EBM文獻評讀演練

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大綱

文獻評讀

一、評讀目的

二、評讀原則

文獻評讀技巧(VIP)

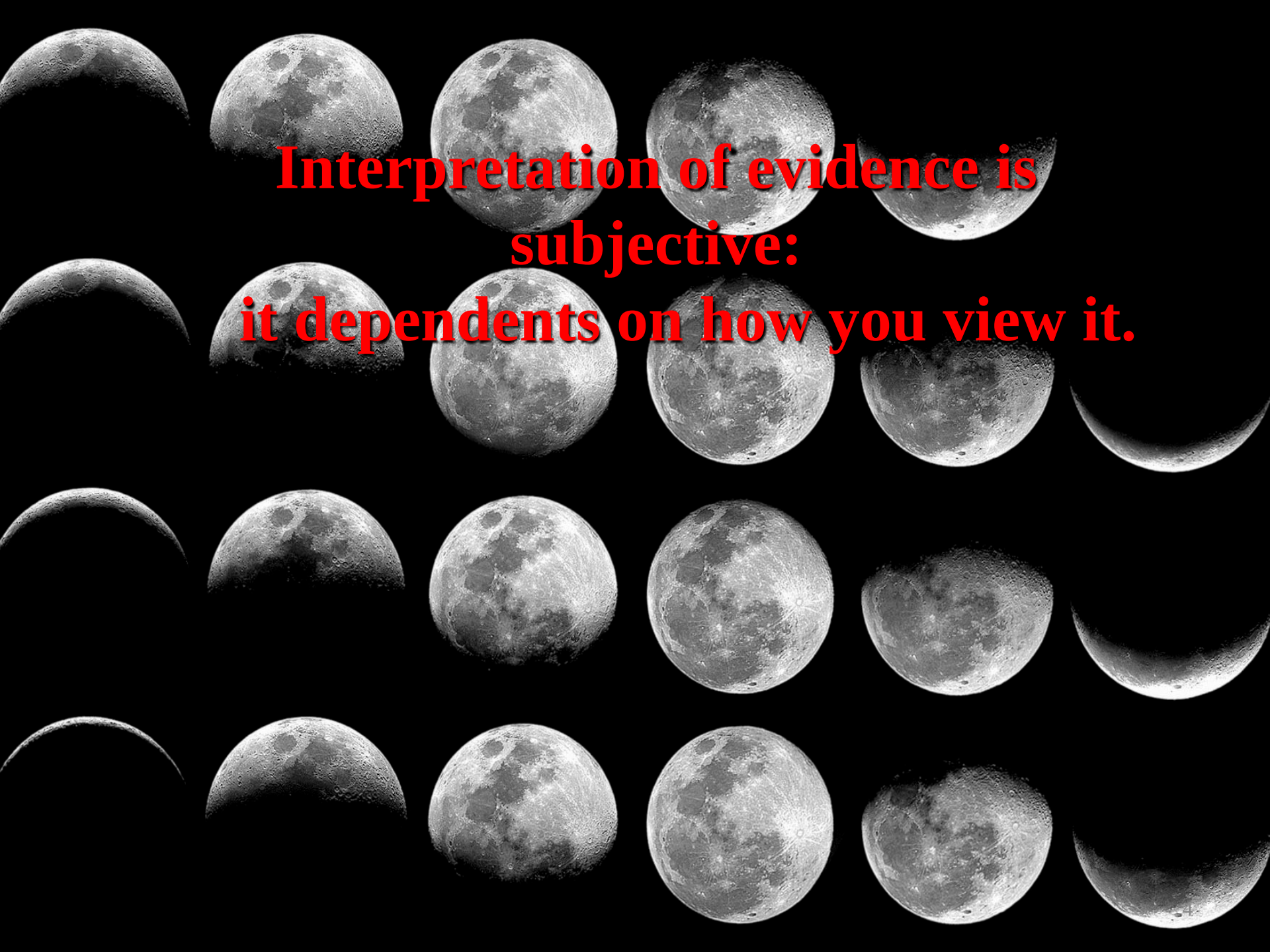
實證醫學證據等級

文獻評讀指南工具

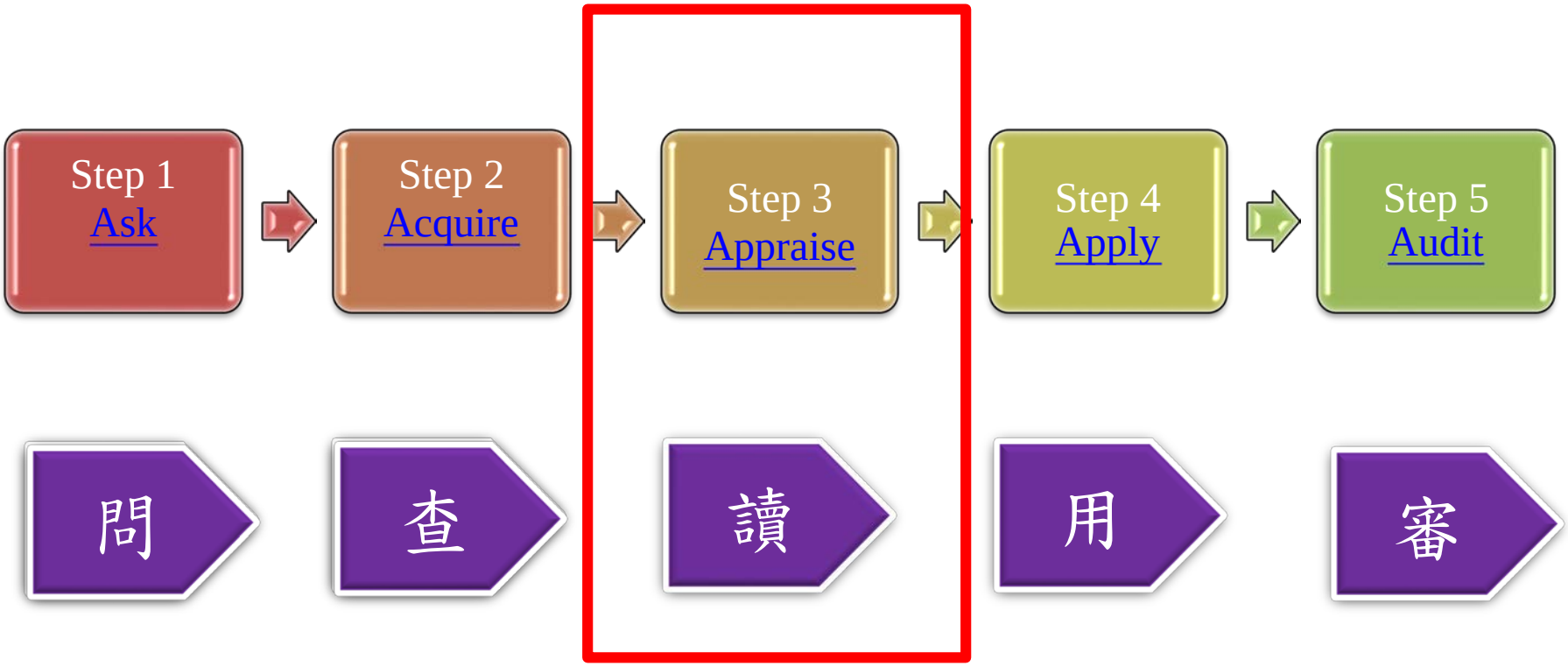
Dr. Sydney Burwell, Dean of Harvard Medical School

Half of what you are taught as medical students will in ten years have been shown to be wrong. And the trouble is, none of your teachers knows which half.

在醫學院裡我教的, 有一半可能在十年之後會被證實是錯誤的. 最糟糕的是我們不知道哪一半是錯誤的


Interpretation of evidence is
subjective:
it dependents on how you view it.

實證五步 5A



ChYang 28 ,Apr 2011,From http://www.ebm.twbbs.org/bin/view/KCGMH/WebHome

文獻評讀之目的

醫療資訊爆炸且虛實難解的年代.

