Evidence-Based practice(EBP): Content, Concerns, and Challenges

吳麗敏教授

高雄醫學大學護理學系

Li-Min Wu, RN, PhD, Professor School of Nursing, KMU Office Room: N422

TEL: 3121101-2814

E-mail: painting@kmu.edu.tw

What is the evidence-based Nursing?

• Evidence-based practice (EBP) is a problemsolving approach to the delivery of health care that integrates the best evidence from studies and patient care data with clinician expertise and patient preferences and values(Fineout-



Evidence Based Nursing/Practice

- Evidence-based decision-making is a continuous interactive process involving the explicit(明確), conscientious(認真) and judicious(審慎) consideration of the best available evidence to provide <u>Care-Position Statement</u> by Canadian Nurses' Association
- In increasing numbers, nurses as members of interdisciplinary and transdisciplinary teams are implementing evidence-based practice (EBP) changes(Worral PS, 2009).

The beginnings of EBP

- EBP movement start 1972
 - Dr. Archie Cochrance (British epidemiologist)
 - Low-birth-weight premature died needlessly
 - RCT----support the effectiveness of administering corticosteroids to high-risk women
 - Reduced the odds of premature infant death 50% to 30%
- Cochrance Center was established in Oxford in 1992
- Cochrance Collaboration 2003
- Nursing
 - Stetler model/ DiCenso et al, Model/ Iowa model/ Rosswrum and Larrabee model
 - Mentorship model for the implementation of EBP
 - ARCC model
 - Clinical scholar Model

國際實證組織-1

• 目前主要的國際實證組織有四個

實證組織	國家	目的與網址		
JBI	澳洲	實證統合、實證知識轉譯(臨床指引)、實證應用		
		https://joannabriggs.org/		
Cochrane	英國	實證統合 https://www.cochranelibrary.com/		
Campbell collaboration	英國	實證統合 https://campbellcollaboration.org/		
Guideline international	蘇格蘭	實證知識轉譯 (臨床指引) https://g-i-n.net/		
network (GIN)				

- 各自發展的獨特目的
- 四個組織都致力於推廣實證研究方法,開設實證 短期認證課程,遍佈全球
- JBI全球有50多個國家參加JBI的組織,共有70多個合作中心 (https://joannabriggs.org/global-reach/collaboration)。在台灣有陽明大學台灣實證卓越中心。

國際實證組織-2

- JBI 為澳洲的國際實証組織。
 - https://joannabriggs.org/
- Cochrane Nursing 為Cochrane 的護理組織,由JBI人員負責管理。
 - https://nursing.cochrane.org/homepage
- •國立陽交大學台灣實証中心,為JBI在台灣的一個實証卓越合作中心
 - Fb
 - 。台灣實證卓越中心http://con.nycu.edu.tw/



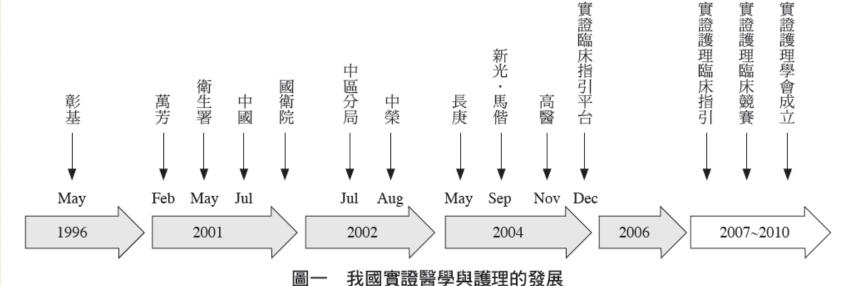
JBI 資源簡介

- JBI於1996年創立於南澳皇家阿德雷德醫院
- 全球34個國家成立70個合作中心
- 主要發展實證統合、實證知識轉換,及 實證應用的相關知識與實證軟體及課程
- Taiwan 在2003年經JBI認可於國立陽明 大學成立台灣實證卓越中心

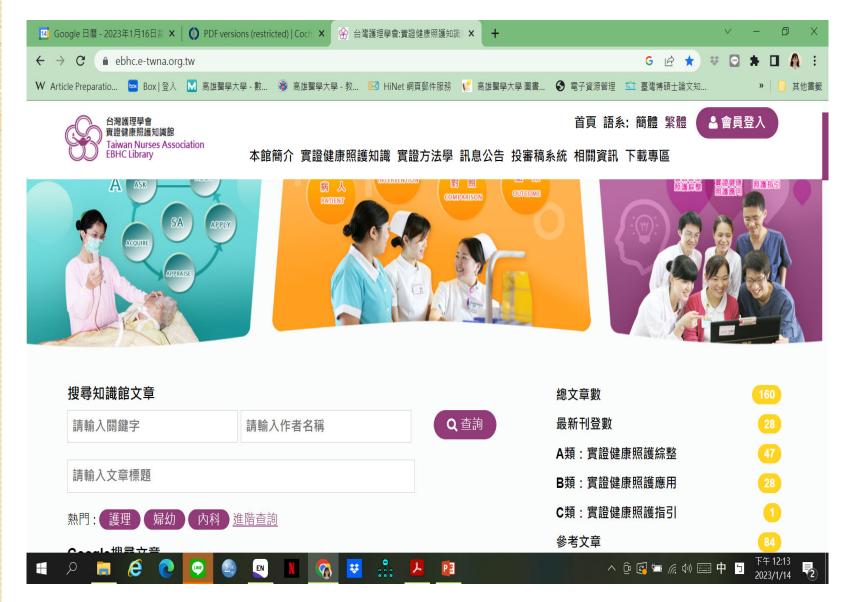
台灣實證醫學與護理的發展

• 實證健康照護

利用既有的時間,明確的提供面臨的臨床問題,有效運用最強的研究證據、結合專家意見與尊重病人價值觀,在臨床決策的整合,實行醫療措施

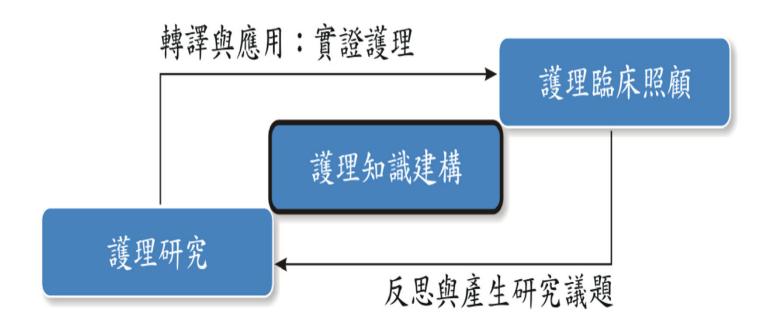


https://www.ebhc.e-twna.org.tw



護理研究臨床照護與護理知識 建構的關係

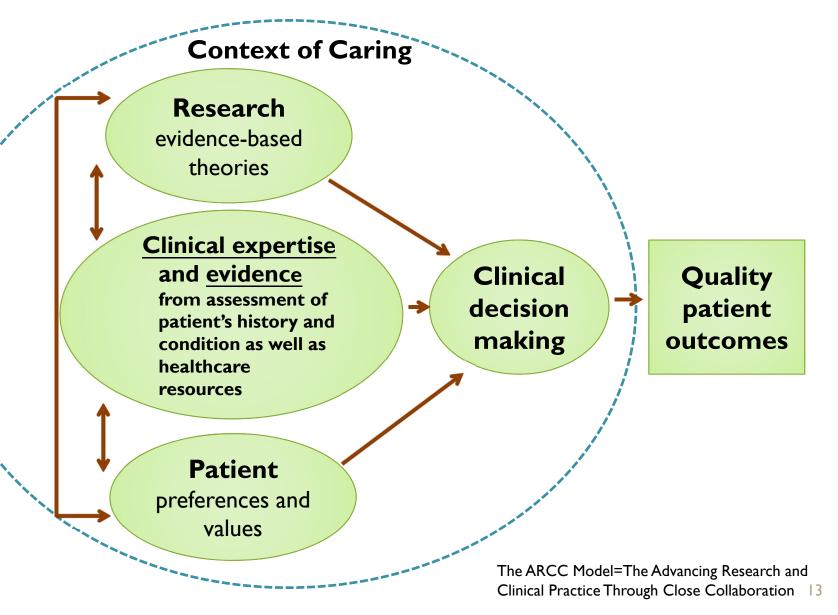
持續護理科學發展



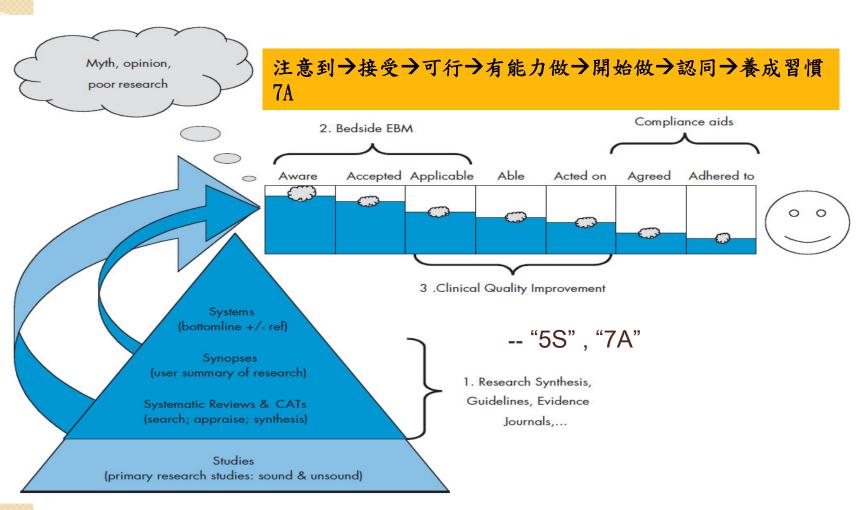
Evidence-Based Practice, EBP (實證實務)

