and antiphosphatidylserine (aPS), which showed a relationship with RM. The main result of the meta-analysis revealed association between antiphospholipid antibodies (aPLs) and/or APS compared to the patients with RM and APS cases compared to the patients with RM



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An example

Title: Antiphospholipid syndrome and recurrent miscarriage: A systematic review and meta-analysis.

Conclusion:

Systematic review and meta-analysis demonstrated a positive association between antiphospholipid antibodies and/or antiphospholipid syndrome in patients with recurrent miscarriage.



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جلسه سوم

نگارش مقدمه یا Introduction



- ✓ Rational of study
 - ✓ Describe the rationale for the review in the context of:
 - ✓ What is already known.
 - ✓ What are the both Pros and Cons
 - ✓ What are the contradictions on your main topic
- ✓ Objectives of study
 - ✓ Provide an explicit statement of questions being addressed with reference to PICOS



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What is the review question (PICOS)?

- Population
- Intervention(s)
- Comparison(s)
- Outcome(s)
- Study design



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Bosu WK, Aheto JMK, Zucchelli E, Reilly S. Prevalence, awareness, and associated risk factors of hypertension in older adults in Africa: a systematic review and meta-analysis protocol. Syst Rev. 2017 Oct 4;6(1):192.

Review question

The review questions are as follows:

1. What is the prevalence and trends in hypertension in adults aged 50 years and older living in Africa?
2. What are the factors associated with hypertension in older adults in Africa?
3. What is the level of awareness of high blood pressure among older adults in Africa?



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Lorscheitter J, Stein C, Plentz RDM. Methodological Quality of Randomized Clinical Trials of Respiratory Physiotherapy in Coronary Artery Bypass Grafting Patients in the Intensive Care Unit: a Systematic Review. *Braz J Cardiovasc Surg.* 2017 Jul-Aug;32(4):318-337.

It should be noted that no evidence can be observed on the methodological quality of RCT of physiotherapy intervention on CABG postoperative patients in the intensive care unit (ICU). Therefore, this research is needed since the fulfillment or not of the criteria for a correct development of this research design can influence the results. Also, complementarily, the dissemination of these data will stimulate further research to be developed with a superior methodological quality, showing the main points that should be better outlined and planned. It will then be possible to obtain greater benefits, as well as improved outcomes for critical patients in daily clinical practice. It should be noted that there is no evidence on the methodological quality of RCT of physiotherapy intervention on CABG postoperative patients in the Intensive Care Unit (ICU).



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Toth PP, Worthy G, Gandra SR, Sattar N, Bray S, Cheng LI, Bridges I, Worth GM, Dent R, Forbes CA, Deshpande S, Ross J, Kleijnen J, Stroes ESG. Systematic Review and Network Meta-Analysis on the Efficacy of Evolocumab and Other Therapies for the Management of Lipid Levels in Hyperlipidemia. J Am Heart Assoc. 2017 Oct 2;6(10).

We therefore conducted a systematic review and network meta-analysis to compare LDL-C reduction with evolocumab to other lipid-lowering therapies (including alirocumab) in patients receiving statin background therapy.



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جلسه چهارم

نگارش روش تحقیق در مطالعات Systematic Review



A: Protocol and registration

- ✓ Indicate if a review protocol exists, (e.g., Web address)
- ✓ Provide registration information including registration number

B: Eligibility criteria

- ✓ Specify study characteristics (e.g., PICOS, length of follow-up)
- ✓ Report characteristics (e.g., years considered, language, publication status)
- ✓ Giving rationale.

C: Information sources

- ✓ Describe all information sources (e.g., databases, contact with study authors)
- ✓ Date last searched.

D: Search

- ✓ Present electronic search strategy including limits used (e.g., repeated study).

E: Study selection

- ✓ State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).



F: Data collection process

- ✓ Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.

G: Data items

- ✓ List and define all variables for which data were sought

H: Summary measures

- ✓ State the principal summary measures

I: Synthesis of results

- ✓ Describe the methods of handling data and combining results of studies,

J: Risk of bias across studies

- ✓ Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).

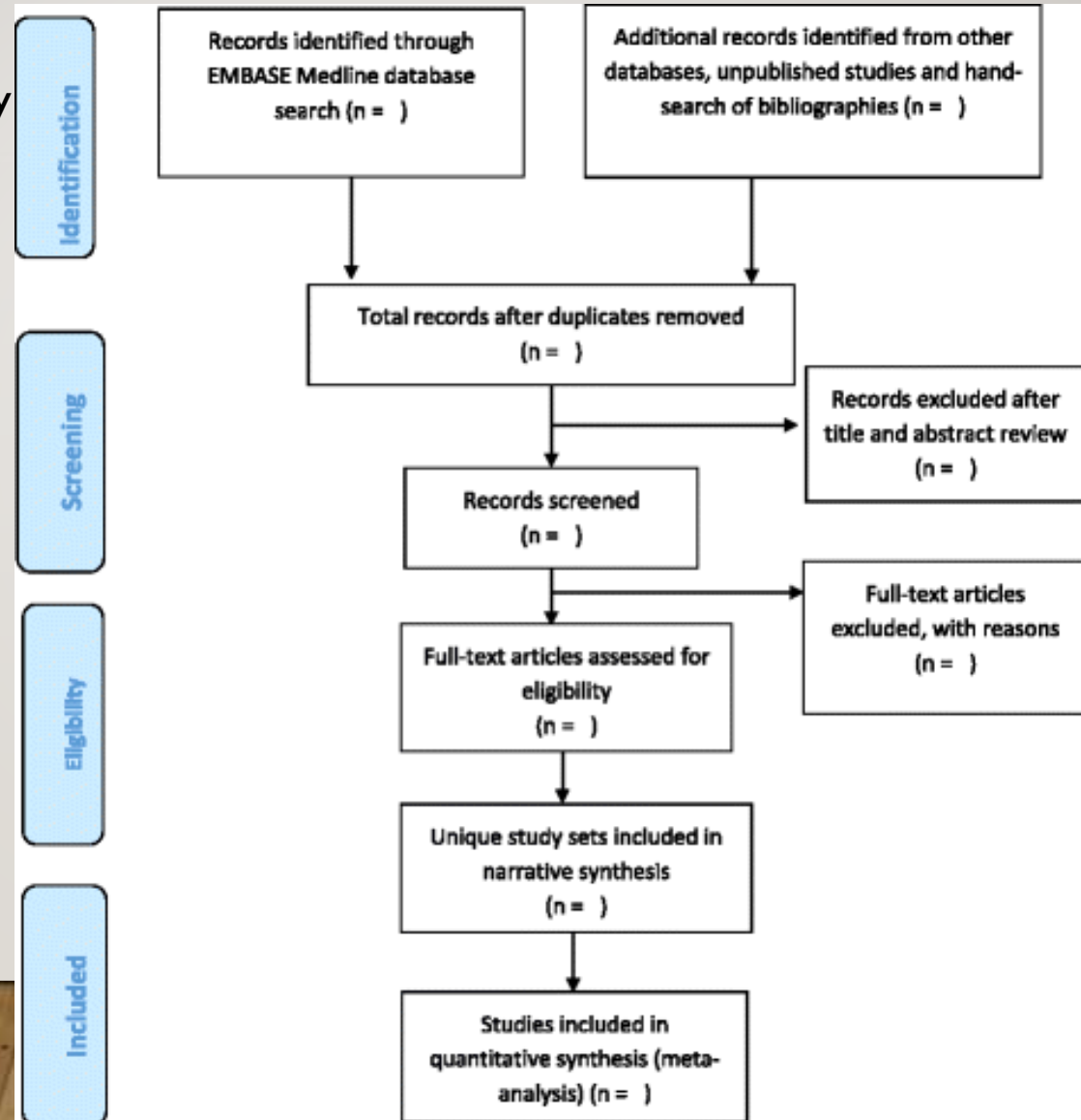
K: Additional analyses

- ✓ Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression).