提供您面對文獻的一種思路及評估方式

- 評估作者提供的研究設計與研究數據結果足不足以達到作者所下的結論?
- 其他類似主題的文獻證據有沒有提供相輔助或相抵觸的論點?
- 兩者差異點為何?
- 能幫忙我的病人嗎?

真的可信嗎?
To Be or Not to Be



醫學文獻不是只在課堂或作業裡

新聞首頁 政治 社會 地方 國際 財經 科技 運動 健康 教育 藝文 影劇

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丹麥研究：服用維他命　反而提高死亡率5%

ETtoday 更新日期：2007/02/28 17:15　記者：記者周永旭／編譯

根據28日發表的兩項最新醫學研究指出，固定服用維他命丸對健康不僅幫助不大，甚至還可能提高死亡率；此外，服用低脂乳製品，可能反而會讓婦女更難以懷孕。

這項維他命研究發表在最新一期的「美國醫學協會期刊」之上。研究推翻了過去認爲服用維他命A、E以及胡蘿蔔素可能可以預防心臟病與癌症的認知。

除了沒有帶來什麼好處之外，服用維他命丸，不論是單一維他命或是綜合維他命丸，反而會讓死亡率平均提高5%。

若是分別來看，服用維他命A提高死亡率16%，服用維他命E提高死亡率4%，服用胡蘿蔔素提高死亡率7%。至於服用維他命C，研究的結

丹麥研究：服用維他命反而提高死亡率5%

- 根據2007年2月28日發表的兩項最新醫學研究指出，固定服用維他命丸對健康不僅幫助不大，甚至還可能提高死亡率；
- 這項維他命研究發表在「美國醫學協會期刊」JAMA
- 丹麥哥本哈根大學醫院的科學家，針對超過20萬人進行深入分析，研究推翻了過去認為服用維他命A、E以及胡蘿蔔素可能可以預防心臟病與癌症的認知。
- 除了沒有帶來什麼好處之外，服用維他命丸，不論是單一維他命或是綜合維他命丸，反而會讓死亡率平均提高5%

丹麥研究：服用維他命反而提高死亡率5%

- 若是分別來看，服用維他命**A**提高死亡率**16%**，服用維他 命**E**提高死亡率**4%**，服用胡蘿蔔素提高死亡率**7%**。至於 服用維他命**C**，研究的結果並不一致，有的說它不會提高 死亡率，也有的說不論是單獨服用或是和其它維他命一起 服用，則會提高死亡率**6%**。
- 在維他命中，硒**(Selenium)** 是唯一具有正面效果者，可 以減少死亡率**10%**。
- 丹麥哥本哈根大學醫院的科學家，深入分析研究後指出， 服用維他命帶來的公共衛生後果不容小覷。

如果您母親每天均吃一顆綜合維他命，她看到報導，打電話問你要不要繼續吃，你的建議是?

1. 那就不要吃了
2. 隨便，吃不吃都可以
3. 還是要吃比較好，這只是一篇研究
4. 我不知道

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Vol. 297 No. 8, February 28, 2007

Review

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ABSTRA

Contex

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Conclusions Treatment with beta carotene, vitamin A, and vitamin E may increase mortality. The potential roles of vitamin C and selenium on mortality ne

JAMA

SCI2007 Impact factor

25.547 內科臨床醫學雜誌排名第三 全部臨床醫學雜誌排名第四 實證醫學旗手級推手 本文在發表後至今10年，已經有2025篇引用

INTRODUCTION

Oxidative stress is implicated in most human diseases.[1-2] Antioxidants may decrease the oxidative damage and its alleged harmful effects.[3-6] Many people supplements, believing to improve their health and prevent diseases.[7-10] Whether antioxidant supplements are beneficial or harmful is uncertain.[11-15] Many

影響您相信一篇研究結論，最重要的因素是?

1.刊登期刊的SCI分數及排名很高
2.作者及其研究單位學術聲譽卓著
3.研究結果符合您的認知
4.研究物件人數眾多
5.實驗設計符合研究主題
6.文章中很少偏誤及錯誤

那麼為什麼這篇研究結果仍然如此難以接受?

文獻評讀原則

- 研讀論文前，需要具基本概念：
- ***雜誌文章類型*（*Types of Journal Articles*）**

一般將論文分三大類:

✓ case report 或 case series、

✓ original articles

✓ review articles。

- 拿到文章，第一個要知道這篇文章是屬於那一類的的文章。
  - ✓ 那要如何分辨呢？
  - ✓ 是要看文章的那一部分呢？
    - Abstract
    - Introduction
    - Material & Methods
    - Results
    - Discussion

- ***與臨床有關（Clinical Related）***-和臨床照顧病患有關嗎？還是與實驗室的動物或細胞有關？
- **可用在病患的實證，應是臨床論文，非實驗室的基礎研究。**

Appraise評價

- 第三個步驟就是研讀我們找到的文獻（Best available evidence）！
  - ✓ **論文好壞，最重要的決定就在研究方法。**
- 不同的研究主題，合適的研究方法也不同。（參考Levels of evidence table）
- 想一想
  - ✓ 針對你的問題，那種研究的品質最高？
  - ✓ 若沒有，還有其他合適的研究方法嗎？

文獻評讀技巧 (VIP)

- 閱讀一般論文要注意以下幾點:可信、重要問題、方法正確、結論合理
- 主動閱讀
- 搜尋重點資訊
- 文獻評讀的VIP

文獻評讀技巧 (VIP)

一、閱讀一般論文要注意以下幾點:可信、重要問題、方法正確、結論合理

- 以實證醫學的術語來說就是
- 證據的形式（研究主題：診斷、治療、預後、因果、...）
- 證據的品質（可信，且用好的研究方法）
- 證據的強度（重要問題，結論合理及影響大）

主動閱讀

- 帶著問題找答案
- 先看摘要
- 如果這篇對你很重要，拜託，一定要把摘要看懂
- 善用翻譯工具 & 自己逐句編修
- **Google翻譯-【提出修改建議】**
- 或貼於**Word檔-橫式-兩欄表格**

父親支持(father support)於母乳哺育之成效

- Fathers as Supporters for Improved Exclusive Breastfeeding in Viet Nam
- (Tran Huu Bich • Dinh Thi Phuong Hoa • Mats Ma°lqvist,
- Matern Child Health J (2014) 18:1444–1453,
- DOI 10.1007/s10995-013-1384-9)

Abstract

To determine the extent of exclusive breastfeeding practices among mothers of 4 and 6 month old infants whose fathers received breastfeeding education materials and counseling services. A quasi-experimental design was used. At the baseline, 251 and 241 couples were recruited into the intervention and control sites respectively. Fathers in the intervention area received breastfeeding education materials, counseling services at commune health centers and household visits. In the control site, where mothers routinely receive services on antenatal and postpartum care, fathers did not receive any intervention services on promoting breastfeeding. Primary indicators were exclusive breastfeeding at 4 and 6 months. At 6 months of age, based on 24-hour recall, 16.0 % (38/238) of mothers in the intervention group were exclusively breastfeeding their children, compared to 3.9 % (10/230) of those mothers in the control group ($p<0.001$). Significant differences were found based on last-week recall (8.8 % in the intervention group vs. 1.3 % in the control group, $p<0.001$) and since-birth recall (6.7 % in the intervention group vs. 0.9 % in the control group, $p<0.01$). At 4 months of age, based on since birth recall, the breastfeeding proportion was significantly higher in the intervention group than in control group (20.6 % in the intervention group vs. 11.3 % in the control group, $p<0.01$). An intervention targeting fathers might be effective in increasing exclusive breastfeeding practices at 4 and 6 months. To improve exclusive breastfeeding, health care staff working in maternal and child health units, should consider integrating fathers with services delivered to mothers and children.