- Definition
 - Combining research, organizational experiences, clinical expertise, expert opinion, and patient preferences
- Efficacy (ability to reach a desired results)
- Efficiency (the achievement of ability to produce the desired results)

Evidence-based practice achieves the best outcomes when accomplished in a context of caring



The paths from research to improved health outcomes (知識轉譯地圖—5S, 7A)



Glasziou P, Haynes B. The paths from research to improved health outcomes. ACP Journal Club 2005;142(2):A8-10.

 Jordan, Zoe PhD; Lockwood, Craig PhD; Munn, Zachary PhD; Aromataris, Edoardo PhD. The updated Joanna Briggs Institute Model of Evidence-Based Healthcare. International Journal of Evidence-Based Healthcare 17(1):p 58-71, March 2019. | DOI: 10.1097/XEB.0000000000000155 HOW TO START TO CONDUCT AN EBP

Selected EBP Process Model

TABLE 1. Selected EBP Process Models

Model	Steps/Phases/Process
DiCenso, Cullum, Ciliska, and Guyatt (2005) model	(1) Asking the question
	(2) Compiling the evidence
	(3) Planning a change
	(4) Integrating skills and experience
lowa model (Titler, 2002)	(1) Generate the question from either a problem or new knowledge
	(2) Determine relevance to organizational priorities
	(3) Develop a team to gather and appraise evidence
	(4) Determine if the evidence answers the question
	(5a) If there is sufficient evidence, pilot the change in practice
	(5b) If there is insufficient evidence, generate evidence through research
	(6) If change is initiated based on the evidence, deem
	appropriateness of change to practice
	(7) If appropriate, institute change
	(8) Evaluate structure, process, and outcome data
	(9) Disseminate results
Rosswurm and Larrabee (1999) model	(1) Assess needs of stakeholders
	(2) Build relationships and make connections between
	nursing intervention and outcome
	(3) Synthesize the gathered evidence
	(4) Plan for the evidence-based change in practice
	(5) Implement the plan and evaluate the implementation
	(6) Maintain the change
Stetler (2001) model	Phase 1: Preparation
	Gather evidence; look for confounding influences
	Phase 2: Validation
	Appraise and synthesize evidence
	Phase 3: Comparative evaluation/Decision making
	Determine ability of evidence to answer the question
	Phase 4: Translation/Application
	If there is sufficient evidence, implement it either formally or informally
	Phase 5: Evaluation
	Evaluate whether evidence implementation sufficiently addressed the given issue

 Example: The Johns Hopkins Nursing Evidence-based Practice Model

The Johns Hopkins Nursing Evidence-based Practice Model

Practice

Internal Factors

Culture environment
Equipment/supplies
Staffing
Standards

Research

- •Experimental
- Quasi-experimental
- Non-experimental
- Qualitative

Non-Research

- Organizational experience
- -Quality improvement
- -Financial date
- •Clinical expertise
- Patient preference

External factors

Accreditation Legislation

Quality

Measures

Regulation

Standards

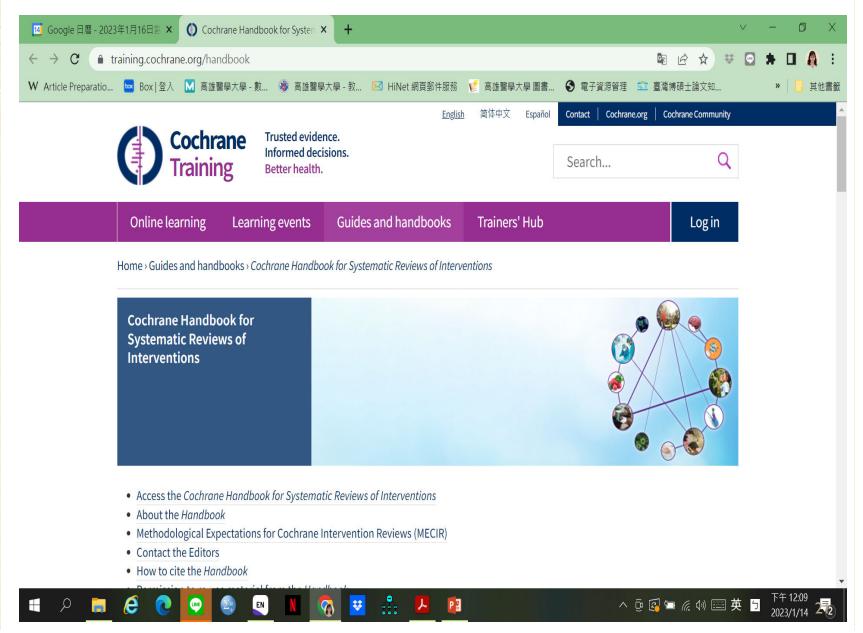
Education

Research

These three world-leading knowledge synthesis

- The Campbell Collaboration (The Campbell Collaboration, 2020),
- 2. Cochrane (Higgins et al., 2019),
- 3. Joanna Briggs Institute (JBI; Joanna Briggs Institute, 2017; Stern et al., 2018)

https://training.cochrane.org/handbook/PDF/v6.3



5 Steps of EBP 執行實證護理的步驟(5A)

Practice

5. 評值所執 行的護理措 施(Auditing) improve next

4. 執行實證為

基礎的護理措

施於病人身上

(Applying)

5. Evaluate steps 1-4 and seek ways to time

4. Integrate the evidence into your clinical decision making

Audit 5 Steps of Evidence-Based

Appraise 3. Critically appraise the evidence for validity,

Apply

1. Convert information need into an answerable clinical question

Clinical

decision

required

Ask

Acquire

1. 提出一個 可以實證回 答的問題 (Asking)

2. Track down best evidence for answering the question

2. 尋找文獻證 據(Acquiring)

3. 嚴格評析文獻(Appraising)

Adapted from Sackettet al 2011, Evidence-based medicine: how to practice and teach EBM

impact & applicability

步驟一:提出一個可以實證回

答的問題

• ASKING THE CLINICAL QUESTIONS

Recommendation #1: Determining why (and if) a knowledge synthesis should be conducted and formulating one or more review question(s)

什麼是好的問題?



* ASK AN ANSWERABLE QUESTION

提出一個可以回答的問題

常見的臨床問題

- 護理措施的成效
 - 。溫水拭浴有用嗎?
 - 。 戴口罩可以降低感染嗎?
- 問題的導因或危險因子
 - 。在那些情境下病患得到感染的機會高?
 - 。早產兒的危險因子為何?
- 確認護理問題的工具或策略有關
 - 。如何及早發現自殺傾向的病人?

Identify an EBP question-I

- First explore the literature in the field of interest. 什麼是我們真正想要知道的?

gap

- 相關研究證据 /dentify the
- 有顯著的 knowledge
- 與醫療品員
- 醫療照護品
- 對醫療資源有緣
- 與現行的新科技審查 估具互補功能
- 與國家重點施政目標相關
- 有助於改進醫療照護之公平性
- 臨床行為上有極大差異或爭議的項目

fit)

▶議相關議題

垦礎者)

Identify the knowledge gap

- Is the last update of the identified knowledge synthesis more than 3 years old?
- Are there <u>conflicting results or ambiguities</u> in the findings of previous knowledge syntheses?
- Are there flaws or areas for improvement regarding the methods used for searching, selecting, critical appraisal, or synthesis?
- Is there a specific gap in terms of population, intervention, comparator, outcome, study type, or paper type that has not been addressed?