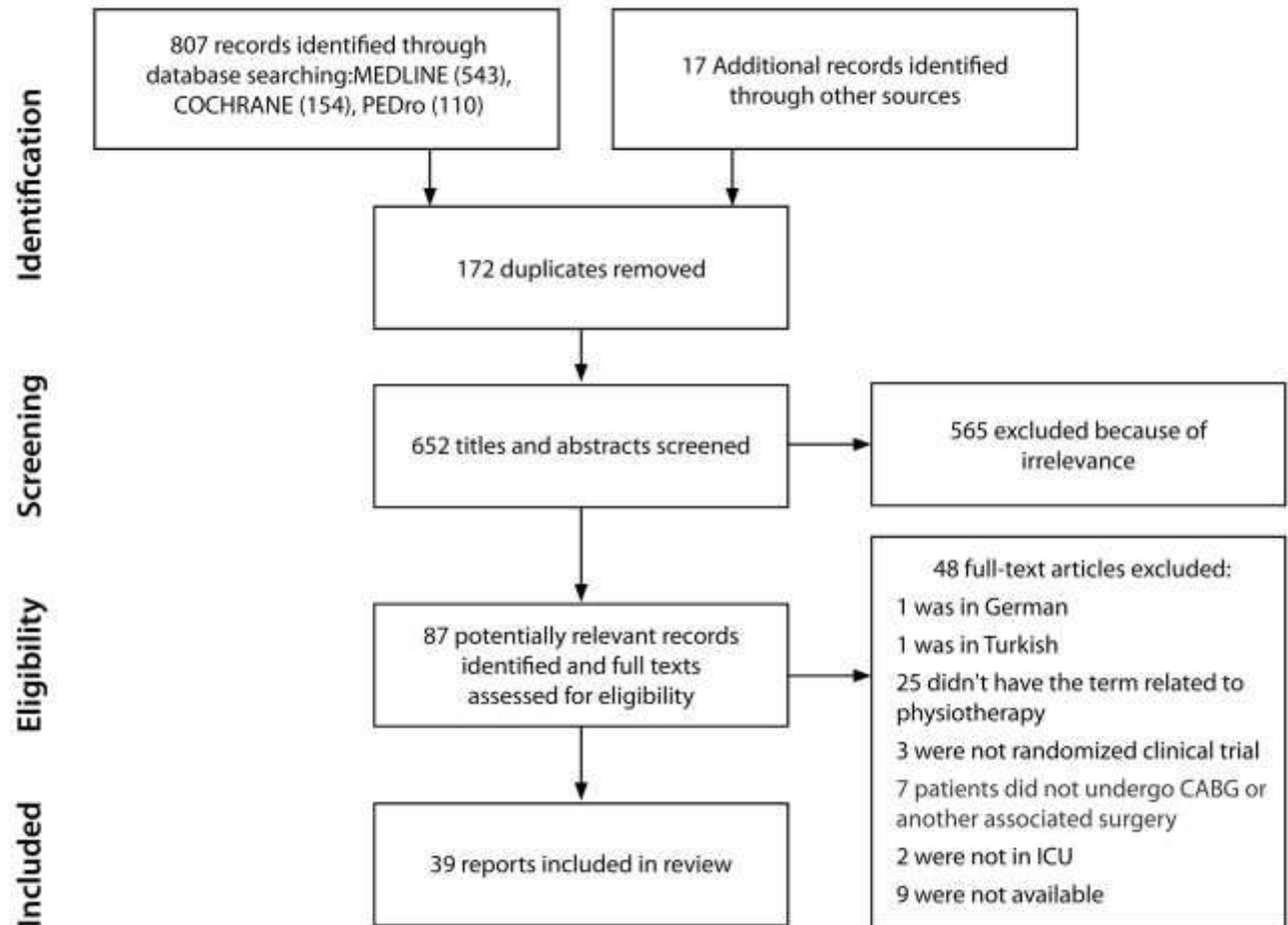
Important

Provide flow chart of study





Important
Provide flow chart of study





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جلسه ششم

ارائه گزارش **Meta-Analysis** و یافته ها در مطالعات **Systematic Review**



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جلسه هفتم

نگارش بحث یا Discussion



➤ Summary of Evidence

- ✓ Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).

➤ Limitations

- ✓ Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias)

➤ Conclusions

- ✓ Provide a general interpretation of the results in the context of other evidence, and implications for future research.



Sample

REVIEW ARTICLE

Braz J Cardiovasc Surg 2017;32(4):318-37

Methodological Quality of Randomized Clinical Trials of Respiratory Physiotherapy in Coronary Artery Bypass Grafting Patients in the Intensive Care Unit: a Systematic Review

Jaqueline Lorscheitter¹, PT, MSc; Cinara Stein^{1,2,3}, PT, MSc, PhD; Rodrigo Della M⁴ Plentz¹, PT, DSc

DOI: 10.21470/1678-9741-2017-0014

Abstract

Objective: To assess methodological quality of the randomized controlled trials of physiotherapy in patients undergoing coronary artery bypass grafting in the intensive care unit.

Methods: The studies published until May 2015, in MEDLINE, Cochrane and PEDro were included. The primary outcome extracted was proper filling of the Cochrane Collaboration's tool's items and the secondary was suitability to the requirements of the CONSORT Statement and its extension.

Results: From 807 studies identified, 39 were included. Most at

CONSORT items showed a better adequacy after the statement's publication. Studies with positive outcomes presented better methodological quality.

Conclusion: The methodological quality of the studies has been improving over the years. However, many aspects can still be better designed.

Keywords: Physical Therapy Modalities. Thoracic Surgery. Cardiac Surgical Procedures. Methodology. Systematic Review. Review Literature as Topic. Intensive Care Unit.

Abbreviations, acronyms & symbols

CABG	= Coronary artery bypass grafting
FEV1	= Forced expiratory volume in one second
ICU	= Intensive care unit
PaO ₂	= Partial pressure of oxygen
PEDro	= Physiotherapy evidence database
RCT	= Randomized clinical trials

INTRODUCTION

The large amount of publications in health care makes professionals have difficulty to stay up to date. Moreover, a great part of the available information does not come from studies with adequate methodological quality, what makes them of little clinical relevance. Incomplete or inadequate publication

of information on the study planning and driving affects the identification of possible methodological errors, also hampering the use of its findings by the interested parties, since they cannot critically assess its clinical applicability^{1,2}.

Even though randomized clinical trials (RCT) are gold standard for the assessment of health interventions, this type of study is also prone to bias whether due to researchers arbitrariness when selecting the sample and gauging the analyzed variables, or due to the difficulty of controlling other factors that may influence the clinical outcome. Bias or systematic error can be defined as any tendentiousness in the collection, analysis, interpretation, publication or revision of data, which induces conclusions that systematically tend to distance themselves from the truth^{3,4}.

In phase I of cardiac rehabilitation, physiotherapy has an increasingly important role in contributing to the patients return to their social and professional activities in the best possible

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³Fundação Universidade de Cardiologia (FUC), Porto Alegre, RS, Brazil.

This study was carried out at Universidade Federal de Ciências da Saúde de Porto Alegre, RS, Brazil.

No financial support.

No conflict of interest.

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Article received on January 16th, 2017.
Article accepted on May 11th, 2017.



Sample

SYSTEMATIC REVIEW AND META-ANALYSIS



Systematic Review and Network Meta-Analysis on the Efficacy of Evolocumab and Other Therapies for the Management of Lipid Levels in Hyperlipidemia

Peter P. Toth, MD, PhD; Gillian Worthy, MSc; Shrivanthi R. Gandra, PhD, MBA; Naveed Sattar, MD, PhD; Sarah Bray, PhD; Lung-I. Cheng, PhD; Ian Bridges, MSc; Gavin M. Worth, PhD; Ricardo Dent, MD; Carol A. Forbes, PhD; Sohan Deshpande, MSc, M-Tech; Janine Ross, MSc; Jos Kleijnen, MD, PhD; Erik S. G. Stroes, MD, PhD

Background—The proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors evolocumab and alirocumab substantially reduce low-density lipoprotein cholesterol (LDL-C) when added to statin therapy in patients who need additional LDL-C reduction.

Methods and Results—We conducted a systematic review and network meta-analysis of randomized trials of lipid-lowering therapies from database inception through August 2016 (45 058 records retrieved). We found 69 trials of lipid-lowering therapies that enrolled patients requiring further LDL-C reduction while on maximally tolerated medium- or high-intensity statin, of which 15 could be relevant for inclusion in LDL-C reduction networks with evolocumab, alirocumab, ezetimibe, and placebo as treatment arms. PCSK9 inhibitors significantly reduced LDL-C by 54% to 74% versus placebo and 26% to 46% versus ezetimibe. There were significant treatment differences for evolocumab 140 mg every 2 weeks at the mean of weeks 10 and 12 versus placebo (−74.1%; 95% credible interval −79.8% to −68.58%), alirocumab 75 mg (−20.03%; 95% credible interval −27.32% to −12.96%), and alirocumab 150 mg (−13.63%; 95% credible interval −22.43% to −5.33%) at ≥12 weeks. Treatment differences were similar in direction and magnitude for PCSK9 inhibitor monthly dosing. Adverse events were similar between PCSK9 inhibitors and control. Rates of adverse events were similar between PCSK9 inhibitors versus placebo or ezetimibe.