英文

To determine the extent of exclusive breastfeeding practices among mothers of 4 and 6 month old infants whose fathers received breastfeeding education materials and counseling services. A quasi-experimental design was used. At the baseline, 251 and 241 couples were recruited into the intervention and control sites respectively. Fathers in the intervention area received breastfeeding education materials, counseling services at commune health centers and household visits. In the control site, where mothers routinely receive services on antenatal and postpartum care, fathers did not receive any intervention services on

中文（繁體）

確定4和6個月大的嬰兒的母親接受母乳喂養教育材料和諮詢服務的純母乳喂養做法的程度。使用準實驗設計。在基線，251和241對夫婦分別招募到干預和控制站點。干預區的父親接受母乳喂養教育材料，社區保健中心的諮詢服務和家訪。在控制地點，母親經常接受產前和產後護理服務，父親沒有接受任何關於促進母乳喂養的干預服務。主要指標在4和6個月時完全母乳喂養。在6個月齡時，基於24小時回憶，干預組中16.0％（38/238）的母親純母乳喂養他們的孩子，而對照組中的母親為3.9％（10/230）<0.001）。基於上週回憶（在干預組中為8.8％，在對照組中為1.3％，p <0.001）和自出生回憶（在干預組中為6.7％，而在對照組中為0.9％）發現顯著差異，p <0.01）。

- Google翻譯：貼上翻譯→點選【提出修改建議】，成為可編輯翻譯的文字頁面，逐句對照翻譯
- 此篇研究的設計? 研究樣本條件?
- 分哪些組別?各組別的實施內容
- 有哪些效果指標? (outcome indicators?)
- 有效? 沒效?

Table 3 Breastfeeding practices between intervention (n = 238) and control (n = 230) in Hai Duong province, Viet Nam

Breast feeding statuses	Total	Intervention n (%) (n = 238)	Control n (%) (n = 230)	*p* value
4-month BF				
Currently breastfed	463 (98.9)	236 (99.2)	227 (98.7)	0.68
4-month EBF (24-hour)	122 (26.1)	69 (29.0)	53 (23.0)	0.143
4-month EBF (last week)	86 (18.4)	52 (21.8)	34 (14.8)	0.048
4-month EBF (since birth)	75 (16.0)	49 (20.6)	26 (11.3)	0.006
6-month BF				
Currently breastfed	461 (98.5)	236 (99.2)	225 (97.8)	0.22
6-month EBF (24-hour)	47 (10.0)	38 (16.0)	10 (3.9)	<0.001
6-month EBF (last week)	24 (5.1)	21 (8.8)	3 (1.3)	<0.001
6-month EBF (since birth)	18 (3.8)	16 (6.7)	2 (0.9)	0.001

Chi square tests performed to assess differences between intervention and control areas

練習時間

- 翻譯指定文獻摘要（10分鐘）
- 萃取該篇的重點資訊（8分鐘）
- **Effect of restricted pacifier use in breastfeeding term infants for increasing duration of breastfeeding**

文獻評讀技巧 - 三部曲

VIP

- Validity (Reliability) 效度/信度

  Can we believe it? (研究方法的探討)

  – 錯誤**errors**

  – 偏誤**bias**

- Importance (Impact) 重要性

  We believe it! But does it matter?

  (研究結果的分析)

- Practice (Applicability) 臨床適用性

  If we believe it - does it apply to our patients?

  (如何在臨床運用)

V（Validity/ reliability）信效度

影響研究品質的良窳-內在效度(Validity)

內在效度**internal validity**
-因果關係推論的真實性
-**沒有**偏誤**bias**

偏誤(Bias)

- 研究設計與實施過程中，凡是會使數據(data)或結論朝向(toward)或偏離真實(against truth)之任何因數，稱之為偏誤
- 如果在研究之設計與實施過程中，忽略可預期之偏誤因素會使此研究之內部效度降低

偏誤(Bias)之分類

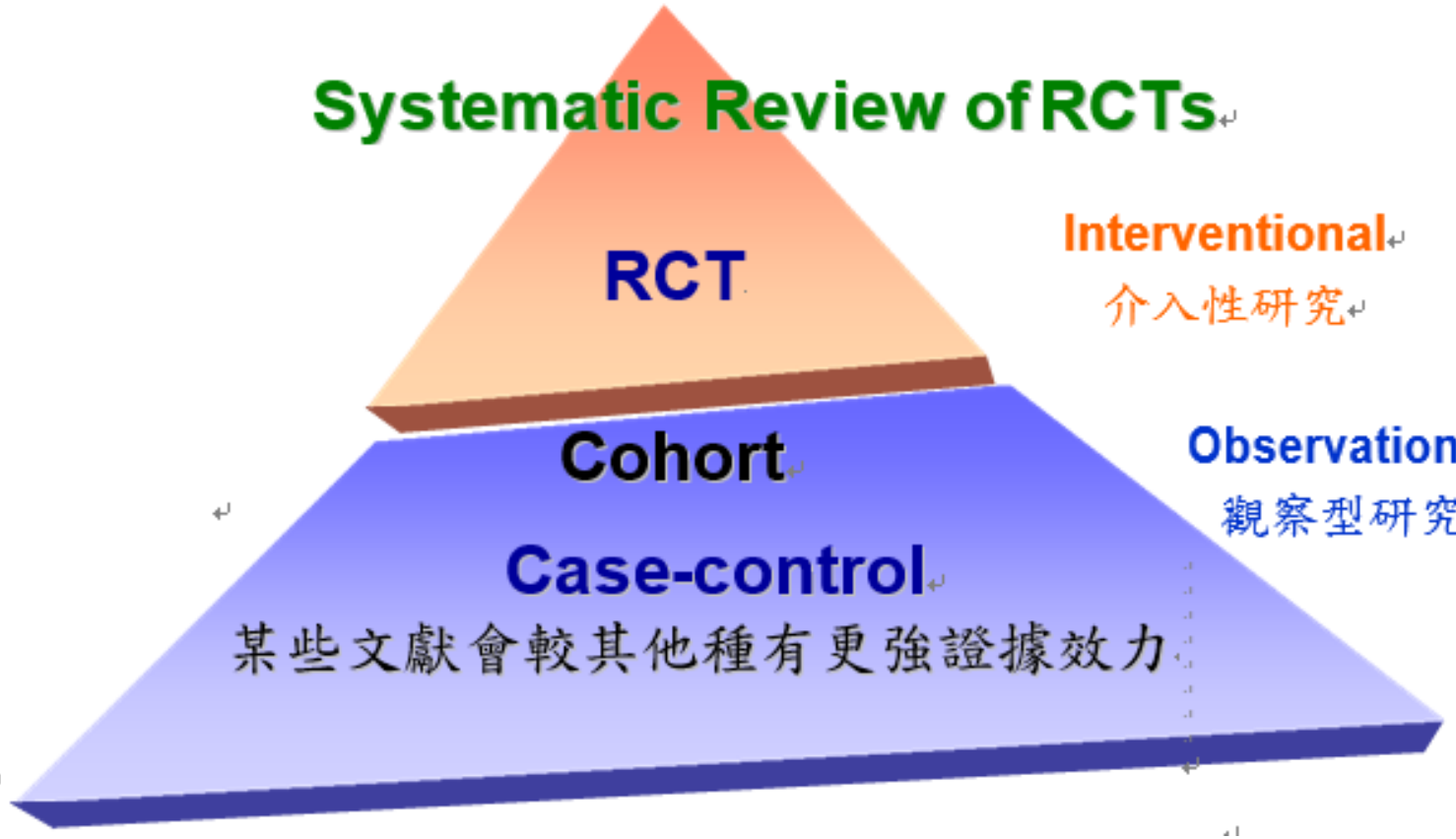
- 選擇性偏差(selection bias):
  - 必須讓所有參與研究對象都有相同機率被分派到實驗組或控制組
- 評估偏差(observer bias, information bias, detection bias):
  - 實驗主持者參與研究數據之測量與結果之評估
- 實驗過程退出偏差(withdrawal or dropout bias):
  - 無論研究組或對照組若中途退出太多(> 20%), 必須探討其原因, 推論統計亦應注意.
- 干擾因子 (Confounding factor):
  - 與臨床問題無關、對所要觀察的結果有決定性的影響、且在實驗組與控制組間分佈不平均.