RECOMMENDATION #2:
SELECTING THE APPROPRIATE
TYPE OF KNOWLEDGE
SYNTHESIS

Common knowledge synthesis types

Table S1

Common Knowledge Synthesis Types, Definitions, Methodological Guidance, and Reporting Standards

KNOWLEDGE SYNTHESIS TYPES AND DEFINITIONS	EXAMPLE OF QUESTION OR OBJECTIVE	METHODOLOGICAL GUIDANCE	REPORTING STANDARDS
NARRATIVE REVIEW Narrative reviews "attempt to identify what has been written on a subject or topic. [] Narrative reviews are usually selective in that they do not involve a systematic and comprehensive search of all of the relevant literature. [] they survey only that literature and evidence that are readily available to the researchers." (Paré et al., 2015, p. 185)	"Summarize the self-management strategies used by young adults (18–39 years of age) who have undergone hematopoietic stem cell transplantation as a treatment for leukemia or lymphoma." (Vinette et al., 2021, p. 470)	Booth et al. (2016) Dijkers (2009) Gregory and Denniss (2018)	None at time of publication
INTEGRATIVE REVIEW Integrative reviews "summarize past empirical or theoretical literature to provide a more comprehensive understanding of a particular phenomenon or healthcare problem." (Whittemore & Knafl, 2005, p. 546)	"To describe the underlying discourse in the literature on the "good death" in Western societies." (Cottrel and Duggleby, 2016, p. 686)	 Toronto and Remington (2020) Torraco (2016) Whittemore and Knafl (2005) 	None at time of publication
SCOPING REVIEW Scoping reviews "can be used to map the key concepts that underpin a field of research, as well as to clarify working definitions, and/or the conceptual boundaries of a topic." (Peters et al., 2020)	"Map features that promote fidelity and authenticity in simulation-based health professional education." (Lavoie et al., 2020, p. 24)	 Arksey and O'Malley (2005) Levac et al. (2010) Peters et al. (2020) 	PRISMA for scoping reviews (PRISMA-ScR) (Tricco et al., 2018)
QUALITATIVE META-SYNTHESIS Qualitative meta-syntheses aim to integrate and interpret the findings of qualitative studies to provide a new perspective on a complex phenomenon (Hannes & Lockwood, 2012).	"What do health practitioners perceive enhances their readiness to address domestic violence and abuse?" (Hegarty et al., 2020, p. 3)	Hannes and Lockwood (2012)	 Enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) (Tong et al., 2012)
DESCRIPTIVE REVIEW Descriptive reviews "seek to determine the extent to which a body of empirical studies in a specific research area supports or reveals any interpretable patterns or trends with respect to pre-existing propositions, theories, methodologies or findings." (Paré et al., 2015, p. 186)	"What is the content of behavior change counseling training programs assessed with nurses and nursing students?" (Fontaine et al., 2019, p. 38)	None at time of publication	None at time of publication

Common Clinical Question Types-I

	Type or Domain	Explanation	Types of evidence to answer the question
	Therapy (Treatment)	Questions about the effectiveness of interventions in improving outcomes in sick patients / patients suffering from some condition. These are the most frequently asked. Among the many treatments offered by clinicians are medications, surgical procedures, excercise, and counseling about lifestyles changes.	Randomised Controlled Trial (RCT)
	Prevention	Questions about the effectiveness of an intervention or exposure in preventing morbidity and mortality. Similar to treatment questions. When assessing preventive measures, it is particularly important to evaluate potential harms as well as benefits.	RCT or Prospective Study

Common Clinical Question Types-2

Type or Domain	Explanation	Types of evidence to answer the question
Diagnosis	Questions about the ability of a test or procedure to differentiate between those with and without a condition or disease.	RCT or Cohort Study
Prognosis (Forecast)	Questions about the probable cause of a patient's disease or the likelihood that he or she will develop an illness.	Cohort Study and/or Case-Control Series
Etiology (Causation)	Questions about the harmful effect of an intervention or exposure on a patient.	Cohort Study
Meaning	Questions about patients' experiences and concerns.	Qualitative Study

提出一個可以實證回答的問題 Asking-PICOT

- Population/ Patient Problem
 - Who is your patient? (Disease or Health status, age, race, sex)
- Intervention:
 - What do you plan to do for the patient? (Specific tests, therapies, medications)
- Comparison
 - What is the alternative to your plan? (ie. No treatment, different type of treatment, etc.)
- Outcome: What outcome do you seek?
 - Less symptoms, no symptoms, full health, etc.
- Time
 - What is the time frame? (This element is not always included.)

可回答的問題

- 問題通常可依廣泛與具體程度
 - 。背景問題 (background question)
 - 。 前瞻問題 (foreground question)
- 結構化更具體且目標更明確的問題
 - 。依據內容的對象
 - 。相關的介入措施
 - 。比較品或對象
 - 。可測量的結果



背景問題 (background question)

- 長期臥床病人好發的併發症是什麼?泌 尿道感染是其中之一嗎?
- 有長期留置導尿管的人為什麼會經常發生泌尿道感染?
- 長期留置導尿管如何引起泌尿道感染?
- 發生率、盛行率
- 發生族群
- 一般性生理、病理或致病原因

背景問題

- Who
 - 。 對象或病患特性,例如,哪種人容易得到泌尿道感染
- What
 - 。 現象、臨床表徵、危險因子等,如,泌尿道感染症狀是什麼
- When
 - 事件發生的時間、疾病好發的年齡、時間、季節等,例如, 留置導尿管何時需要更換
- Where
- 發生的部位、影響的器官與系統、疾病盛行分佈的區域等,例如,尿管應該固定在哪裡;
- Why
 - 。 病因、事件發生原因等,例如,什麼會引起泌尿道感染
- How
 - 。 頻率、生理、病理、毒理學等,致病機轉、遺傳機制、基因 突變過程等,例如,長期臥床病人發生泌尿道感染的頻率多 高,細菌如何藉由導尿管感染泌尿道



前瞻問題 (Foreground question)

- •制定問題的架構(A framework for formulating questions)
 - PICO
 - 。明確、聚焦、方便找到關鍵字

The PICO framework, devised by Sackett et al., (1997), is a useful method for clarifying exactly what your questions is



如何回答問題

從初步問題到聚焦的問題

臨床情況:一位 16歲女孩,車禍後使用呼吸器,

由外院轉入,背後有5*5*5的壓瘡

• 初步的問題 我如何避免壓瘡惡化?

• 聚焦的問題 使用呼吸器之重症青少女(P),凝膠床墊(I)增加 換藥次數,是否比氣墊床和常規換藥(C)能預防 皮膚血循不良及受損(O)

提出一個可以實證回答的問題 Asking-PICOT

- Population/ Patient Problem
 - Who is your patient? (Disease or Health status, age, race, sex)
- Intervention:
 - What do you plan to do for the patient? (Specific tests, therapies, medications)
- Comparison
 - What is the alternative to your plan? (ie. No treatment, different type of treatment, etc.)
- Outcome: What outcome do you seek?
 - Less symptoms, no symptoms, full health, etc.
- Time
 - What is the time frame? (This element is not always included.)



EXERCISE 1:

FIND A GOOD QUESTIONS

利用5W1H

RECOMMENDATION #3:
DEVELOPING A SEARCH
STRATEGY
THAT BALANCES
SENSITIVITY AND
SPECIFICITY

Recommendation #3: Developing a search strategy that balances sensitivity and specificity

Low sensitivity, Good sensitivity High sensitivity, High specificity and specificity Low specificity Locating a small number of Locating a reasonable Locating a large number of mostly relevant papers, but at number of papers while papers, including a potentially the risk of omitting other minimizing the risk of high number of irrelevant ones relevant papers omitting relevant papers Specificity Sensitivity

FIGURE 1 Balance between specificity and sensitivity in the search strategy

Sensitivity (靈敏度) can be defined as the proportion of all relevant studies on the topic of interest that are retrieved.

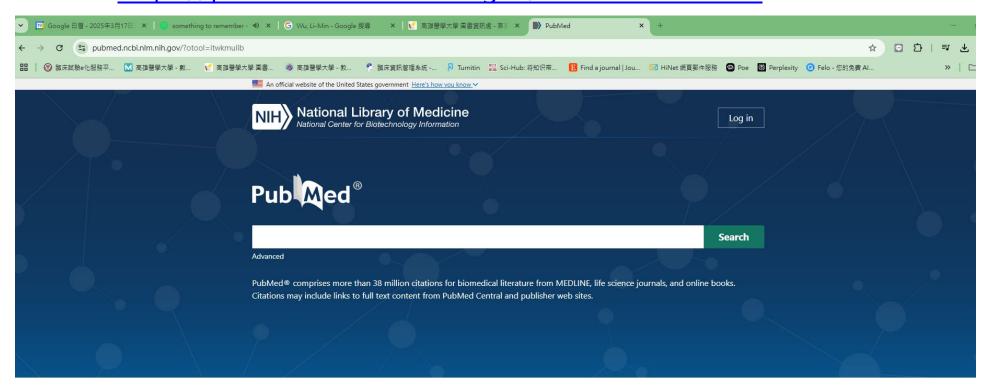
Specificity(特異性) can be defined as the proportion of non-relevant studies on the topic of interest that are not retrieved

步驟二:尋找文獻證據(Acquiring)

- 步驟一
 - Analyzing the questions
 - Search terms
 - Free text (字串)同意字、縮寫字
 - Fear, phobia, distraction, diversion
 - Index terms (索引詞)
 - Combine free text and controlled vocabulary (index) searching
 - MeSH
 - Linking word lists (Boolean logic: and, or, not)



- PubMed_MeSH (Medical Subject Headings)
- https://pubmed.ncbi.nlm.nih.gov/?otool=itwkmulib





About PubMed FAQs & User Guide Finding Full Text



Find

Advanced Search
Clinical Queries
Single Citation Matcher



Download

E-utilities API

FTP

Batch Citation Matcher



ExploreMeSH Database
Journals

☐ Do not include MeSH terms found below this term in the MeSH hierarchy.