Conclusions—PCSK9 inhibitors added to medium- to high-intensity statin therapy significantly reduce LDL-C in patients requiring further LDL-C reduction. The network meta-analysis showed a significant treatment difference in LDL-C reduction for evolocumab versus alirocumab. (*J Am Heart Assoc.* 2017;6:e005367. DOI: 10.1161/JAHA.116.005367.)

Key Words: alirocumab • evidence-based medicine • evolocumab • ezetimibe • lipids • low-density lipoprotein cholesterol • meta-analysis • proprotein convertase subtilisin/kexin type 9 inhibitor • statin therapy

Lowering low-density lipoprotein cholesterol (LDL-C) levels with statins reduces the risk of atherosclerotic cardiovascular disease (CVD).^{1–6} The IMPROVE-IT trial⁷ substantiates that LDL-C reduction with nonstatin therapy further reduces risk of CVD, although the absolute reduction in cardiovascular events was small because of modest LDL-C

lowering with ezetimibe on top of a statin.⁸ There remains, however, a population of high-risk patients who have elevated LDL-C despite statin therapy and who have residual risk of cardiovascular events and mortality.⁹ As a result, there is an unmet need for new therapies to provide this high-risk population with incremental LDL-C reduction beyond that

From the Ciccone Center for the Prevention of Cardiovascular Disease, Johns Hopkins University and School of Medicine, Baltimore, MD (P.P.T.); CGH Medical Center, Sterling, IL (P.P.T.); Kleijnen Systematic Reviews Ltd, York, United Kingdom (G.W., C.A.F., S.D., J.R., J.K.); Department of Family Medicine, Maastricht University, Maastricht, The Netherlands (J.K.); Angen Inc, Thousand Oaks, CA (G.W., S.R.G., S.B., L.-I.C., I.B., G.M.W., R.D.); University of Glasgow, United Kingdom (N.S.); Faculty of Medicine, University of Amsterdam, The Netherlands (E.S.G.S.).

Accompanying Data S1, S2, Tables S1, S2, and Figures S1 through S7 are available at <http://jaha.ahajournals.org/content/6/10/e005367/DC1/embed/inline-supplementary-material-1.pdf>

Correspondence to: Peter P. Toth, MD, PhD, Department of Preventive Cardiology, CGH Medical Center, 101 E Miller Rd, Sterling, IL 61081. E-mail: peter.toth@cgmc.com

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جلسه هشتم

اصول رفرنس نویسی، تقدیر تشکر، اصول ادبی نگارش



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References

Always use the most **3R** references

most **R**elevant

most **R**eliable

most **R**ecent

Always use ENDNOTE to enter references



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Acknowledgment

All people and organizations who help to run the present study should be acknowledged in this section



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Editing Principles

Use same fonts with same size through the manuscript

Use 20 to 24 lines per page

Use a 2.5 cm margin from the edge

Avoid long sentences

Avoid too many short paragraphs

Use Punctuation to enhance phrasing

Ask a Native English speaker to edit the final version of your manuscript



اجزا و نکات مهم در نگارش یافته های

مرور ساختار یافته

دکتر مجید میرمحمدخانی

اپیدمیولوژیست

مهرماه ۱۳۹۶

دانشگاه علوم پزشکی سمنان



هفت جز اصلی یافته ها در مقالات مرور ساختاریافته

- مطالعات انتخابی
- مشخصات هر مطالعه
- خطر سوگرایی در هریک از مطالعات
- نتیجه هر یک از مطالعات
- نتایج یک کاسه شده
- خطر سوگرایی در نتایج یک کاسه شده
- نتایج تحلیل های اضافه تر

۱. مطالعات انتخابی

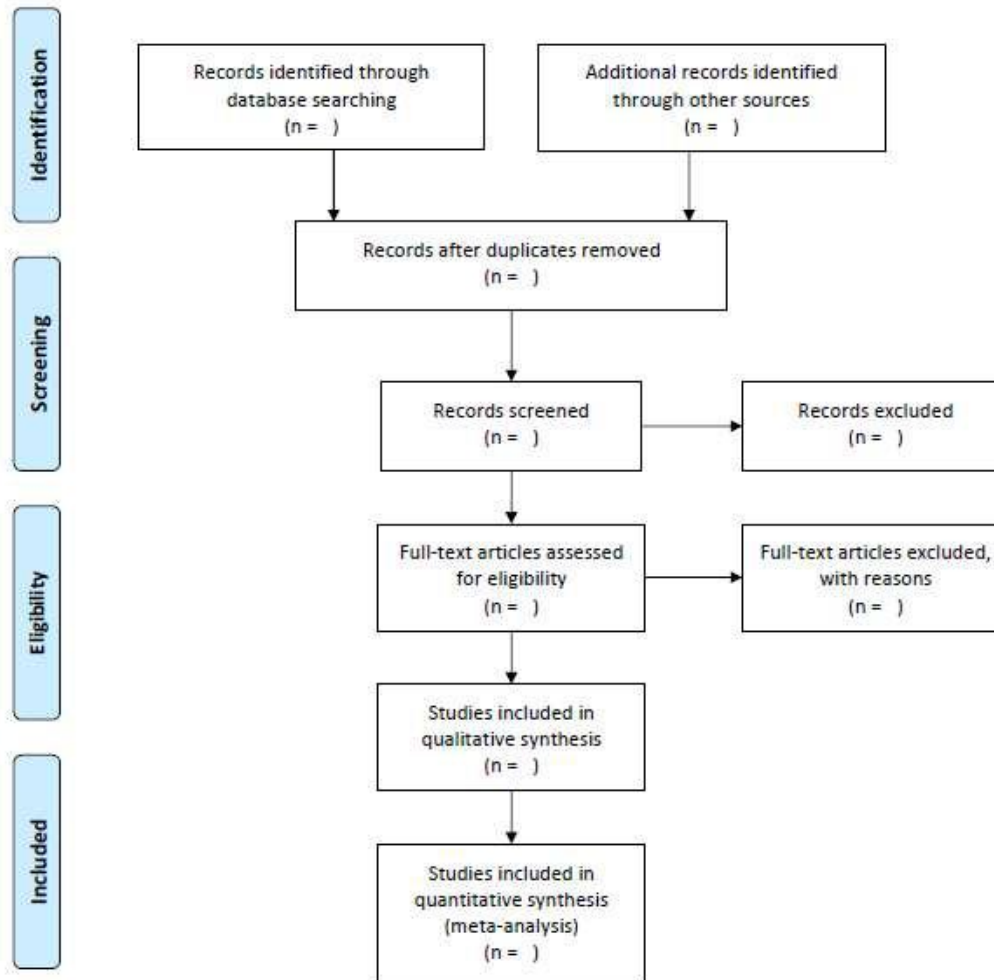
بایستی به این سوالات پاسخ دهد:

۱. کلا چند مقاله غربالگری شده است؟
۲. چند مقاله از نظر شرایط ورود به مطالعه ارزیابی شده است؟
۳. چند مقاله حائز شرایط برای ورود به مرور تشخیص داده شده است؟
۴. در هر مرحله چند مقاله و به چه دلیل از مطالعه خارج شده است؟

ایده ال این است که فلودیآگرام نیز تدوین شود.



PRISMA 2009 Flow Diagram



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. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

Statin use and mortality in cancer patients: Systematic review and meta-analysis of observational studies