偏誤(Bias)之分類

- 儀器或測量偏差(instrument or measurement bias,):
  - 儀器之保養與校正.
  - 標本之保存與運送: 微生物培養; 血液氣體分析,etc.
  - 測量標準作業流程 (standard operation procedure; SOP)
- 回憶性偏差(recall bias):
  - Case-control study: retrospective recall bias.
  - 研究組成員較對照組成員容易記起疾病相關因素: 血癌兒童之父母較常記起住家附近有變電所或高壓電塔.
- 出版偏差(publication bias):
  - 研究者與雜誌傾向發表治療有效、副作用較少之正面(positive)結論.

那一類的研究設計其偏誤較少?

The Evidence Pyramid
證據強度金字塔
for Therapy/Harm Problem



Validity
證據強度

I（Importance/Impact）重要性

1. 治療效果有多大？多重要？

決定研究中所描述的治療可能利益(或傷害)是否重要?

使用統計分析比較介入處置是否有統計差異?

2.治療效果的估計有多精確?

統計意義VS臨床意義

- **統計差異 statistical significance，p 值越小，虛無假設為真實的可能性越低，推翻虛無假設**
- **可能犯錯的機會越低。因此宣稱研 究有統計顯著差異的肯定程度越高。**
- **p值跟研究所要探討的臨床效果是否重要之間不是絕對的關係，一個p值顯著的結果，臨床上的效果有可能卻很微小。**

統計意義vs臨床意義

1. 統計意義要看P值<0.05

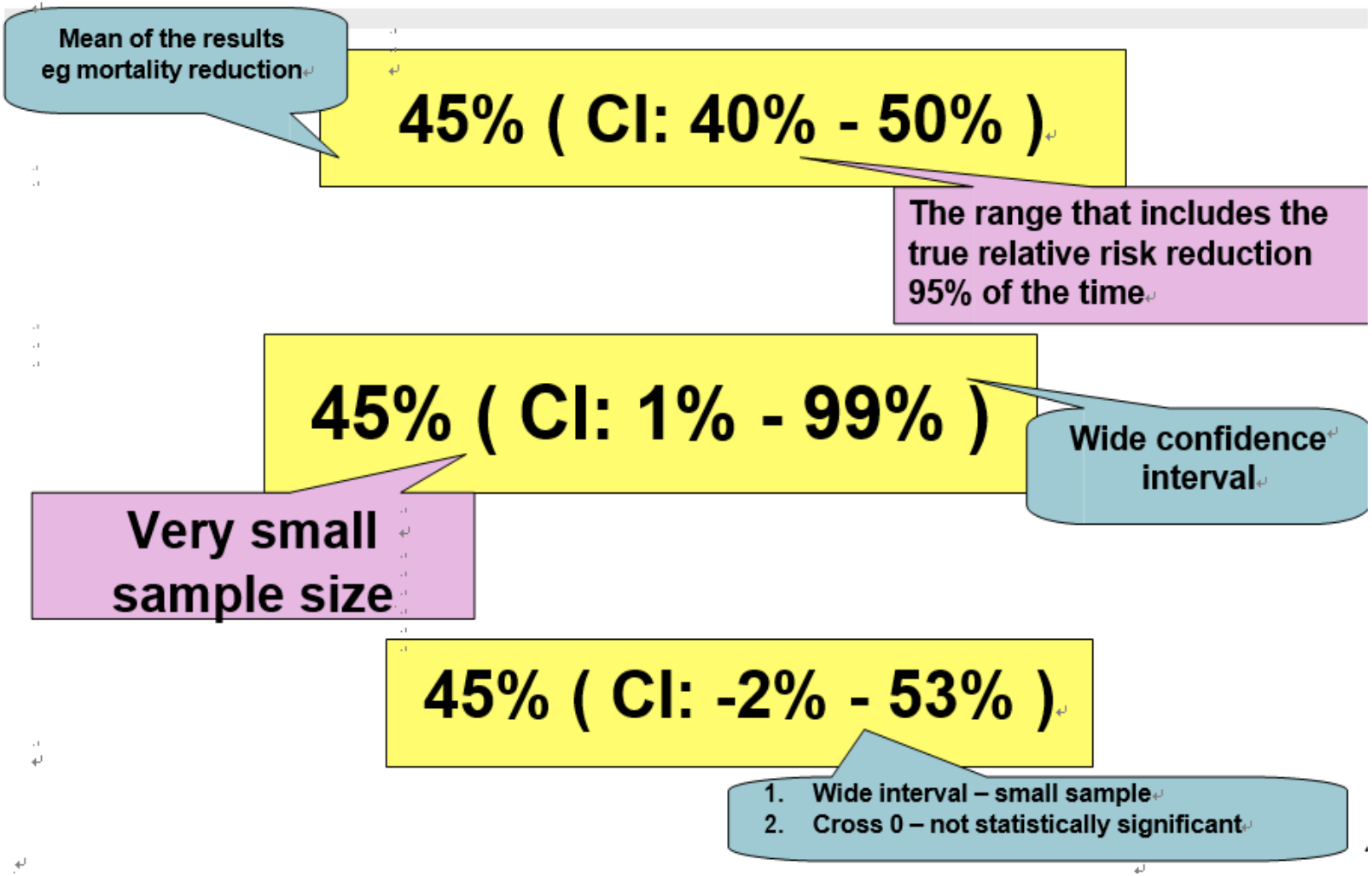
2. 臨床意義要看效果估計值信賴區間

效果的相對估計值：相對危險(relative risk, RR)、相對危險性降低度(relative risk reduction)、勝算比(odds ratio, OR)，代表生物學上的影響。

效果的絕對估計值：絕對危險性降低度(absolute risk reduction, ARR)、益一需治數(number needed to treat, NNT)，代表臨床上對病人的影響(會隨population不同而改變)

3. 信賴區間 **Confidence interval (CI)** ：量化估計值的不確定性，通常以**95%**信賴區間表示， 我們有**95%**的信心確定群體的正確數值會落在這個範圍內