MeSH

MeSH

MeSH

MeSH

MeSH

See more...

Neoplasms

Anxiety

Q anxiety (15)

Q Cancer (406)

Q CANCER (406)

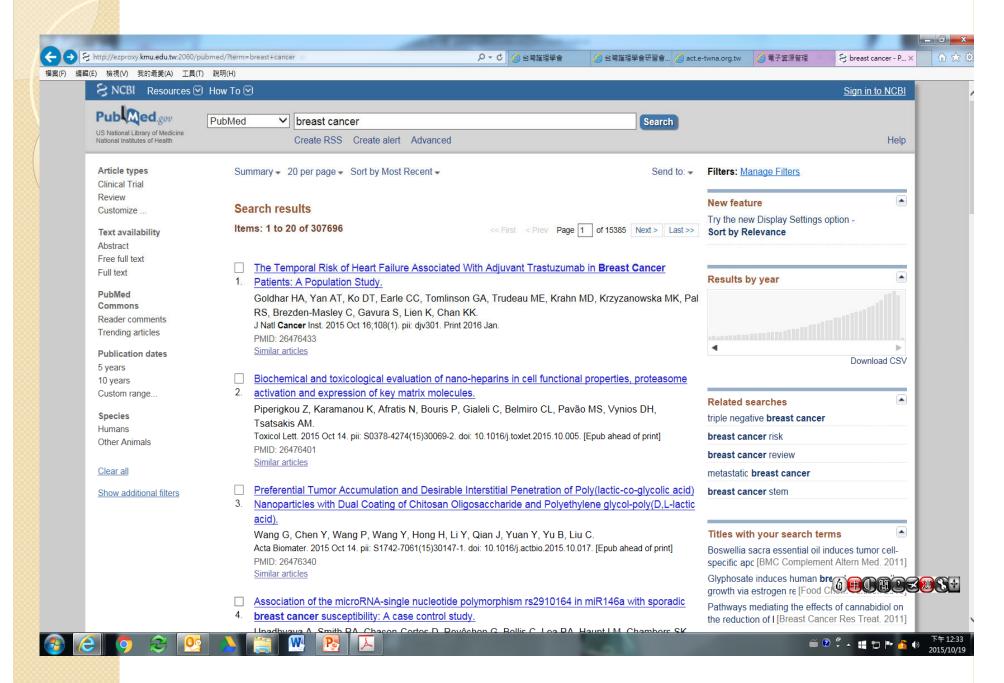
MeSH	MeSH	Cancer Limits Advanced			Search	Help
Full →				Send to: ▼	PubMed Search Builder	•
Neoplasms						
New abnormal growth of tis compared to benign neopla Year introduced: /diagnosis	sms.		of anaplasia and have the properties of invasion a	and metastasis,		10
PubMed search builder opti Subheadings:	ions				Add to search builder AND ➤ Search PubMed]
□blood		embryology	□ pathology)	You Tube Tutorial
☐ blood supply		enzymology	□ physiopathology		Related information	•
cerebrospinal flui	id	 epidemiology 	prevention and control		PubMed	
chemically induce	ed	ethnology	psychology		PubMed - Major Topic	
□ chemistry		etiology	☐ radiotherapy		Publiked - Major Topic	
classification		genetics	☐ rehabilitation		Clinical Queries	
□ complications		☐ history	☐ surgery		NLM MeSH Browser	
□ congenital		\square immunology	☐ therapy		dbGaP Links	
diagnosis diagnosis		metabolism metabolism	☐ ultrastructure		dDGAP LINKS	
diagnostic imagir	ng	microbiology	urine		MedGen	
diet therapy		mortality	veterinary			
drug therapy		□ nursing	□ virology			
economics		parasitology			Recent Activity	<u></u>
Restrict to MeSH Major	Topic.					Turn Off Clear

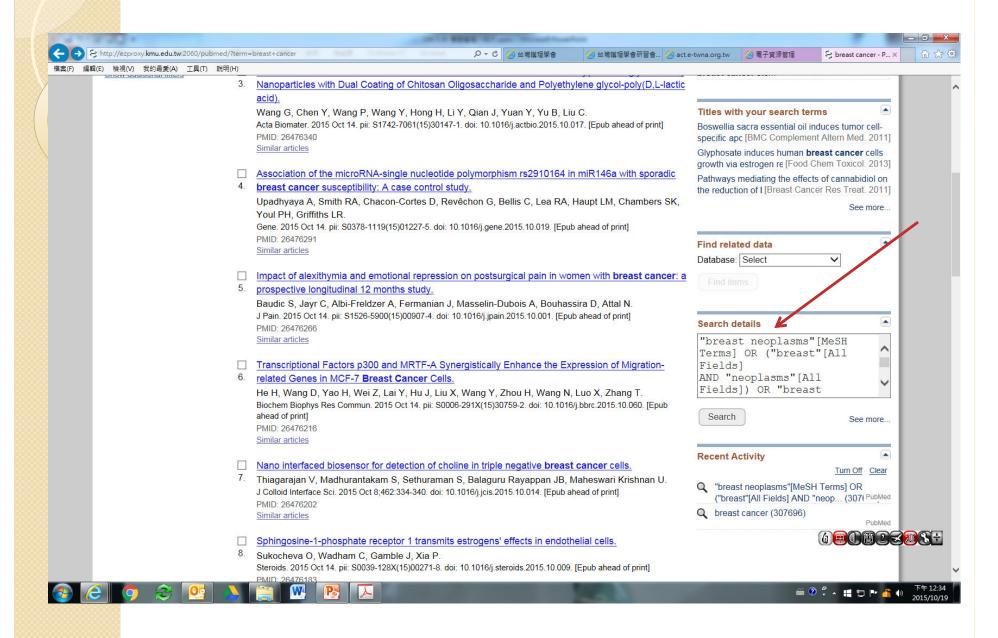
Tree Number(s): C04

MeSH Unique ID: D009369

Entry Terms:

- Tumors
- Neoplasia
- Neoplasias
- Neoplasm
- Tumor
- Cancer
- Cancers
- Malignant Neoplasm





步驟二:尋找文獻證據(Acquiring)續

• 步驟 __

- Database searched
- Keywords used for each database
- Numbers of articles initially retrieved
- Exclusion criteria
- Number of relevant articles identified
- Numbers of relevant articles used
- Additional search methods
- Last name / documents

Where to search first

• The 6s hierarchy of pre-appraised evidence (DiCenso et al., 2009)

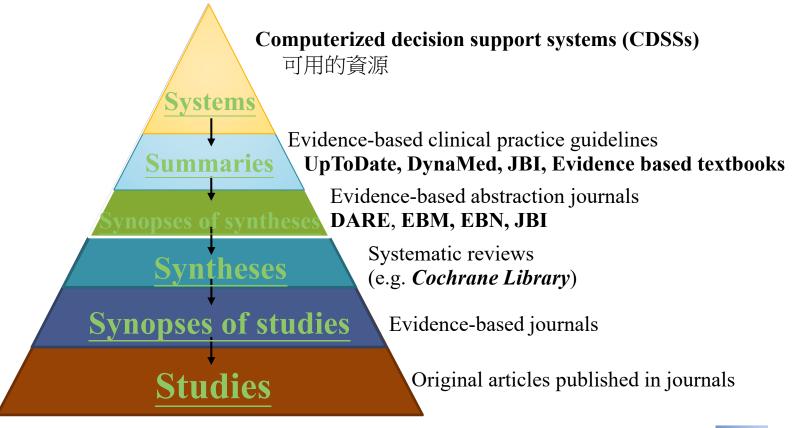


Figure 1 The 6S hierarchy of pre-appraised evidence (DiCenso et al. 2009).