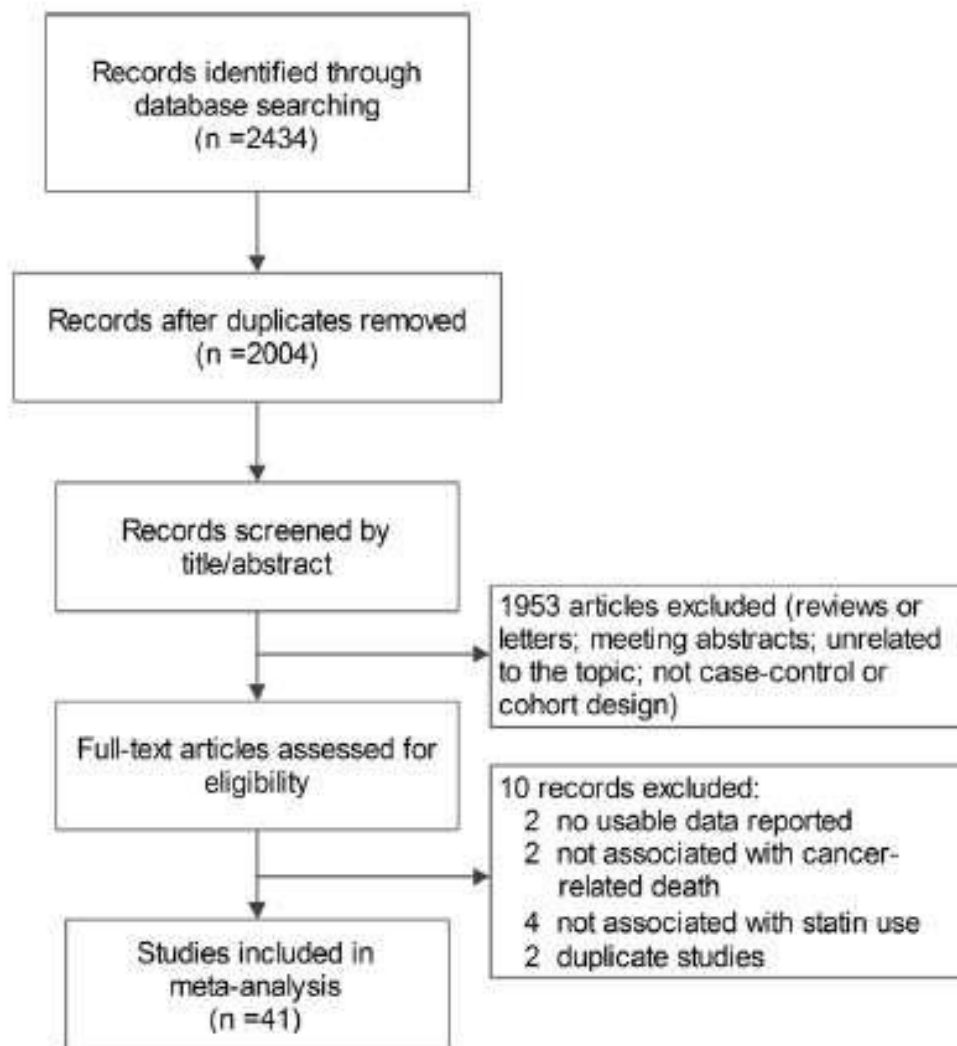


Fig. 1. Flow chart of the selection of publications included in the meta-analysis.

۲. مشخصات هر مطالعه

مشخصات مهم و اصلی هریک از مطالعاتی که از داده های آنها استفاده شده است بایستی ذکر گردد که می تواند شامل این موارد باشد:

مهمترین مشخصات بیلوگرافیک، محل انجام تحقیق، حجم نمونه، جمعیت مورد مطالعه، نوع مداخله (و یا مواجهه)، نوع مقایسه، پیامد مورد نظر، طراحی مطالعه و مدت زمان پیگیری

این اطلاعات از طریق جدول ارائه می شود.

Table 1
Characteristic of the included studies.

First author Year	Country	Follow-up period	Study design	Patient characteristics	Statin use	Cancer-specific mortality	All cause mortality	Covariate adjustment
Cardwell et al. (2015) [5]	UK	1998–2013 Average 5.7 years (Range 1–14)	Cohort	17,880 stage I–IV breast patients	Prediagnosis Non-user User Postdiagnosis Non-user User	HR 1.00 0.81 (0.71–0.93)	HR 1.00 0.78 (0.70–0.86)	Year of diagnosis, age at diagnosis, surgery within 6 months, radiotherapy within 6 months, chemotherapy within 6 months, hormone therapy use, comorbidities, other medication usage stage and socioeconomic deprivation in women with nonmissing values
Desai et al. (2015) [12]	USA	1992–2010 Average 11.5 years (Standard deviation = 3.7)	Cohort	7883 postmenopausal women with in situ, local, regional and distant-stage breast cancer	Prediagnosis No Yes	HR 1.00 0.59 (0.32–1.06)		Race, education, smoking, BMI, waist circumference, mammogram in the past 2 years, Gail 5-year risk, female relative with breast cancer, age at menarche, number of live births, breast biopsy, hysterectomy, hormone use, oral contraceptive, aspirin use and study component
Hoffmeister et al. (2015) [32]	Germany	2003–2009 Median 3.4 years (IQR 2.3–5.0)	Cohort	2697 Stage I–IV CRC patients older than 30 years	Postdiagnosis No statin use Any statin use	HR 1.00 1.11 (0.82–1.50)	HR 1.00 1.10 (0.85–1.41)	Age at diagnosis, sex, Union Internationale Contre le Cancer stage, location of CRC, surgery, neoadjuvant treatment, chemotherapy, radiotherapy, BMI, lifetime pack-years of active smoking, average lifetime physical activity, ever regular use of NSAIDs, ever use of hormone replacement therapy (women), previous large bowel endoscopy, diabetes, hyperlipidemia, myocardial infarction, stroke, heart failure, participation in general health check-ups, and for a time-dependent effect of chemotherapy
Shao et al. (2015) [31]	China	2004–2008 Median 4.2 years	Cohort	17,115 stage I, II, or III CRC patients who received curative surgery	Prediagnosis Non-user User	HR 1.00 0.77 (0.68–0.88)	HR 1.00 0.82 (0.74–0.92)	Age, sex, tumor stage, adjuvant therapy, and the propensity score were adjusted
Viers et al. (2015) [25]	USA	1995–2009 Median 7.8 years (IQR 5.3–11.2)	Cohort	2357 patients treated with radical or partial nephrectomy for pNx/0, M0 RCC	Postdiagnosis No Yes	HR 1.00 1.02 (0.74–1.39)	HR 1.00 0.84 (0.69–1.00)	Age at surgery, sex, race, type of surgery, Charlson comorbidity index, primary tumor classification, preoperative estimated glomerular filtration rate, symptoms, and year of surgery
Song et al. (2015) [34]	Korea	2007–2013 Median 38.6 months	Cohort	409 patients with de novo DLBCL who received R-CHOP therapy	Postdiagnosis Non-user User		HR 1.00 1.23 (0.89–1.72)	Not state
Yoon et al. (2015) [65]	USA	2007–2010	Cohort	2987 stage I–IV endometrial cancer patients aged 65 years or older who received a hysterectomy	Postdiagnosis Non-user User Non-user User		HR 1.00 0.92 (0.70–1.20) HR 1.00 0.92 (0.65–1.29)	Follow-up time, age, race, neighborhood income, cancer stage, tumor grade, hysterectomy type, chemotherapy, radiation, impaired glucose tolerance, obesity, dyslipidemia and diabetes
Caon et al. (2014) [17]	Canada	2000–2007 Median 8.4 years	Cohort	3851 prostate cancer patients treated with external beam radiation therapy ± androgen deprivation therapy	Postdiagnosis No Yes	HR 1.00 0.769 (0.548–1.08)		Age, acetylsalicylic acid, year of treatment, radiation dose, androgen deprivation therapy, initial pretreatment PSA, T-stage, Charlson index, Gleason score
Cardwell et al. (2014) [26]	UK	1998–2012 Mean 5 years (Range 1–14)	Cohort	7657 stage I to III CRC patients	Prediagnosis Non-user User Postdiagnosis Non-user User	HR 1.00 0.85 (0.79–0.93)	HR 1.00 0.75 (0.66–0.84)	Year of diagnosis, age at diagnosis, sex, stage, surgery within 6 months, radiotherapy within 6 months, chemotherapy within 6 months, site, comorbidities, other medication use after diagnosis as time-varying covariates, grade, deprivation, and smoking before diagnosis in individuals without missing values

۳. خطر سوگرایی در هریک از مطالعات

چهار منبع سوگرایی اصلی که اعتبار درونی مطالعات را تهدید می کنند:

۱. سوگیری در گزینش نمونه ها (محدود سازی، انتساب تصادفی، پنهان سازی انتساب، همسان سازی، تطبیق فاکتورهای مخدوش کننده)

۲. سوگیری در نحوه مراقبت از نمونه ها (کورسازی، نحوه اندازه گیری در بازوهای مطالعه، سوگرایی یادآوری)

۳. سوگیری در ریزش نمونه ها (گمشدگی داده ها)

۴. سوگیری در تشخیص نتیجه (سوگیری در اندازه گیری متغیر وابسته، تعریف مورد)

ابزارهایی وجود دارد که مقدار سوگرایی را برای هر مطالعه کمی می کند.