Confidence Intervals信賴區間



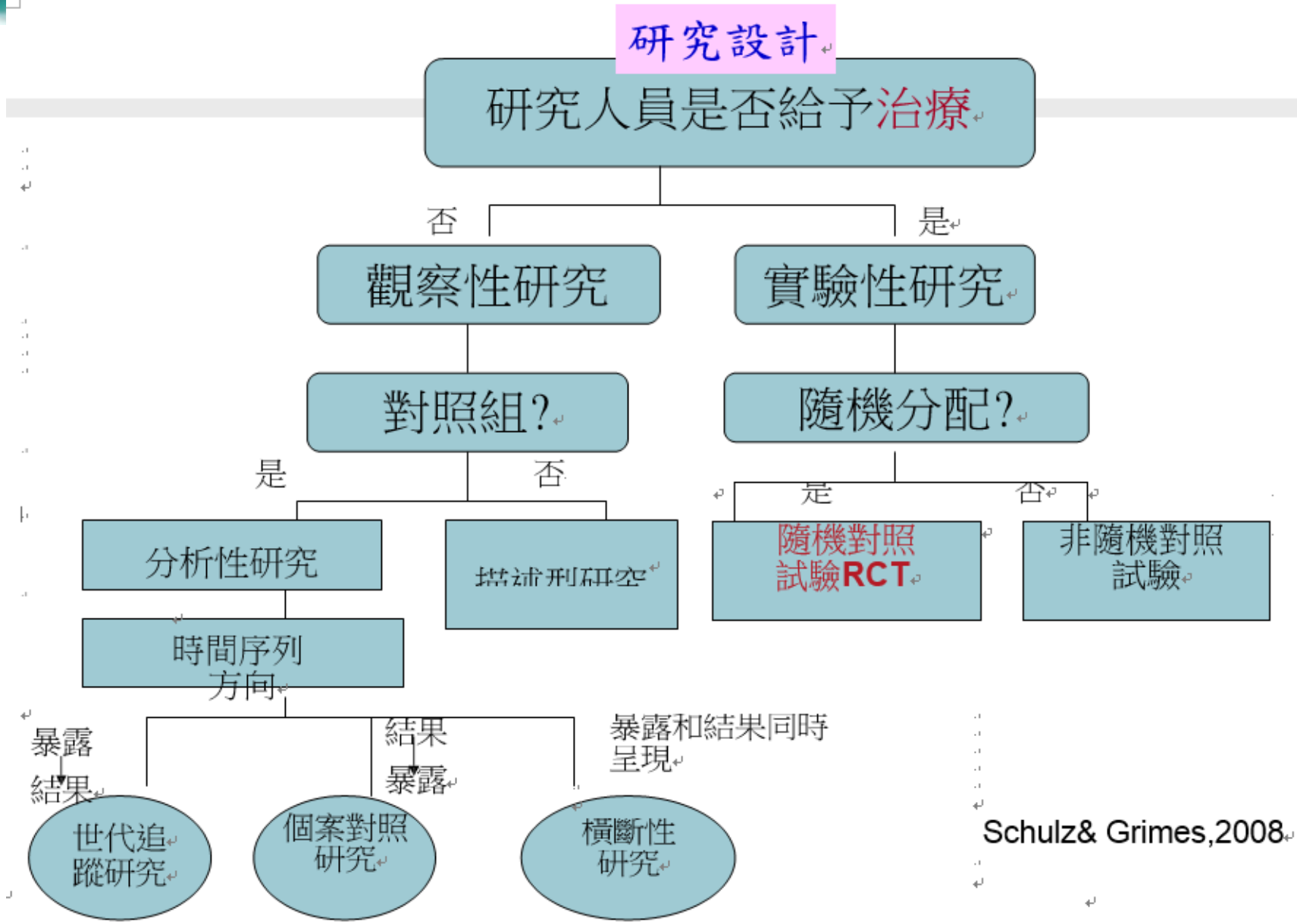
P（Practice/Applicability）

臨床適用性

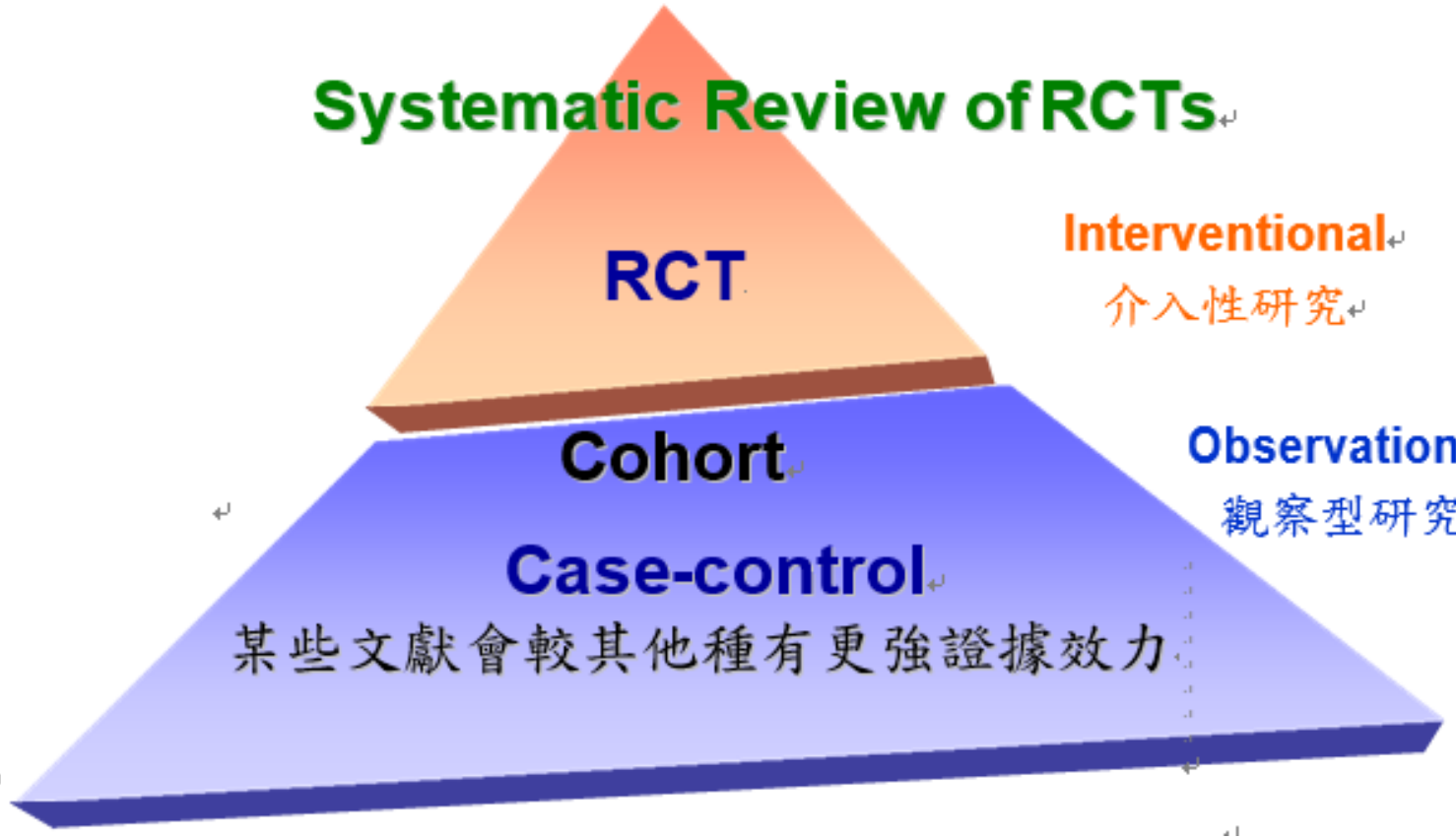
- 研究結果可適用於我們的臨床現況嗎？
- 研究物件條件與我們個案條件相似嗎？
- 可運用的資源：該方法我們有足夠的資源採用嗎？建議的措施是否適用於我們所在的場所、診療環境？病患及醫療提供者的配合度如何？
- 病患的偏好：我們的個案願意接受嗎？

實證醫學證據等級

- **Level I：有顯著意義的隨機對照研究（Randomized controlled trials, RCT）**
- **Level II：世代研究（Cohort study）**
- **Level III：病例及對照組研究（Case-control study）**
- **Level IV：病例報告（Case series）**
- **Level V：專家意見（Expert opinion）**