Systems (系統)

- Define
 - Integrated decision support for disease or condition arranged by Recourses and Clinical Evidence
- Current evidence-based guidelines for care
- Client-specific recommendations
- Clinical decision support system



Summaries (總結)

- 提供明確且嚴謹的方法發展臨床指引機構
 - Scottish Intercollegiate Guidelines Network (SIGN)

http://www.sign.ac.uk/

- National Guideline Clearinghouse
- Joanna Briggs Institute (JBI)
- Clinical evidence http://clinicalevidence.
- EBM Guidelines: Evidence Based Medicine http://ebmg.wily.com/ebmg/ltk..koti
- BMJ Clinical Evidence http://clinicalevidence.bmj.com/ceweb/index.jsp



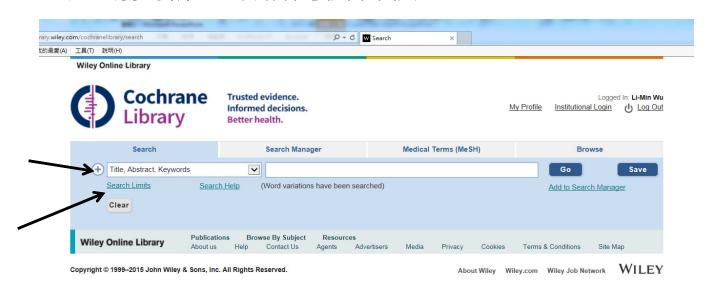
Synopses of syntheses(統整精要)

- 系統性回顧
 - 。利用有系統且明確的方法辨識、選擇、嚴 格評選文獻
 - 。統整特定問題的文獻資料
- Evidence-Based Nursing http://ebm.bmj.com/



Syntheses (統整)

- The Cochrane library
 - 。醫療調查照護介入效果的系統性回顧
 - 。定期更新,嚴格同儕審核



The Campbell Collaboration

社會和行為導向介入措施的實證問題



Synopses of studies(研究精要)

- Define
 - What the evidence is across several studies, along with an expert telling you its strengths and potential practice changes
- Evidence-based abstraction journals
- MEDLINE
- PubMed
- CINAHL
- PsycNFO
- CEPS



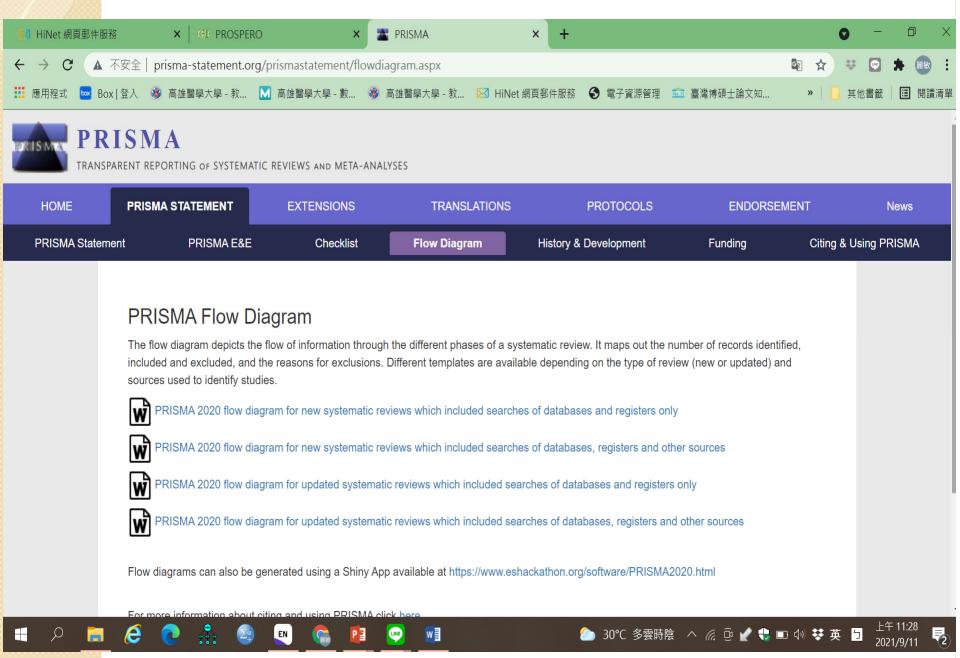
Studies

- 個別研究
 - What was done in this study?
- 資料庫
 - MEDLINE
 - PubMed
 - CINAHL
 - PsycNFO
 - CEPS
- 選擇資料庫取決於各主因素
 - 特定主題
 - 可得性
 - 搜尋的難易度
- 資料搜尋的廣度

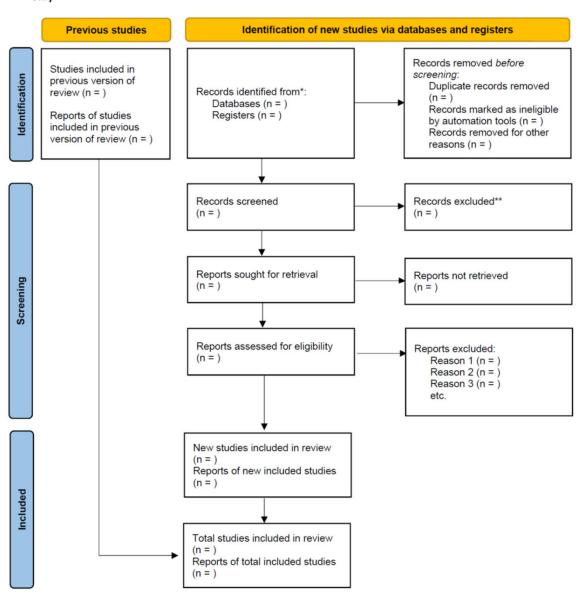


2.2清楚敘述檢索策略及利用各種 檢索功能 (EBSCO)





PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases and registers only



PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases, registers and other sources

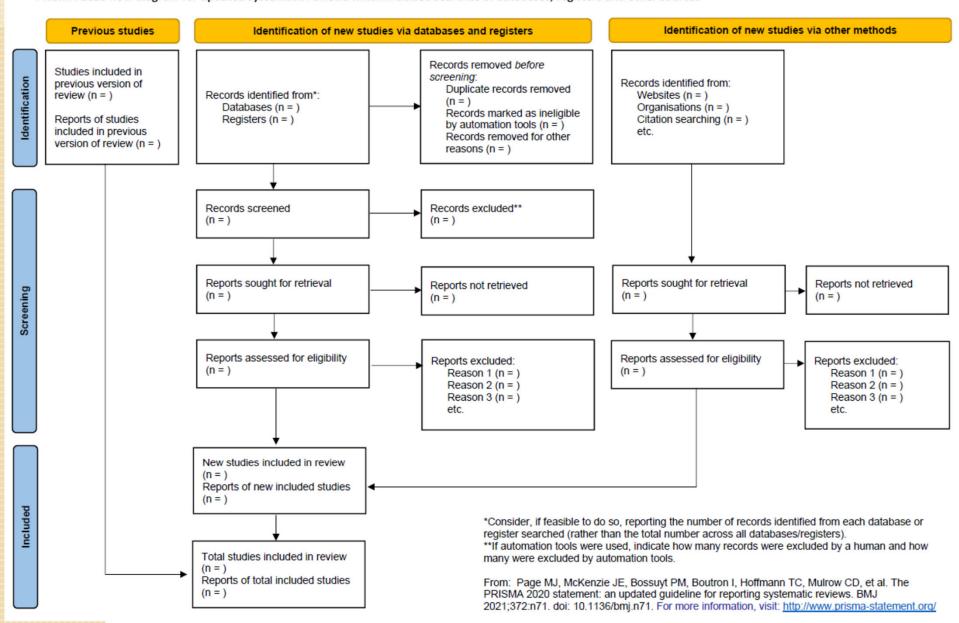
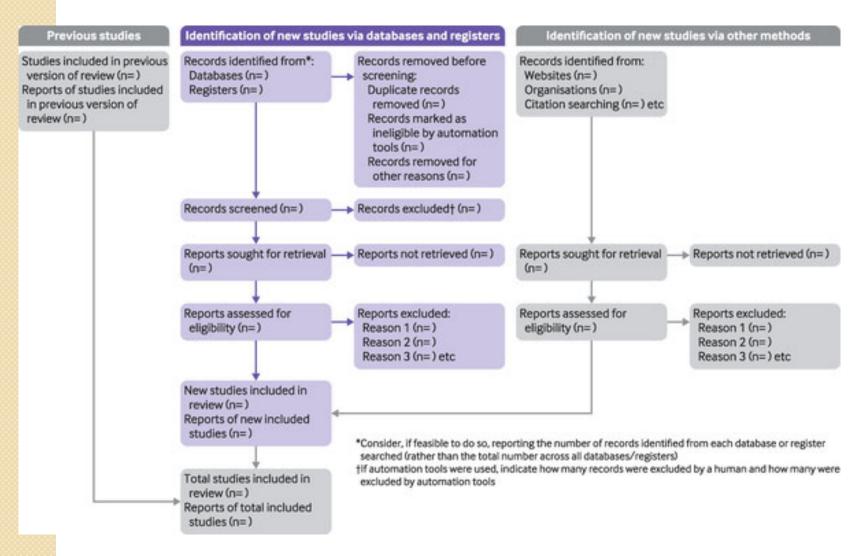
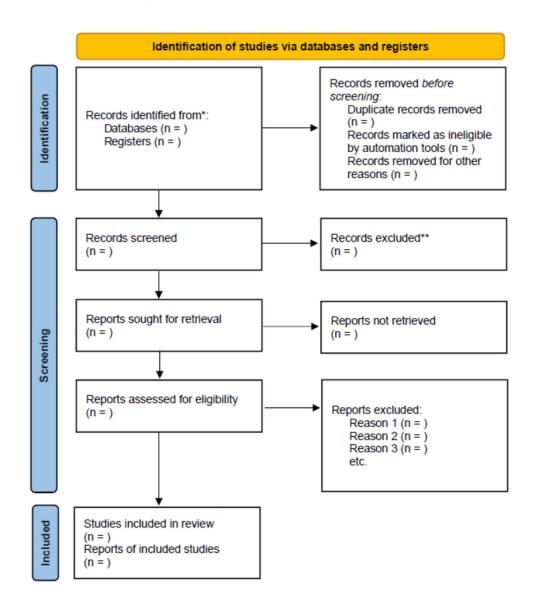


Fig I. PRISMA 2020 flow diagram template for systematic reviews.



Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, et al. (2021) The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. PLOS Medicine 18(3): e1003583. https://doi.org/10.1371/journal.pmed.1003583

https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1003583



步驟三:嚴格評析文獻(Appraising)

• 使用量性研究的證據

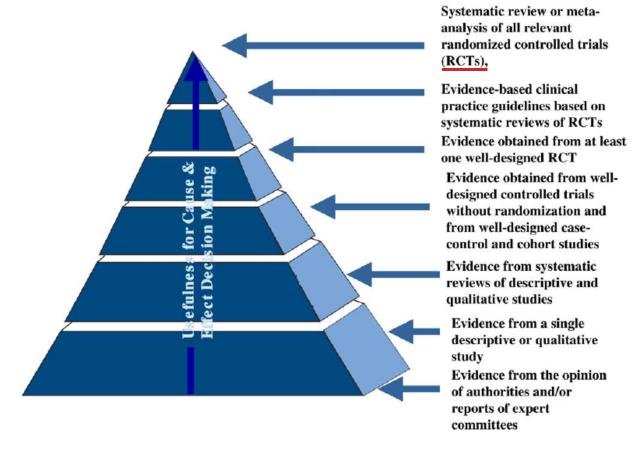


Figure 2. Levels of evidence for answering clinical questions about the effectiveness of interventions.

步驟三:嚴格評析文獻(Appraising)

• 使用質性研究的證據

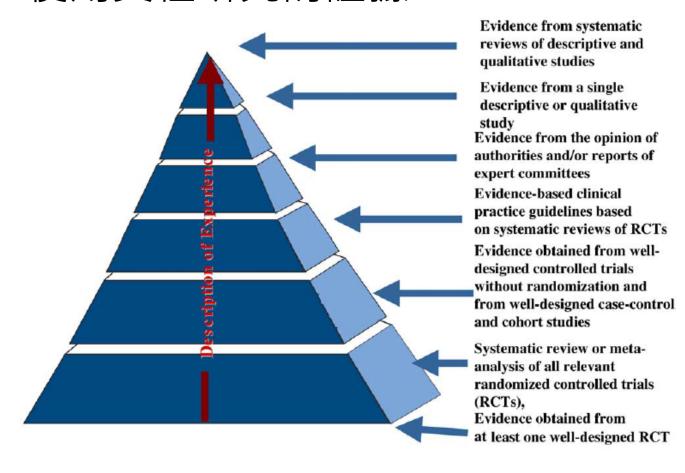


Figure 3. Levels of evidence for answering clinical questions about meaning.

評讀工具

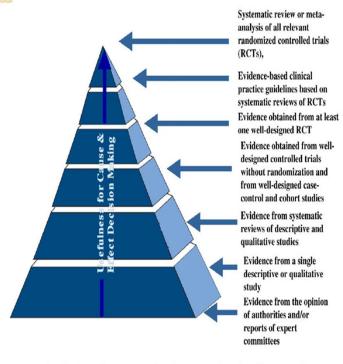
	00/14-4-	ВОТ	0-11	0	01	Diamartia	D
評讀工具	SR/Meta analysis	RCT	Cohort study	Case control	Observation study	Diagnostic test	Prognosis
CASP	V	>	V	>		>	
UNIVERSITY OF OXFORD CEBM	V	>				>	V
PRISMA	V						
STROBE			>	>	V		
CONSORT		>					
Jadad Scale		>					

CASP: Critical Appraisal Skills Programme CEBM: Centre for Evidence Based Medicine

PRISMA: Preferred reporting items for systematic reviews and meta-analysis STROBE: Strengthening the Reporting of Observational Studies in Epidemiology

CONSORT: CONsolidated Standards of Reporting Trials

虚實真假





• 證據等級 研究設計

#

證據品質

研究設計+執行+結果

Centre for Evidence-Based Medicine 計算工具-CEBM



STUDY WITH US RESOURCES

RESEARCH NEWS & VIEWS EVENTS

Search Q

♠ / Resources / EBM tools / Critical Appraisal tools

Critical Appraisal tools

Critical appraisal worksheets to help you appraise the reliability, importance and applicability of clinical evidence.

Critical appraisal is the systematic evaluation of clinical research papers in order to establish:

- 1. Does this study address a clearly focused question?
- 2. Did the study use valid methods to address this question?
- 3. Are the valid results of this study important?
- 4. Are these valid, important results applicable to my patient or population?

If the answer to any of these questions is "no", you can save yourself the trouble of reading the rest of it.

This section contains useful tools and downloads for the critical appraisal of different types of medical evidence. Example appraisal sheets are provided together with several helpful examples.

Critical Appraisal Worksheets

English

- Systematic Reviews Critical Appraisal Sheet
- Diagnostics Critical Appraisal Sheet
- Prognosis Critical Appraisal Sheet
- Randomised Controlled Trials (RCT) Critical Appraisal Sheet
- Critical Appraisal of Qualitative Studies Sheet
- IPD Review Sheet











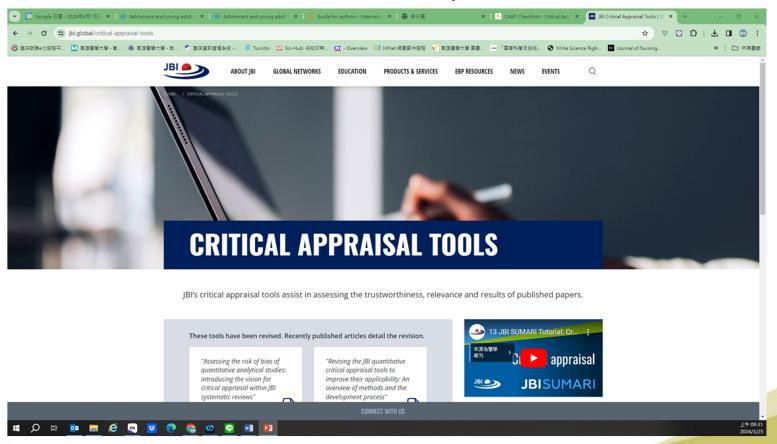








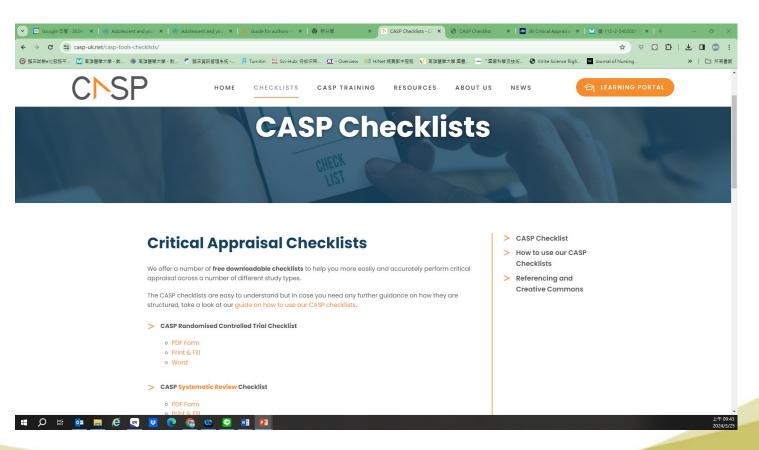
- How to cite:
- Barker TH, Stone JC, Sears K, Klugar M, Tufanaru C, Leonardi-Bee J, Aromataris E, Munn Z. The revised JBI critical appraisal tool for the assessment of risk of bias for randomized controlled trials. JBI Evidence Synthesis. 2023;21(3):494-506



	- · · · · · · · · · · · · · · · · · · ·					_	
1月	2023_Checklist_for ×					?) 🌲
☆ 6	3 /16	91.7% -	D On				
Inte	rnal Validity	Choice - Comments/Justification	Yes	No	Unclear	N/A	^
Bias	related to selection and allocation						
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?						
Bias	related to administration of intervention/exposure						
4	Were participants blind to treatment assignment?						
5	Were those delivering the treatment blind to treatment assignment?						
6	Were treatment groups treated identically other than the intervention of interest?						
Bias	related to assessment, detection and measurement of t	the outcome					
7	Were outcome assessors blind to treatment assignment?		Yes	No	Unclear	N単英	
	Outcome 1						
							下午 01.27



- How to cite:
- Critical Appraisal Skills Programme. (2021). CASP (insert name of checklist i.e. Randomised Controlled Trial) Checklist. [online] Available at: insert URL. Accessed: insert date accessed.