نظیر: چک لیست نه مقیاسی کاکرن و ابزاری موسوم به گرید

۴. نتیجه هر یک از مطالعات

- به تفکیک هر مطالعه برای هریک از پیامدهای مورد نظر شامل منافع درمانی یا عوارض ناخواسته موارد ذیل قابل گزارش است:

۱. آماره های خلاصه شده مرکزی و پراکندگی برای هر یک از گروه های مداخله در مطالعه

۲. برآوردهای نقطه ای و فاصله ای از مقدار تاثیر مداخله درمانی مورد مطالعه (یا شاخص های نشان دهنده ارتباط و یا اختلاف) برای هر مطالعه

ایده ال این است که نمودار انباشت تدوین شود.

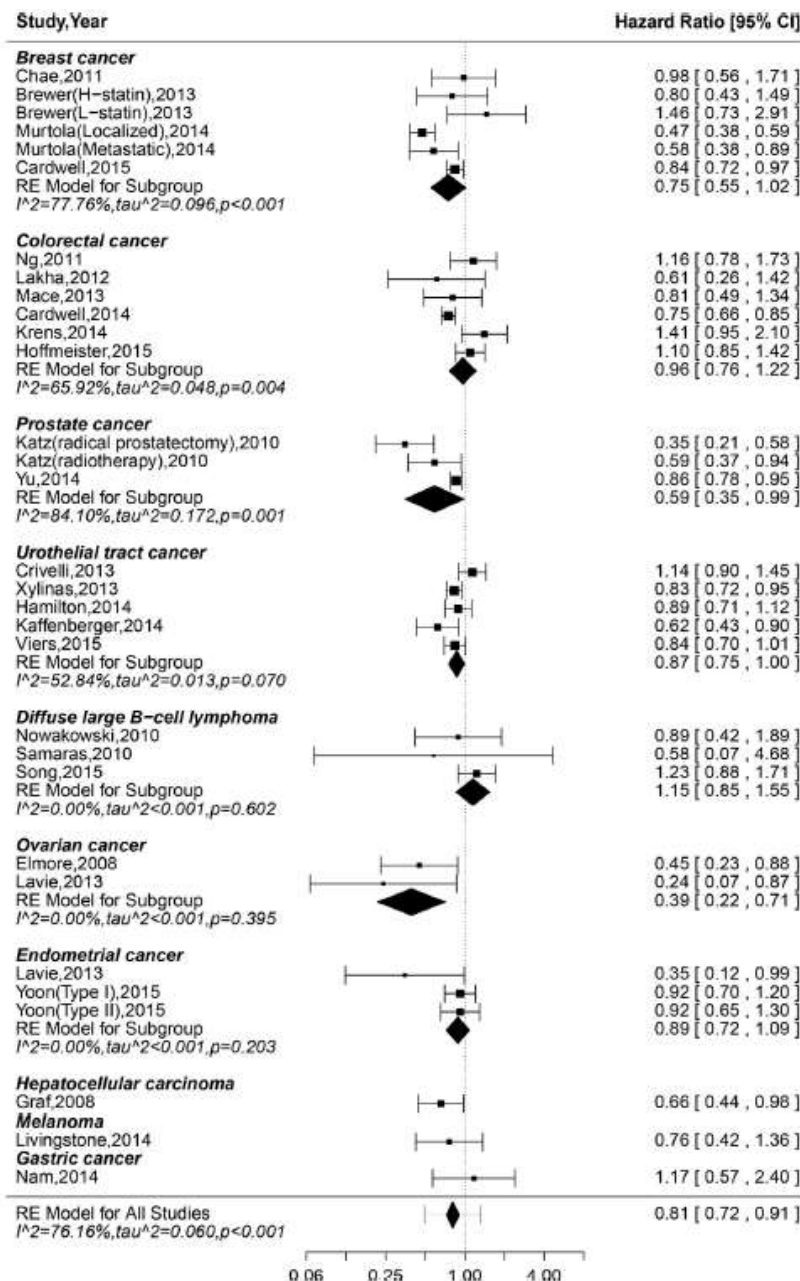


Fig. 2. Pooled analyses and subgroup analyses by cancer type for the association between post-diagnostic statin use and all-cause mortality. The squares and horizontal lines correspond to the study-specific hazard ratio and 95% CIs. The area of the square is proportional to the inverse of the sum of the between studies variance and the study-specific variance. The diamond represents the pooled multivariate hazard ratio and 95% CI. The dotted line of the diamond indicates the bounds of the 95% prediction interval.

۵. نتایج یک کاسه شده

بایستی:

- برای هر متاآنالیز انجام شده برآورد نقطه ای و فاصله ای مقدار یک کاسه شده تاثیر مداخله درمانی مورد مطالعه (یا شاخص های نشان دهنده ارتباط و یا اختلاف) گزارش شود.
- برای هر متاآنالیز لازم است شاخص (یا آزمون) همگنی گزارش شود.
 - سه شاخص (یا آزمون) مهم همگنی عبارتند از مجذور کای، مجذور تاو و مجذور آی
 - گاهی از نمودار برای نشان دادن همگنی استفاده می شود. نمودارهای مهم عبارتند از گالبریت و ال-آبه

Study, Year

Hazard Ratio [95% CI]

Breast cancer

Chae, 2011

0.98 [0.56 , 1.71]

Brewer(H-statin), 2013

0.80 [0.43 , 1.49]

Brewer(L-statin), 2013

1.46 [0.73 , 2.91]

Murtola(Localized), 2014

0.47 [0.38 , 0.59]

Murtola(Metastatic), 2014

0.58 [0.38 , 0.89]

Cardwell, 2015

0.84 [0.72 , 0.97]

RE Model for Subgroup

0.75 [0.55 , 1.02]

$I^2=77.76\%$, $\tau^2=0.096$, $p<0.001$

Ovarian cancer

Elmore, 2008

0.45 [0.23 , 0.88]

Lavie, 2013

0.24 [0.07 , 0.87]

RE Model for Subgroup

0.39 [0.22 , 0.71]

$I^2=0.00\%$, $\tau^2<0.001$, $p=0.395$

Hepatocellular carcinoma

Graf, 2008

0.66 [0.44 , 0.98]

Melanoma

Livingstone, 2014

0.76 [0.42 , 1.36]

Gastric cancer

Nam, 2014

1.17 [0.57 , 2.40]

RE Model for All Studies

0.81 [0.72 , 0.91]

$I^2=76.16\%$, $\tau^2=0.060$, $p<0.001$

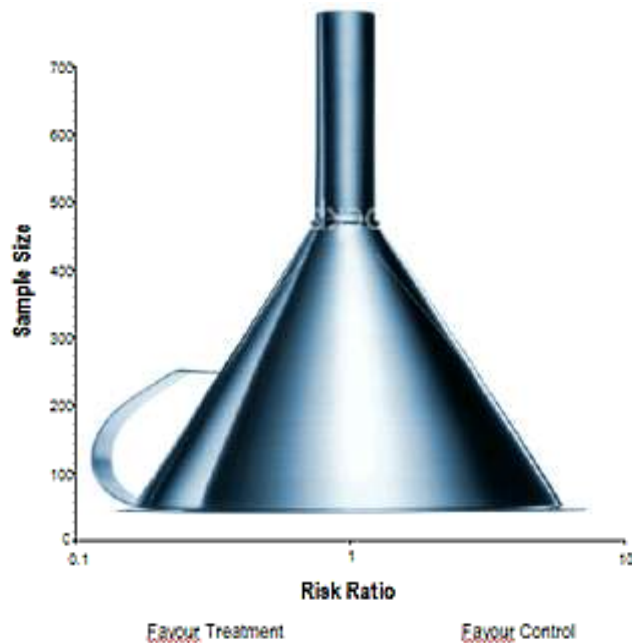


۶. خطر سوگرایی در نتایج یک کاسه شده

- در صورت وجود بایستی به کلیه سوگراییهایی که نتیجه یک کاسه شده را تحت تاثیر قرار می دهند اشاره نمود، نظیر سوگرایی انتشار، سوگرایی زبان و سوگرایی انتخاب پایگاه داده ای.
- سوگیری انتشار مهمترین سوگرایی در این خصوص می باشد.
 - برای بررسی و گزارش سوگرایی انتشار روشهای متعددی وجود دارد که مهمترین آنها استفاده از نمودار کیفی است.
 - روش های دیگر شامل آزمون و نمودار بگ، آزمون و نمودار ایگر و نمودار تریم اند فیل می باشد.

A Funnel Plot

“A funnel plot is used as a way to assess publication bias in meta-analysis.”