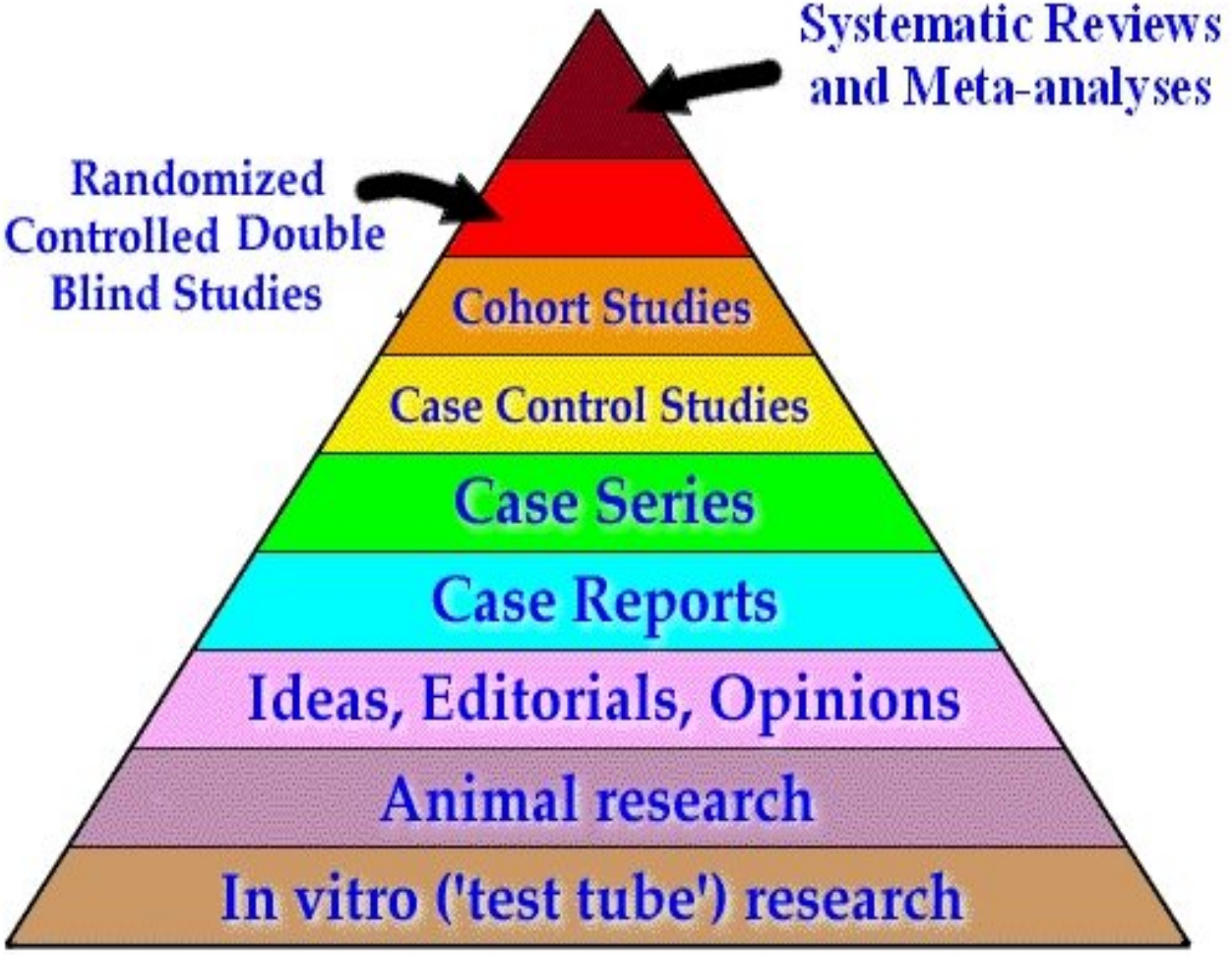

研究設計
研究人員是否給予治療
否
是
觀察性研究
實驗性研究
對照組?
隨機分配?
是
否
是
否
分析性研究
描述型研究
隨機對照試驗RCT
非隨機對照試驗
時間序列方向
暴露
結果
結果
暴露
暴露和結果同時呈現
世代追蹤研究
個案對照研究
橫斷性研究
Schulz& Grimes,2008

The Evidence Pyramid
證據強度金字塔
for Therapy/Harm Problem



Validity
證據強度

證據分級



http://hms.harvard.libguides.com/content.php?pid=38249&sid=281887

文獻證據等級-Oxford Center

Level	Therapy/Prevention, Aetilogy/Harm
1 a	將隨機對照臨床研究(Randomized Clinical Trial, RCT)以系統性評論(systemic review, SR)後的結果。
b	具有嚴格的信賴區間的個別RCT研究。
c	無論使用何種研究方法，但其研究結果為完全正面、完全負面或完全無效果(all or none)的研究結果。
2 a	將同質性的世代研究(cohort studies)以系統性評論的結果。
b	個別世代研究或是質量較不足的RCT研究。
c	以多數結果為基礎的研究，及生態學的研究("Outcomes" research; ecological studies)。
3 a	個案對照研究的系統性文獻回顧
b	單一的個案對照研究
4	病例統計報告，以及質量較不足的個案對照研究。
5	未經嚴謹評估的意見，或者基礎生理學、一般實驗室研究及必要原則。

隨機控制試驗 Randomized controlled trial (level 1b)

1. 隨機控制試驗幾乎成為判斷治療是否有益的唯一可接受方法。

2.研究特點:

(1)在研究中導入了實驗/處置；

(2)固定其他的條件，兩組之間只有處置不同；

(3) 隨機分派方式(Randomization)使兩組的干擾因素相似，使兩組病人能充分的相提並論，可比較性comparable。 研究個案有相等的機率被分配到實驗組或控制組；但隨機分配不保證兩組的狀況一定會一樣；若樣本數少時，誤差就會產生。

文獻證據等級

往下偏差越大(I~VII)

I. 高品質隨機控制試驗文獻系統回顧

II. 設計良好且至少一個或以上的隨機控制試驗

III. 無隨機化但設計良好的控制試驗

IV. 設計良好的個案對照及世代研究

V. 描述性及質性研究文獻系統回顧

VI. 單一的描述性或質性研究

VII. 專家報告及權威意見

(Melnyk & Fineout-Overholt, 2005)

臨床應用的建議等級

臨床上可根據此建議等級，形成臨床指引

- **Group A：根據Level I 證據所做的建議**
- **Group B：根據Level II 證據所做的建議**
- **Group C：根據Level III 證據所做的建議**
- **Group D：根據Level IV 以下等級證據所做的建議**

練習時間

Effect of restricted pacifier use in breastfeeding term infants for increasing duration of breastfeeding

1. 請文獻評讀三部曲(VIP)評析指定文獻

2. 您認為此篇文獻屬於哪一層級的證據強度？

3. 您覺得這篇文獻應用於臨床的等級為何

Background

To successfully initiate and maintain breastfeeding for a longer duration, the World Health Organization's *Ten Steps to Successful Breastfeeding* recommends total avoidance of artificial teats or pacifiers for breastfeeding infants. Concerns have been raised that offering the pacifier instead of the breast to calm the infant may lead to less frequent episodes of breastfeeding and as a consequence may reduce breast-milk production and shorten duration of breastfeeding.

Objective & Methods

- **Objectives**

To assess the effect of restricted versus unrestricted pacifier use in healthy full-term newborns whose mothers have initiated breastfeeding and intend to exclusively breastfeed, on the duration of breastfeeding, other breastfeeding outcomes and infant health.

- **Search methods**

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (30 June 2016) and reference lists of retrieved studies.

- **Selection criteria**

Randomised and quasi-randomised controlled trials comparing restricted versus unrestricted pacifier use in healthy full-term newborns who have initiated breastfeeding.

- **Data collection and analysis**

Two review authors independently assessed trials for inclusion and risk of bias, extracted data and checked them for accuracy. The quality of the evidence was assessed using the GRADE approach.

Main results

We found three trials (involving 1915 babies) for inclusion in the review, but have included only two trials (involving 1302 healthy full-term breastfeeding infants) in the analysis. Meta-analysis of the two combined studies showed that pacifier use in healthy breastfeeding infants had no significant effect on the proportion of infants exclusively breastfed at three months (risk ratio (RR) 1.01; 95% confidence interval (CI) 0.96 to 1.07, two studies, 1228 infants), and at four months of age (RR 1.01; 95% CI 0.94 to 1.09, one study, 970 infants, *moderate-quality evidence*), and also had no effect on the proportion of infants partially breastfed at three months (RR 1.00; 95% CI 0.98 to 1.02, two studies, 1228 infants), and at four months of age (RR 0.99; 95% CI 0.97 to 1.02, one study, 970 infants). None of the included trials reported data on the other primary outcomes, i.e. duration of partial or exclusive breastfeeding, or secondary outcomes: breastfeeding difficulties (mastitis, cracked nipples, breast engorgement); infant's health (dental malocclusion, otitis media, oral candidiasis; sudden infant death syndrome (SIDS)); maternal satisfaction and level of confidence in parenting. One study reported that avoidance of pacifiers had no effect on cry/fuss behavior at ages four, six, or nine weeks and also reported no effect on the risk of weaning before age three months, however the data were incomplete and so could not be included for analysis.

- **Authors' conclusions**

Pacifier use in healthy term breastfeeding infants, started from birth or after lactation is established, did not significantly affect the prevalence or duration of exclusive and partial breastfeeding up to four months of age. Evidence to assess the short-term breastfeeding difficulties faced by mothers and long-term effect of pacifiers on infants' health is lacking.