文獻評讀技巧- VIP三部曲

- 效度 Validity(Representative, Ascertainment, Measurement)
 - 研究**方法**的探討
 - 我們能相信這篇文獻嗎?
- 重要性/效益 Importance/Impact
 - 研究結果的分析
 - 我們相信它,但這個結論重要嗎?



- 臨床適用性 Practice/Applicability
 - 如何在臨床運用
 - 如果我們相信它,這個結論可以應用在我們的病患嗎?

一證據等級標準

Grading articles(證據等級)

• The Oxford 2011 level of evidence

Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence

Question	Step 1		and the second s		Step 5 (Level 5)
	(Level 1*)	(Level 2*)		(Level 4*)	
How common is the			Local non-random sample**	Case-series**	n/a
problem?	surveys (or censuses)	that allow matching to local			
		circumstances**			
Is this diagnostic or	Systematic review	Individual cross sectional	Non-consecutive studies, or studies without	Case-control studies, or	Mechanism-based
monitoring test	of cross sectional studies with	studies with consistently	consistently applied reference standards**	"poor or non-independent	reasoning
accurate?	consistently applied reference	applied reference standard and		reference standard**	
(Diagnosis)	standard and blinding	blinding			
What will happen if	Systematic review	Inception cohort studies	Cohort study or control arm of randomized trial*	Case-series or case-	n/a
we do not add a	of inception cohort studies	•		control studies, or poor	
therapy?	,			quality prognostic cohort	
(Prognosis)				study**	
Does this	Systematic review	Randomized trial	Non-randomized controlled cohort/follow-up	Case-series, case-control	Mechanism-based
intervention help?	of randomized trials or n-of-1 trials	or observational study with	study**	studies, or historically	reasoning
(Treatment Benefits)		dramatic effect		controlled studies**	
What are the	Systematic review of randomized	Individual randomized trial	Non-randomized controlled cohort/follow-up	Case-series, case-control,	Mechanism-based
COMMON harms?	trials, systematic review	or (exceptionally) observational	study (post-marketing surveillance) provided	or historically controlled	reasoning
(Treatment Harms)	of nested case-control studies, n-	study with dramatic effect	there are sufficient numbers to rule out a	studies**	
	of-1 trial with the patient you are		common harm. (For long-term harms the		
	raising the question about, or		duration of follow-up must be sufficient.)**		
	observational study with dramatic				
	effect				
What are the RARE	Systematic review of randomized	Randomized trial	•		
harms?	trials or n-of-1 trial	or (exceptionally) observational			
(Treatment Harms)		study with dramatic effect			
()		,			
Is this (early	Systematic review of randomized	Randomized trial	Non -randomized controlled cohort/follow-up	Case-series, case-control,	Mechanism-based
	trials			or historically controlled	reasoning
worthwhile?				studies**	
(Screening)					
(

^{*} Level may be graded down on the basis of study quality, imprecision, indirectness (study PICO does not match questions PICO), because of inconsistency between studies, or because the absolute effect size is very small; Level may be graded up if there is a large or very large effect size.

Level of evidence, 2011 Scottish Intercollegiate Guidelines Network

等級	文獻實證類別
1++	隨機對照實驗(randomized control trial,RCTs)之高品質之統合
	分析(meta analysis)、系統性文獻回顧(systematic reviews),或
	該隨機控制試驗之設計偏差(bias)極低。
1+	執行良好之隨機對照試驗之統合分析、系統性文獻回顧,或
	該隨機對照試驗之設計偏差低。
1-	隨機對照試驗之統合分析、系統性文獻回顧,或該隨機對
	照試驗之設計偏差高。
2++	I. 病例對照研究(case control study)或世代研究(cohort
	study)之高品質系統性文獻回顧。
	2. 高品質的病例對照研究法及世代研究法可降低干擾、偏
	差機率,並且具有高度的因果相關。
2+	病例對照研究或世代研究之設計良好的系統性文獻回顧。
2-	研究設計偏差較高之病例對照研究或世代研究。
3	非分析性之研究,例如:個案報告。
4	專家意見

Agency for Healthcare Research and Quality (AHRQ)

證據等級				
證據等級Ⅰ	所有相關的隨機對照試驗(RCTs)			
證據等級Ⅱ	至少有一項設計精良的隨機對照試驗			
證據等級Ⅲ	設計精良的非隨機對照試驗			
證據等級Ⅳ	設計精良的病例對照研究或世代研究			
證據等級Ⅴ	描述性或質性研究			
證據等級Ⅵ	單一描述性或質性研究			
證據等級Ⅶ	當局意見或專家委員會報告			

Grades of Recommendation

(Scottish Intercollegiate Guidelines Network, 2011)

文獻實證等級
1. 至少有一項整合分析、系統性文獻回顧或隨機對照試
驗之實證等級為 ++,且該研究可直接應用於目標群
體(target population);或
2. 隨機對照試驗(RCTs)之系統性文獻回顧或大部分的證
據主體由實證等級為1+之
研究構成,可直接應用於目標群組,或所有的證據都
有一致性的結果。
I. 證據主體由實證等級為2++之研究構成,可直接應用
於目標群體,或所有的證據都有一致性的結果;或
2. 從研究證據等級為 ++或 +外推之結果。
I. 證據主體由實證等級2+之研究構成,可直接應用於目
標群體,或所有的證據都有一致的結果;或
2. 從研究證據等級為2++外推之結果。
I. 證據等級為3或4;或
2. 從研究證據等級為2+外推之結果

Grading articles(證據等級)

- GRADE (Grading of Recommendations, Assessment, Development and Evaluations)
- GRADE is used to rate the body of evidence at the outcome level rather than the study level. (Risk of bias, Imprecision, Inconsistency, Indirectness, Publication bias)
- https://bestpractice.bmj.com/info/toolkit/learn-ebm/what-is-grade/

Table I. GRADE certainty ratings			
Certainty	What it means		
Very low	The true effect is probably markedly different from the estimated effect		
Low	The true effect might be markedly different from the estimated effect		
Moderate	The authors believe that the true effect is probably close to the estimated effect		
High	The authors have a lot of confidence that the true effect is similar to the estimated effect		

GRADE評分系統 證據品質與建議強度分級

證據品質 分級	具體描述
高(A)	非常有把握觀察值接近真實值
中(B)	對觀察值有中等把握:觀察值有可能接近真實值,但也有可能差別很大
低(C)	對觀察值的把握有限:觀察值可能與真實值 有很大差別
極低(D)	對觀察值幾乎沒有把握:觀察值與真實值可能有極大差別
建議強度 分級	具體描述
強(I)	明確顯示介入措施利大於弊或弊大於利
弱(2)	利弊不確定或無論品質高低的證據均顯示利 弊相當

GRADE評分系統 影響證據品質降級因素

- 偏差風險(Risk of bias)
- 不一致(Inconsistence)
- 間接性(Indirectness)
- 不精確性(Imprecision)
- 發表偏差(Publication bias)

GRADE評分系統 影響證據品質升級因素

- 結果顯著(Large effect size)
- 干擾因素可能減少效果(All plausible confounding would reduce a demonstrated effect)
- 證據顯示存在劑量-效應關係
 (Dose-response gradient)

Re-critical Appraisal-I

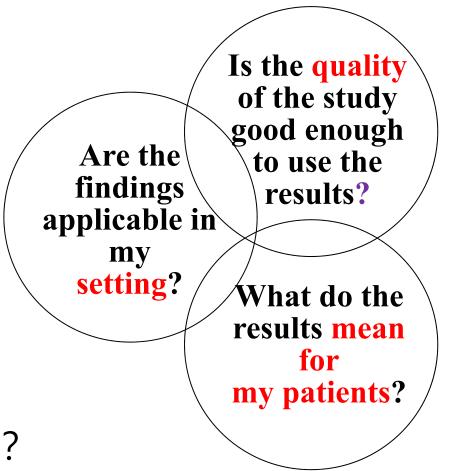
- Methodological evaluation
 - Define criteria
- Synthesis of evidence
- Considered judgment
 - The exercise of judgment based on clinical experience as well as knowledge of the evidence and the methods used to generate it
- Grading system

Re-Critical Appraisal-2

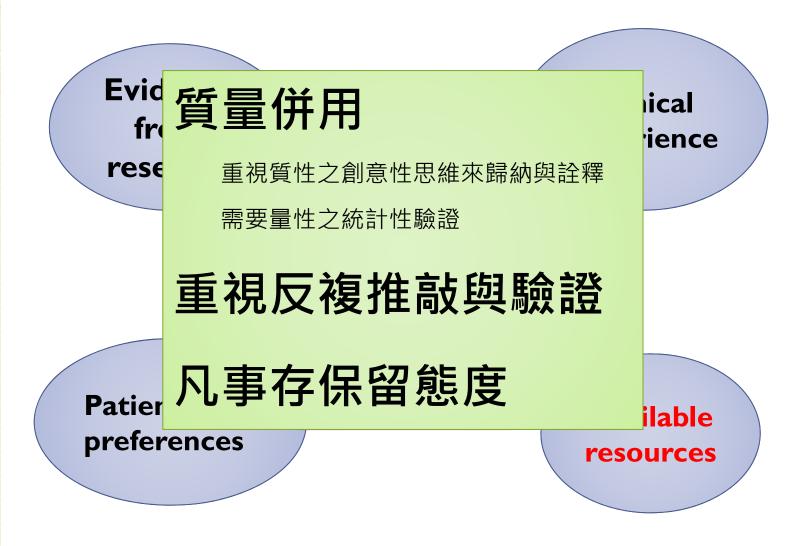
- Are the results of the study or systematic valid?
- What are results? Reliable? Meaningful?
- Are the findings clinically relevant to my patients?
- Limitations
- Advantages/ weak pints
- Cost effects

The three aspects of critical appraisal for evidence-based

- 分析研究品質是否 良好到足以使用研 究結果
- 這些結果是否適合 醫療情境
- 此結果對於病人的 意義為何?病人從 研究中獲得多大的 好處?想法為何?
- 還有哪些替代方案?