۷. نتایج تحلیل های اضافه تر

مهمترین این تحلیل ها شامل موارد ذیل می شوند:

✓ تحلیل حساسیت

✓ تحلیل زیرگروه ها

✓ متارگرسیون

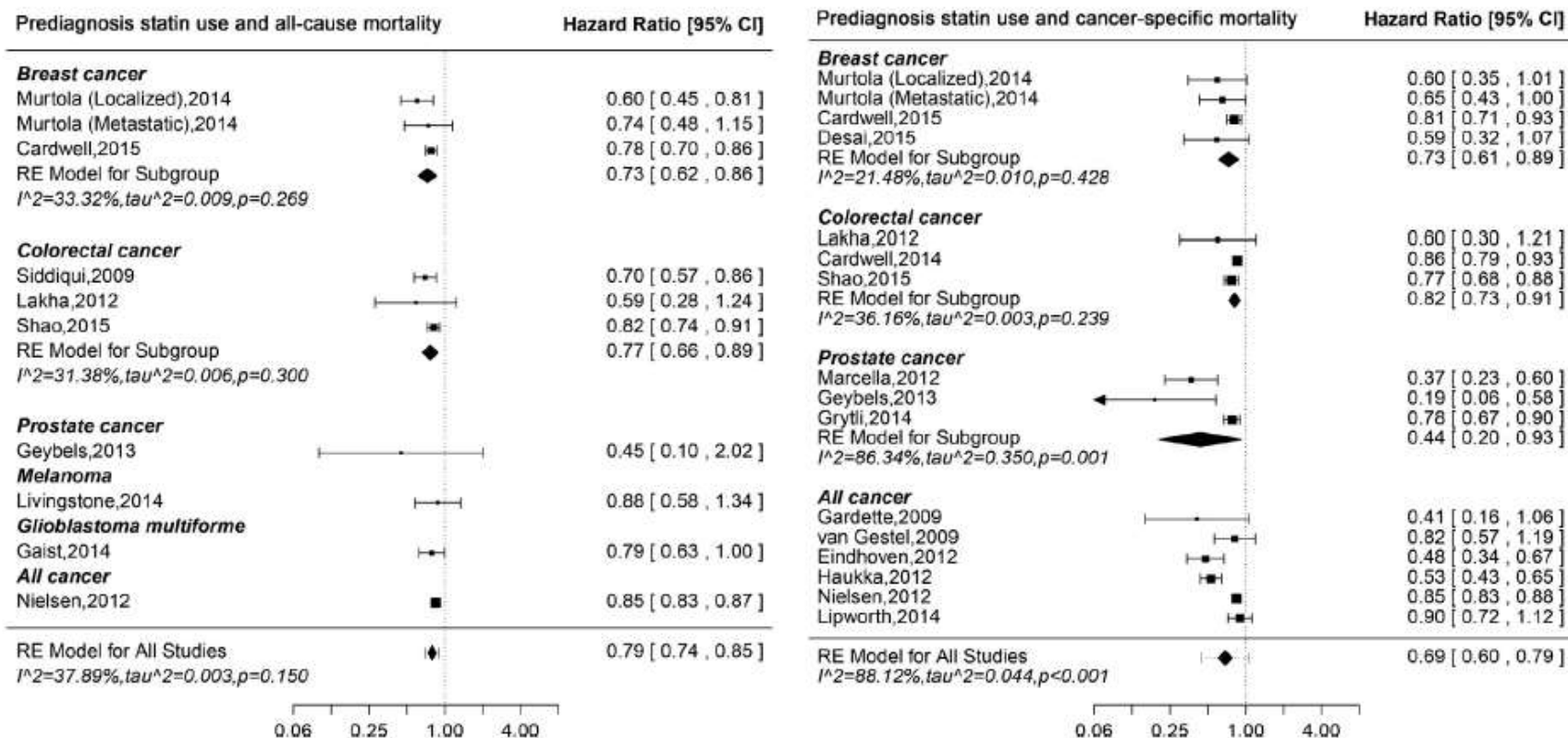


Fig. 4. Pooled analyses and subgroup analyses by cancer type for the association between prediagnostic statin use and all-cause and cancer-specific mortality. The squares and horizontal lines correspond to the study-specific hazard ratio and 95% CIs. The area of the square is proportional to the inverse of the sum of the between studies variance and the study-specific variance. The diamond represents the pooled multivariate hazard ratio and 95% CI. The dotted line of the diamond indicates the bounds of the 95% prediction interval.

**Science is facts. Just as houses
are made of stones, so is science
made of facts.**

**But a pile of stones is not a
house and a collection of facts
is not necessarily science.**

Jules Henri Poincare (1854–1912), French scientist, author. *Value of Science*, Dover (1958).

با تشکر از توجه شما

متاآنالیز

مفاهیم، کاربرد محاسبات

دکتر مجید میرمحمدخانی

اپیدمیولوژیست

اهمیت

- افزایش توان آماری
- افزایش دقت
- دو مورد فوق بعلت افزایش حجم نمونه حاصل می شوند.
- طرح و پاسخ به سوالات جدید
- ارزیابی بهتر و دقیق تر علت تفاوت میان مطالعات
- دو مورد فوق بعلت کارآیی متاآنالیز در جمع بندی بهتر مطالعات حاصل می شوند.

موارد نابجای استفاده از متاآنالیز

- ترکیب نتایج مقالات کاملا متفاوت از نظر هدف انجام در یک ظرف (ترکیب سیب و پرتقال)
- ترکیب نتایج مقالات کاملا متفاوت از نظر روش اجرا و آنالیز
- ترکیب نتایج مقالات کم کیفیت با بقیه مقالات و تاثیر کیفیت پایین آن مقالات بر نتیجه نهایی
- انجام متاآنالیزهای همراه با سوگیری (سوگیری انتشار، زبان، ...)

سه گام اصلی متاآنالیز

- استخراج یا محاسبه شاخص مشترک مبنا در تمام مطالعات اولیه
- ترکیب شاخص ها با استفاده از میانگین وزنی
- بررسی میزان ناهمگنی

مفهوم میانگین وزنی

- مبنای محاسبه برآیند نتایج مطالعات
- میانگین وزنی (WM):

$$WM = \frac{\sum T_i W_i}{\sum W_i}$$

- T_i یعنی میزان اثر مشاهده شده در مطالعه i ام
- W_i یعنی وزن مطالعه i ام

مفهوم ناهمگنی Heterogeneity

- ناهمگنی به میزان عدم یکنواختی نتایج مطالعات وارد شده در متاآنالیز گفته می شود.
- منشاء ناهمگنی می تواند بالینی یا متدولوژیک یا ترکیبی از این دو باشد.
- برآیند ناهمگنی های موجود در مطالعات را با ناهمگنی آماری یا Statistical heterogeneity نشان می دهند.
- اگر میزان ناهمگنی آماری زیاد باشد انجام متاآنالیز اشکال خواهد داشت.

بررسی ناهمگنی آماری

- آماره Q و آزمون کای دو (برای احتیاط در مطالعات کم تعداد بهتر است سطح معنی داری 0.1 در نظر گرفته شود) : $(\hat{y})$ برآورد حاصله از متاآنالیز و y_i برآورد هر مطالعه از پارامتر y در جامعه می باشد

$$Q = \sum W_i (y_i - \bar{y})^2$$

$$df = k - 1$$

- شاخص I^2 (شاخص Higgins که شاخص درصد ناهمگنی است و بالاتر از ۵۰٪ غیر قابل قبول است)

$$I^2 = 100 \left(\frac{Q - df}{Q} \right)$$

- روش گرافیکی : بررسی گرافیکی میزان همپوشانی فواصل اطمینان مطالعات
- متارگرسیون

نحوه شناسایی منشاء ناهمگنی

- تحلیل در زیر گروه ها (subgroup analysis)

- محدودیت حجم نمونه

- تعدد آزمون ها و افزایش خطای کلی مطالعه

- متارگرسیون (meta-regression)

✓ انتخاب متغیرهای احتمالی مسبب ناهمگنی بر اساس قضاوت و شناخت روی نقش بالینی یا متدولوژیکی آنها
صورت می گیرد:

✓ نظر افراد خبره

نحوه برخورد با ناهمگنی آماری

- بررسی مجدد مطالعات و اصلاح ایرادهای احتمالی
- صرف نظر کردن از متاآنالیز
- انجام تحلیل صرفاً در زیر گروه ها
- انجام متاآنالیز به روش رندوم افکت (تاثیر مشکل را می تواند کمتر کند)
- تغییر شاخص مبنا به منظور کمتر کردن احتمالی ناهمگنی
- متارگرسیون

مدل ثابت در برابر مدل تصادفی

□ در مدل ثابت: برای پارامتر مورد اندازه گیری در مطالعات اولیه مقدار حقیقی ثابتی فرض می شود .