- **Quality of Evidence: Moderate**

Not downgraded for study limitations (lack of blinding of the intervention as there was blinding of the outcome assessor and outcome is objective)

評讀文章時先快速篩選以下問題以決定要不要繼續讀下去?

Screening Questions

1.這篇研究是否問一個清楚的問題? **(**與我們的**PICO**比較**)**

2.這篇的研究設計是否為回答此問題的最佳等級?

Detailed Questions

- **To Evaluate Internal & External Validity**
- 內在效度與外在效度的評估

文獻評讀工具- 量化品質(內在效度)

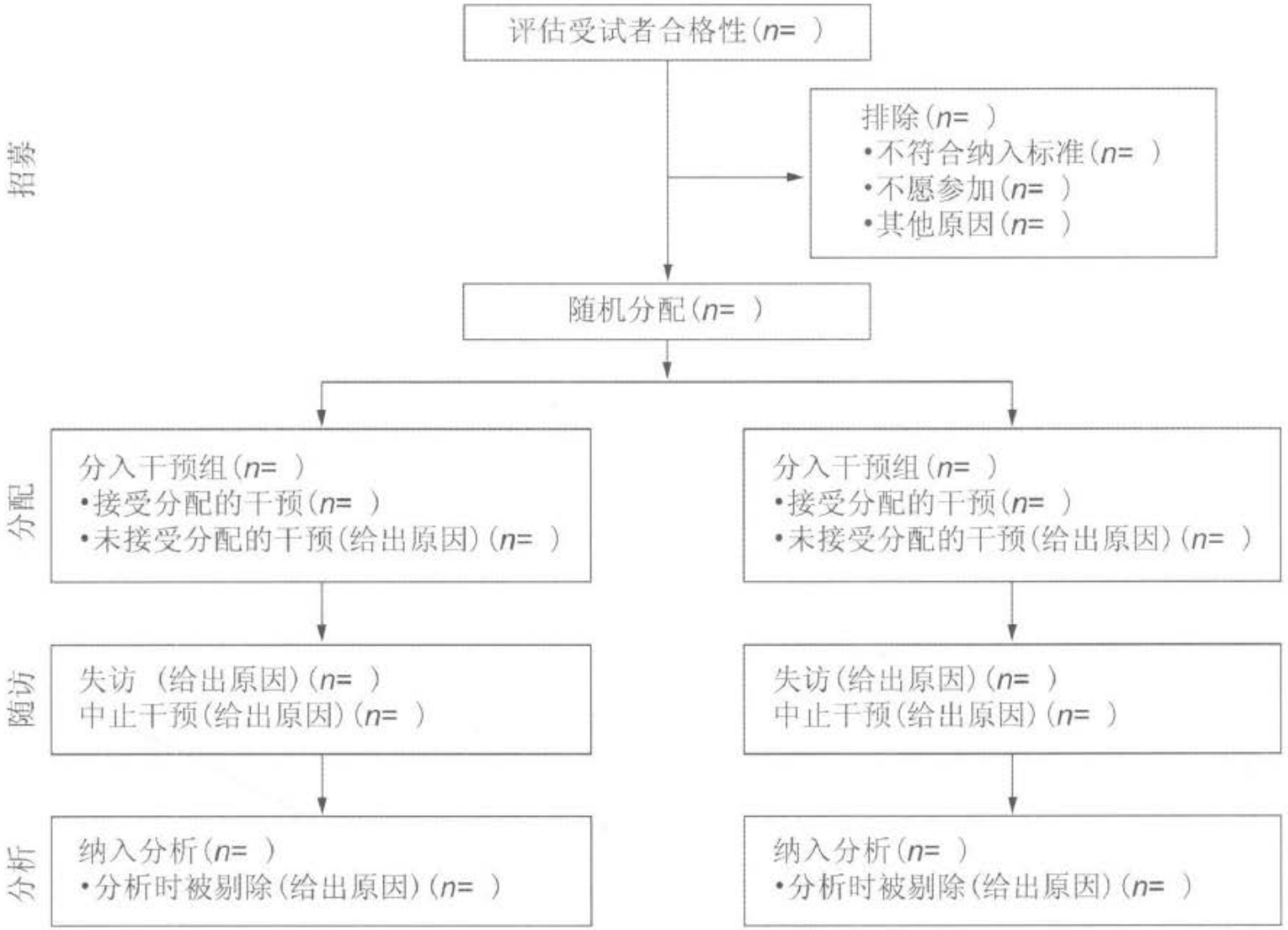


图 1　两组平行对照随机临床试验各阶段(招募受试者、分配干预措施、随访和数据分析)进程的流程图[52-54]

	Yes	No	Unclear	NA
1. Was true randomization used for assignment of participants to treatment groups?	☐	☐	☐	☐
2. Was allocation to treatment groups concealed?	☐	☐	☐	☐
3. Were treatment groups similar at the baseline?	☐	☐	☐	☐
4. Were participants blind to treatment assignment?	☐	☐	☐	☐
5. Were those delivering treatment blind to treatment assignment?	☐	☐	☐	☐
6. Were outcomes assessors blind to treatment assignment?	☐	☐	☐	☐
7. Were treatment groups treated identically other than the intervention of interest?	☐	☐	☐	☐
8. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	☐	☐	☐	☐
9. Were participants analyzed in the groups to which they were randomized?	☐	☐	☐	☐
10. Were outcomes measured in the same way for treatment groups?	☐	☐	☐	☐
11. Were outcomes measured in a reliable way?	☐	☐	☐	☐
12. Was appropriate statistical analysis used?	☐	☐	☐	☐
13. Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

- **JBI CRITICAL APPRAISAL CHECKLIST FOR RCT**

JBI CRITICAL APPRAISAL CHECKLIST FOR QUASI-EXPERIMENTAL STUDIES

	Yes	No	Unclear	Not applicable
1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?	☐	☐	☐	☐
2. Were the participants included in any comparisons similar?	☐	☐	☐	☐
3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?	☐	☐	☐	☐
4. Was there a control group?	☐	☐	☐	☐
5. Were there multiple measurements of the outcome both pre and post the intervention/exposure?	☐	☐	☐	☐
6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?	☐	☐	☐	☐
7. Were the outcomes of participants included in any comparisons measured in the same way?	☐	☐	☐	☐
8. Were outcomes measured in a reliable way?	☐	☐	☐	☐
9. Was appropriate statistical analysis used?	☐	☐	☐	☐

JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTICAL CROSS SECTIONAL STUDIES

	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5. Were confounding factors identified?	☐	☐	☐	☐
6. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was appropriate statistical analysis used?	☐	☐	☐	☐

JBI CRITICAL APPRAISAL CHECKLIST FOR CASE CONTROL STUDIES

	Yes	No	Unclear	Not applicable
1. Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	☐	☐	☐	☐
2. Were cases and controls matched appropriately?	☐	☐	☐	☐
3. Were the same criteria used for identification of cases and controls?	☐	☐	☐	☐
4. Was exposure measured in a standard, valid and reliable way?	☐	☐	☐	☐
5. Was exposure measured in the same way for cases and controls?	☐	☐	☐	☐
6. Were confounding factors identified?	☐	☐	☐	☐
7. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
8. Were outcomes assessed in a standard, valid and reliable way for cases and controls?	☐	☐	☐	☐
9. Was the exposure period of interest long enough to be meaningful?	☐	☐	☐	☐
10. Was appropriate statistical analysis used?	☐	☐	☐	☐

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

JBI CRITICAL APPRAISAL CHECKLIST FOR COHORT STUDIES

	Yes	No	Unclear	Not applicable
1. Were the two groups similar and recruited from the same population?	☐	☐	☐	☐
2. Were the exposures measured similarly to assign people to both exposed and unexposed groups?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were confounding factors identified?	☐	☐	☐	☐
5. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
6. Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was the follow up time reported and sufficient to be long enough for outcomes to occur?	☐	☐	☐	☐
9. Was follow up complete, and if not, were the reasons to loss to follow up described and explored?	☐	☐	☐	☐
10. Were strategies to address incomplete follow up utilized?	☐	☐	☐	☐
11. Was appropriate statistical analysis used?	☐	☐	☐	☐