■ پس برای تفاوت میان مطالعات یک منشاء در نظر گرفته می شود: تفاوت شانسی به علت نمونه گیری

□ اما مدل تصادفی تفاوت میان نتایج مطالعات دو منشاء دارند:

۱. تفاوت شانسی به علت نمونه گیری

۲. تغییرات تصادفی مقدار واقعی پارامتر مورد اندازه گیری

در مدل های تصادفی میزان تفاوت شاخص محاسبه شده از مقدار کلی برآورد به عنوان یک جزئی از وزن مطالعه در محاسبات وارد می شود.

مفهوم τ در مدل تصادفی

- در مدل تصادفی فرض می شود :

پارامتر اصلی از توزیع نرمال با میانگین ثابت y و واریانس τ^2 پیروی می کند.

وزن دهی در مدل های ثابت

- روش معکوس واریانس

- روش مانندل هنزل

- روش پتو

روش معکوس واریانس

Invers Variance Method

- آسان و پر کاربرد است.
- اگر واریانس y_i را با v_i نشان دهیم آنگاه خواهیم داشت:

$$w_i = \frac{1}{v_i}$$

وزن دهی در مدل های تصادفی

- در این روش هم واریانس y_i یعنی v_i و هم واریانس y یعنی τ^2 در محاسبه وزن (w_i^*) به شرح زیر مورد استفاده قرار می گیرد:

$$w_i^* = \frac{1}{\tau^2 + v_i}$$

- روش های متفاوتی برای محاسبه τ^2 وجود دارد. بر این اساس دوروش مهمتر برای وزن دهی در مدل های تصادفی عبارتند از:
- روش در سیمونیان و لیرد
- روش متارگرسیون

انجام یک متاآنالیز : نمودار-آزمون ها

- برای آشنایی با محاسبات ، آزمون ها و نمودار های اصلی یک متاآنالیز آنها را بر اساس یک مثال و در نرم افزار استاتا نشان می دهیم.
- توجه: در یک مقاله لازم نیست همه آزمون ها و نمودار ها باشد.

مثال

متاآنالیز ۲۲ مطالعه کارآزمایی بالینی در مورد تاثیر مصرف داروی استرپتوکیناز در کاهش مورتالیتی سکته قلبی

id	year	t_event	t_nevent	c_event	c_nevent
Fletcher	1959	1	11	4	7
Dewar	1963	4	17	7	14
1st European	1969	20	63	15	69
Heikinheimo	1971	22	197	17	190
Italian	1971	19	145	18	139
2rd European	1971	69	304	94	263
2rd Frankfurt	1973	13	89	29	75
1st Australian	1973	26	238	32	221
NHLBI SMIT	1974	7	46	3	51
Valere	1975	11	38	9	33
Frank	1975	6	49	6	47
UK Collaborative	1976	48	254	52	241
Klein	1976	4	10	1	8
Austrian	1977	37	315	65	311
Lasierra	1977	1	12	3	8
N German	1977	63	186	51	183
Witchitz	1977	5	27	5	21
1st Australian	1977	25	87	31	87
3rd European	1977	25	131	50	109
ISAM	1986	54	805	63	819
GISSI-1	1986	628	5232	758	5094
ISIS-2	1988	791	7801	1029	7566

محاسبه OR یا RR

- $\text{gen or} = ((a/b)/(c/d))$
- $\text{gen rr} = ((a/a+b)/(c/c+d))$

	D+	D-
E+	a	b
E-	c	d

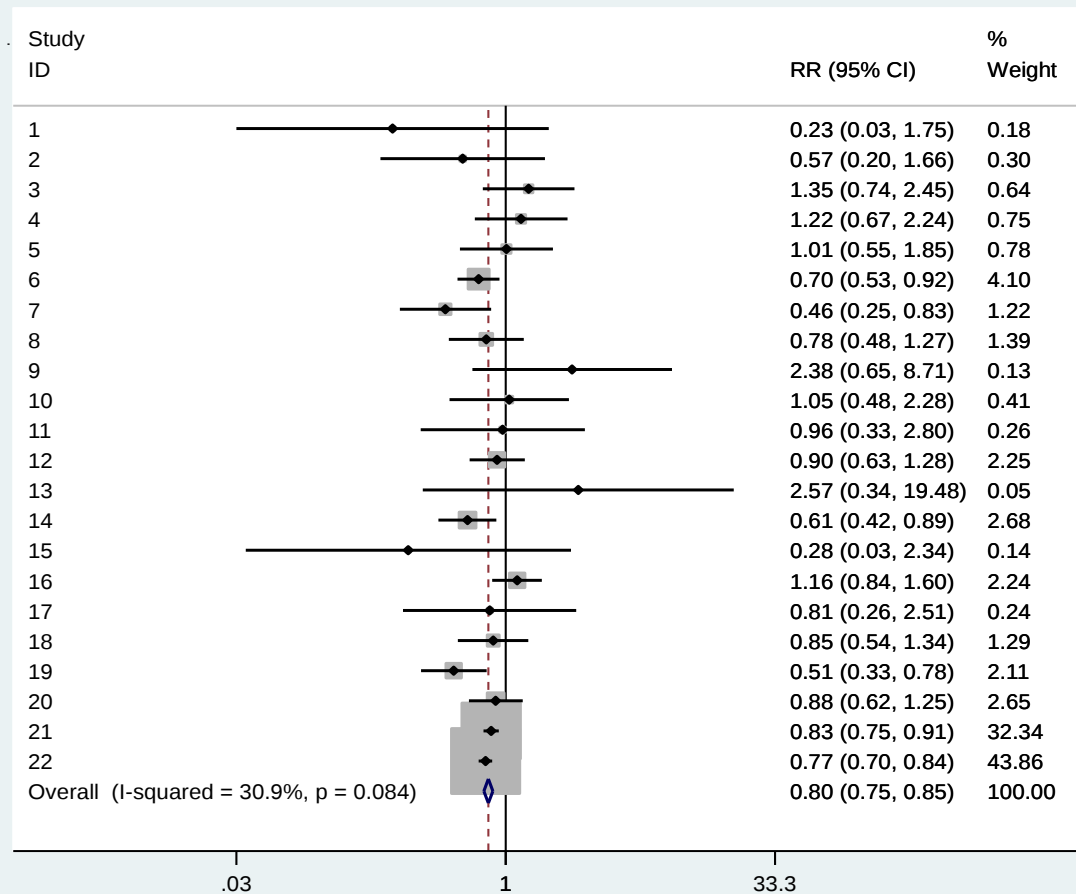
. metan a b c d

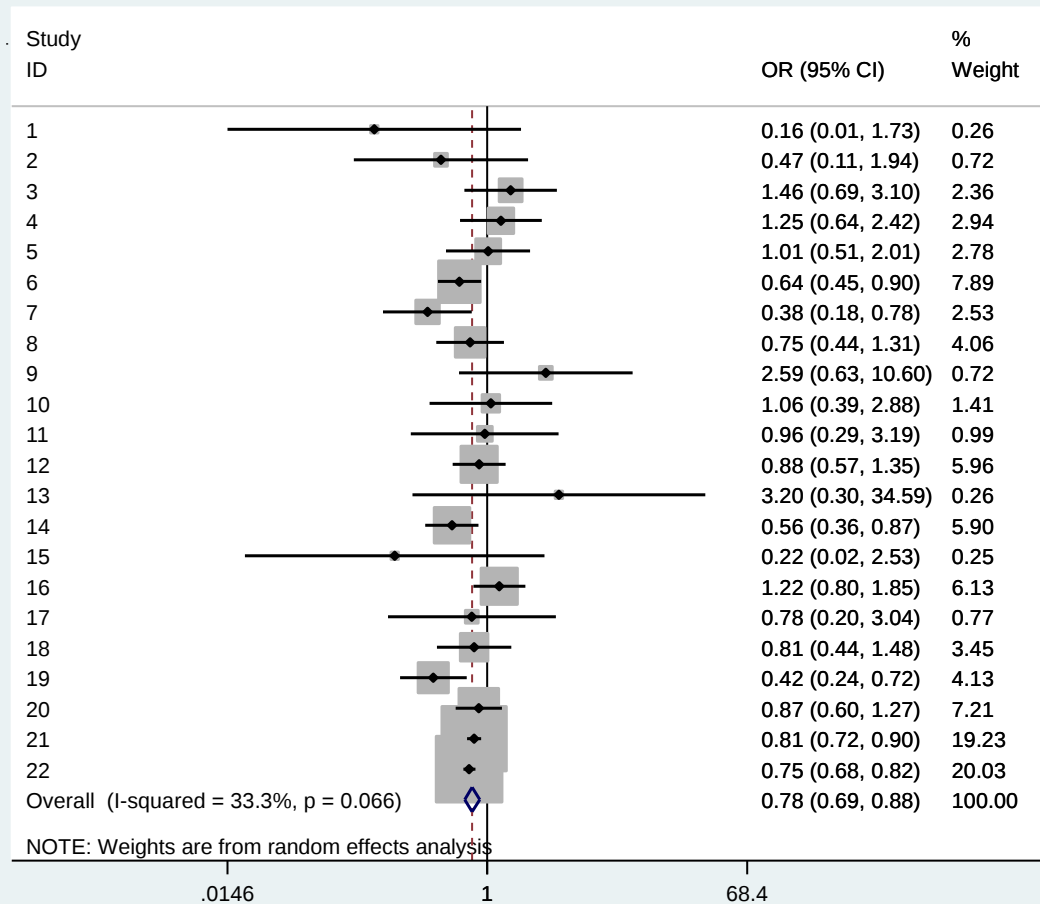
	Study	RR	[95% Conf. Interval]		% Weight
1		0.229	0.030	1.750	0.18
2		0.571	0.196	1.665	0.30
3		1.349	0.743	2.451	0.64
4		1.223	0.669	2.237	0.75
5		1.011	0.551	1.853	0.78
6		0.703	0.534	0.925	4.10
7		0.457	0.252	0.828	1.22
8		0.779	0.478	1.268	1.39
9		2.377	0.649	8.709	0.13
10		1.048	0.481	2.282	0.41
11		0.964	0.332	2.801	0.26
12		0.896	0.626	1.281	2.25
13		2.571	0.339	19.481	0.05
14		0.608	0.417	0.886	2.68
15		0.282	0.034	2.340	0.14
16		1.161	0.840	1.604	2.24
17		0.813	0.263	2.506	0.24
18		0.850	0.537	1.345	1.29
19		0.510	0.333	0.780	2.11
20		0.880	0.619	1.250	2.65
21		0.827	0.749	0.914	32.34
22		0.769	0.704	0.839	43.86
M-H pooled RR		0.799	0.755	0.845	100.00