JBI CRITICAL APPRAISAL CHECKLIST FOR DIAGNOSTIC TEST ACCURACY STUDIES

	Yes	No	Unclear	Not applicable
1. Was a consecutive or random sample of patients enrolled?	☐	☐	☐	☐
2. Was a case control design avoided?	☐	☐	☐	☐
3. Did the study avoid inappropriate exclusions?	☐	☐	☐	☐
4. Were the index test results interpreted without knowledge of the results of the reference standard?	☐	☐	☐	☐
5. If a threshold was used, was it pre-specified?	☐	☐	☐	☐
6. Is the reference standard likely to correctly classify the target condition?	☐	☐	☐	☐
7. Were the reference standard results interpreted without knowledge of the results of the index test?	☐	☐	☐	☐
8. Was there an appropriate interval between index test and reference standard?	☐	☐	☐	☐
9. Did all patients receive the same reference standard?	☐	☐	☐	☐
10. Were all patients included in the analysis?	☐	☐	☐	☐

JBI CRITICAL APPRAISAL CHECKLIST FOR ANALYTICAL CROSS SECTIONAL STUDIES

	Yes	No	Unclear	Not applicable
1. Were the criteria for inclusion in the sample clearly defined?	☐	☐	☐	☐
2. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
3. Was the exposure measured in a valid and reliable way?	☐	☐	☐	☐
4. Were objective, standard criteria used for measurement of the condition?	☐	☐	☐	☐
5. Were confounding factors identified?	☐	☐	☐	☐
6. Were strategies to deal with confounding factors stated?	☐	☐	☐	☐
7. Were the outcomes measured in a valid and reliable way?	☐	☐	☐	☐
8. Was appropriate statistical analysis used?	☐	☐	☐	☐

JBI CRITICAL APPRAISAL CHECKLIST FOR ECONOMIC EVALUATIONS

		Yes	No	Unclear	Not applicable
1.	Is there a well-defined question?	☐	☐	☐	☐
2.	Is there comprehensive description of alternatives?	☐	☐	☐	☐
3.	Are all important and relevant costs and outcomes for each alternative identified?	☐	☐	☐	☐
4.	Has clinical effectiveness been established?	☐	☐	☐	☐
5.	Are costs and outcomes measured accurately?	☐	☐	☐	☐
6.	Are costs and outcomes valued credibly?	☐	☐	☐	☐
7.	Are costs and outcomes adjusted for differential timing?	☐	☐	☐	☐
8.	Is there an incremental analysis of costs and consequences?	☐	☐	☐	☐
9.	Were sensitivity analyses conducted to investigate uncertainty in estimates of cost or consequences?	☐	☐	☐	☐
10.	Do study results include all issues of concern to users?	☐	☐	☐	☐
11.	Are the results generalizable to the setting of interest in the review?	☐	☐	☐	☐

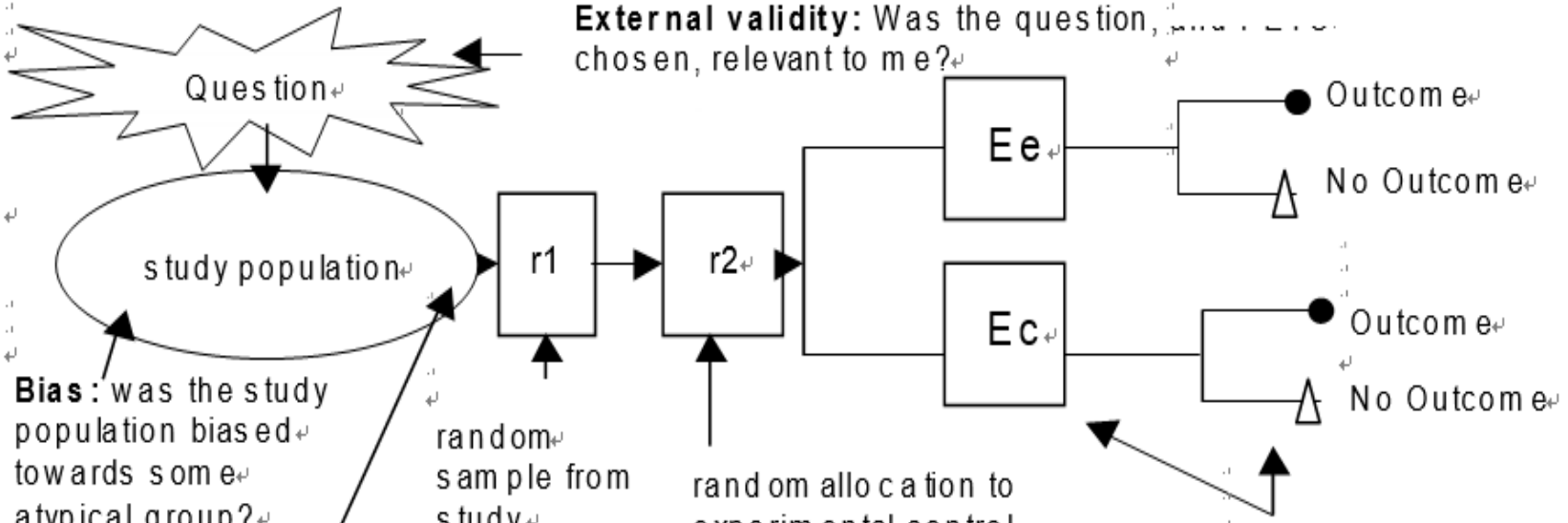
JBI CRITICAL APPRAISAL CHECKLIST FOR STUDIES REPORTING PREVALENCE DATA

	Yes	No	Unclear	Not applicable
1. Was the sample frame appropriate to address the target population?	☐	☐	☐	☐
2. Were study participants sampled in an appropriate way?	☐	☐	☐	☐
3. Was the sample size adequate?	☐	☐	☐	☐
4. Were the study subjects and the setting described in detail?	☐	☐	☐	☐
5. Was the data analysis conducted with sufficient coverage of the identified sample?	☐	☐	☐	☐
6. Were valid methods used for the identification of the condition?	☐	☐	☐	☐
7. Was the condition measured in a standard, reliable way for all participants?	☐	☐	☐	☐
8. Was there appropriate statistical analysis?	☐	☐	☐	☐
9. Was the response rate adequate, and if not, was the low response rate managed appropriately?	☐	☐	☐	☐

JBI CRITICAL APPRAISAL CHECKLIST FOR QUALITATIVE RESEARCH

		Yes	No	Unclear	Not applicable
1.	Is there congruity between the stated philosophical perspective and the research methodology?	☐	☐	☐	☐
2.	Is there congruity between the research methodology and the research question or objectives?	☐	☐	☐	☐
3.	Is there congruity between the research methodology and the methods used to collect data?	☐	☐	☐	☐
4.	Is there congruity between the research methodology and the representation and analysis of data?	☐	☐	☐	☐
5.	Is there congruity between the research methodology and the interpretation of results?	☐	☐	☐	☐
6.	Is there a statement locating the researcher culturally or theoretically?	☐	☐	☐	☐
7.	Is the influence of the researcher on the research, and vice- versa, addressed?	☐	☐	☐	☐
8.	Are participants, and their voices, adequately represented?	☐	☐	☐	☐
9.	Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	☐	☐	☐	☐
10.	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	☐	☐	☐	☐

臨床研究處處可以有偏誤、干擾及錯誤



結論

1. **Validity (Reliability) 效度/信度: JBI-研究方法的探討(決定實證等級)**
2. **Importance (Impact) 重要性/效益: 研究結果的分析(此結果是否有意義)**
3. **Practice (Applicability)** 臨床適用性:研究結果能否應用於照顧的病人

謝謝聆聽