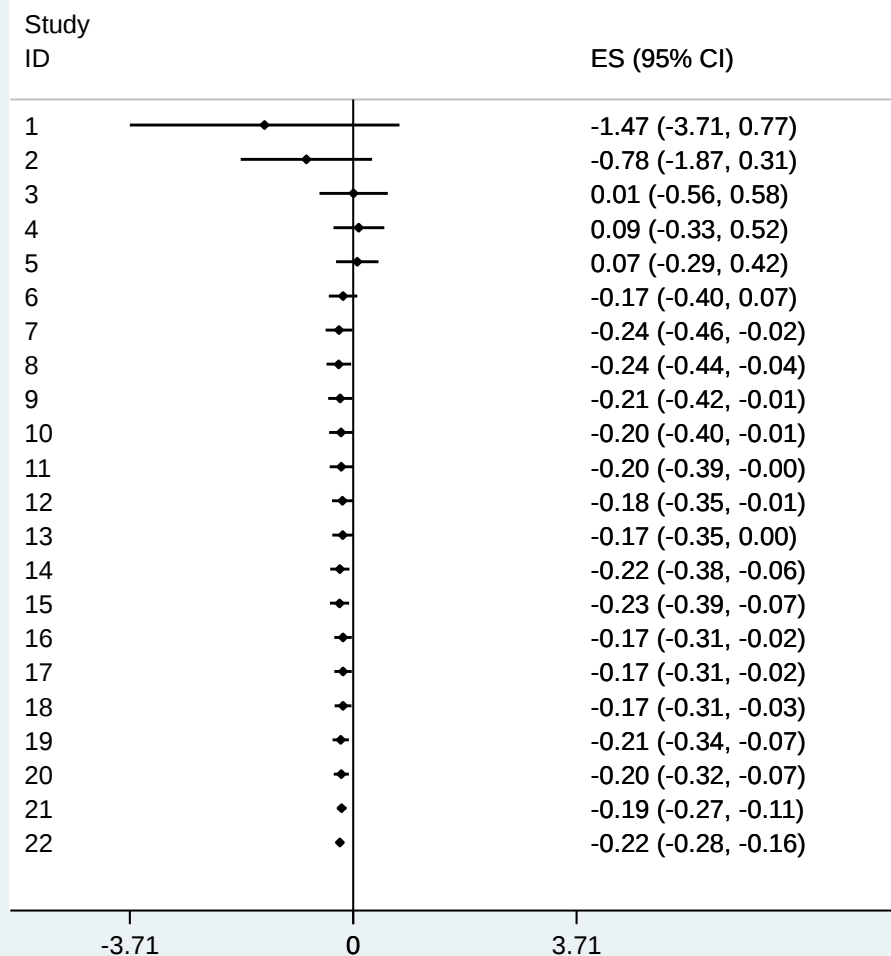
Heterogeneity chi-squared = 30.41 (d.f. = 21) p = 0.084

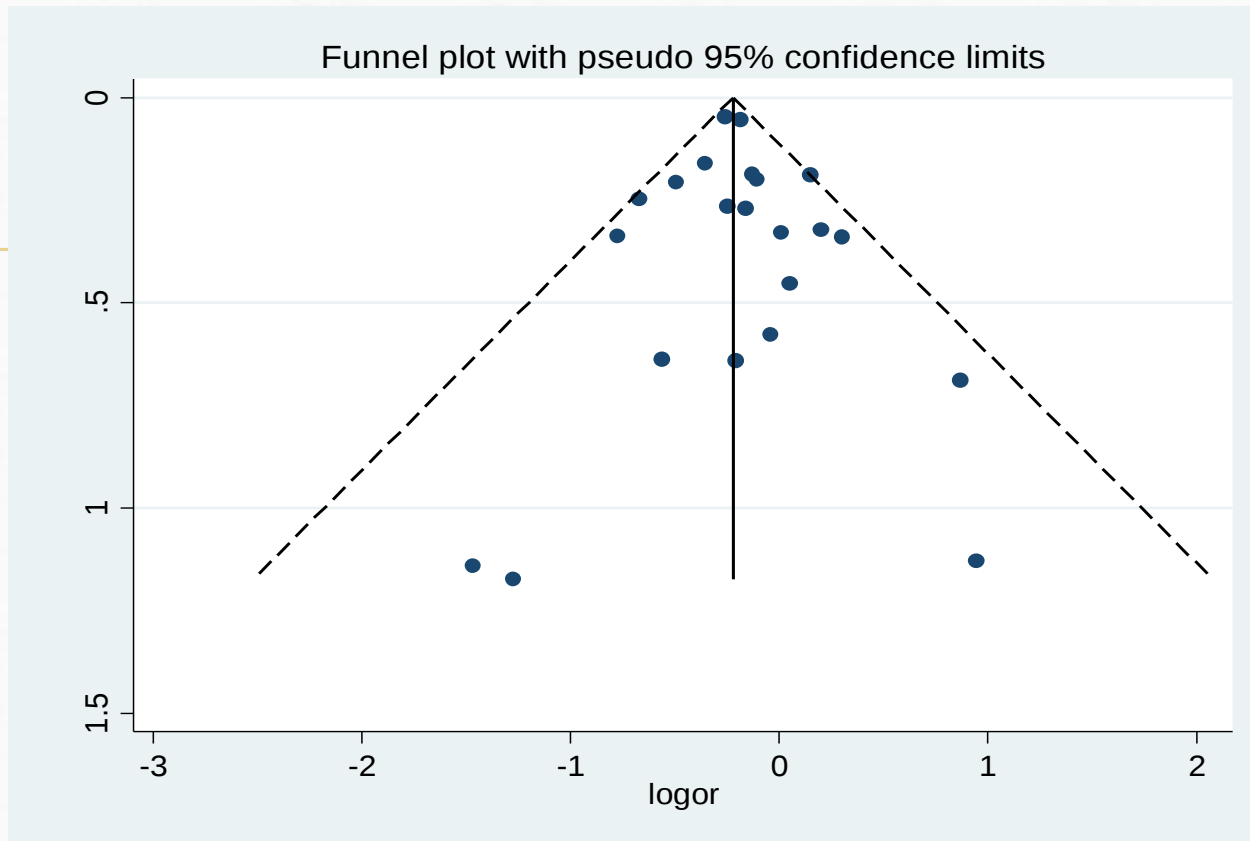
I-squared (variation in RR attributable to heterogeneity) = 30.9%

Test of RR=1 : z= 7.75 p = 0.000









با تشکر از توجه شما

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