An evidence-based Health Care Decision



步驟四:執行實證基礎的護理措施於 病人身上(Applying)

- Changes in patients' level of knowledge
- Changes in the types of clinicians and settings needed
- Advances in medicine
- Advances in information technology
- Changes in reimbursement
- Develop Clinical Practice Guidelines (CPG)
- 修改常規活動用於臨床照顧的對象
- 行政上或其他方面的配合

DOI: 10.1111/wvn.12702

EVIDENCE-BASED IMPLEMENTATION PROJECT



Evidence-based approach to mitigate cumulative stress in pediatric nurses through the development of respite rooms

Aim/Implementation: A project team from three clinical units completed an extensive literature review and identified the need to promote detachment while supporting parasympathetic recovery. Based on this review, leaders from three pediatric clinical units (neonatal intensive care unit, cardiovascular intensive care unit, and acute pulmonary floor) implemented respite rooms.

Outcomes: Follow-up outcomes showed a statistically significant stress reduction. For all shifts combined, the Wilcoxon Signed-Rank Test revealed that perceived stress scores from an 11-point Likert scale (0=no stress and 10=maximum perceived stress) were significantly lower in the post-respite room (Md=3, n=68) compared to in the pre-respite room (Md=6, n=68), Z=-7.059, p<.001, with a large effect size, r=.605. Nurses and other staff frequently utilized respite rooms during shifts.

Implications for Practice: Clinical inquiry and evidence-based practice processes can mitigate cumulative stress and support staff wellbeing. Respite rooms within the hospital can promote a healthy work environment among nurses and promote a self-care culture change. Evidence-based strategies to mitigate cumulative stress using respite rooms are a best practice to promote nurse wellbeing and mitigate cumulative stress.

步驟五:評值所執行的護理措施 (Auditing)

步驟Ⅰ:

- 1.提出適當的問題?
- 2. 提出結構完整的問題?

步驟 2:

- I. 臨床領域中現有的最佳證據來源?
- 2. 搜尋方面變得更有效率?

步驟 3:

- I.利用實證來進行決策,正確應用此研究證據之評讀指引?
- 2.正確、有效率使用評估度量工具?

步驟 4:

- Ⅰ.審慎評估實證結果融入臨床照護中?
- 2.評估病人的喜好,共同制定決策
- 3.向病人解說實證資訊(利弊得失)

We have clinical guidelines BUT....

Critiquing Clinical Practice Guidelines

Guidelines make explicit recommendations and are based upon some evidence. Evaluation includes appraisal of the following items:

http://onsopcontent.ons.org/toolkits/evidence/Process/guidelines.shtml

- The guideline specificity and population to whom it will be applicable.
- All relevant options and outcomes are specified with decision-making points apparent.
- Process to identify, select, and combine evidence is described and makes sense.
- Includes most recent findings (e.g., is current)
- Process of peer review and evaluation specified.
- Recommendations are practical and clinically relevant.
- Recommendations are strong (strength of evidence described).
- Guideline responds to a clinical problem.
- Recommendations are applicable to patients in your current setting.
- Use of recommendations would lead to identifiable outcomes that could be measured.

Dissemination(傳播)

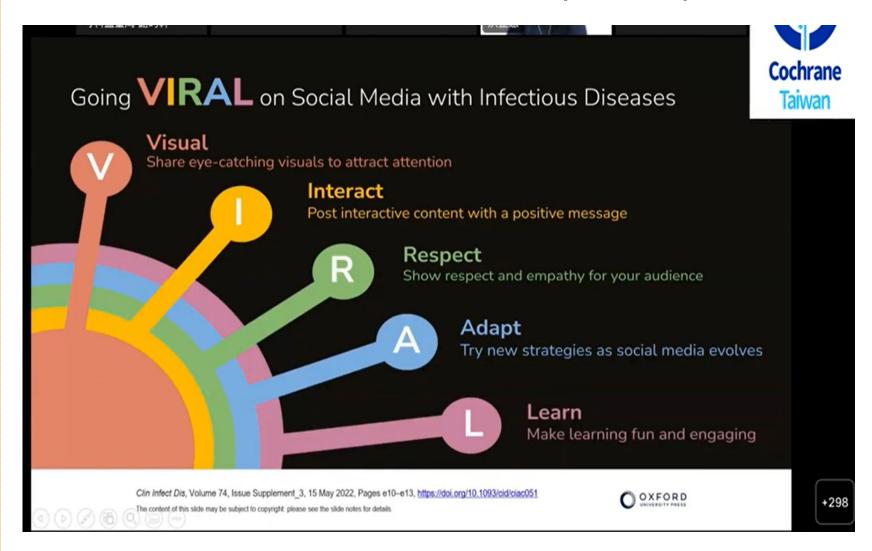
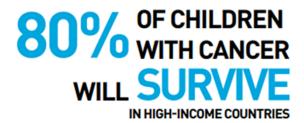
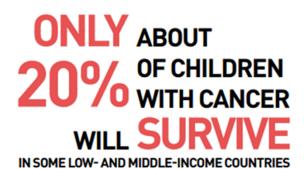


Figure 1: Inequities in outcomes

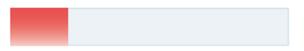












2

Photo credits: American Childhood Cancer Organization

Evaluate outcomes

- How well did it work ?
- How well did it work in my settings?
- Documentation of the evaluation
- Report results of preliminary evaluation to decision maker
- Secure support from decision makers to implement recommended change internally

Conclusion

- Evidence based nursing started in the 1800s with Florence Nightingale.
- EBN is a problem solving approach to clinical decision making.
- EBN integrates providers' clinical expertise with the best external clinical evidence.
- EBN is the process of integrating
 - Clinical knowledge
 - Judgment
 - Proficiency skills
 - With the best available clinical evidence, such as nursing practice in to patient care.



References-I

- Baumann, S. L. (2010). The limitations of evidenced-based practice. *Nursing Science Quarterly*, 23(3): 226-230.
- DiCenso, A., Guyatt, G. & Cilisk, D. (2005). Evidenced-based nursing: A guide to clinical practice. St Louis, MO: Elsevier Mosby.
- Fineout-Overholt, E., Melnyk, B. M., & Schultz, A. (2005). Transforming health care from the inside out: Advancing evidence-based practice in the 21st century. *Journal of Professional Nursing*, 21(6):335-244.
- Fineout-Overholt, E., Melnyk, B. M., Stillwell, S. B., & Williamson, K. M. (2010) Evidence-based practice step by step: Critical appraisal of the evidence part I. American Journal Nursing, 110(7):47-52.
- Hoffmann, T., Bennett, S., & Mar, C. D. (2010). Evidence-based practice: Across the health professions. New York: Elsevier.
- Makela, M., & Witt, K. (2005). How to read a paper: Critical appraisal of studies for application in healthcare. Singapore Med J, 46(3), 108-115.
- Newhouse, R.P., Dearholt, S., Poe, S., Pugh, L.C. & White, K. (2007). Johns Hopkins nursing evidence-based practice model and guidelines. Indianapolis, IN: Sigma Theta Tau International.

References-2

- Agency for Healthcare Research and Quality (AHRQ).

 Systems to Rate the Strength of Scientific Evidence.

 Evidence Report/Technology Assessment: Number 47.
- Stapelkamp, C., Carter, B., Gordon, J., & Watts, C. (2011). Assessment of acute pain in children: Development of evidence-based guidelines. *Int J Evid Based Healthy*, *9*, 39-50.
- Melnyk BM, Fineout-Overholt E. Evidence-based Practice in Nursing and Healthcare: A Guide to Best Practice. Philadelphia: Lippincott, Williams & Wilkins; 2005.
- Worral P. S., Levin., R. F., & Arsenault, D. C. (2009).

 Documenting an EBP project: Guidelines for what to include and why. J NY State Nurses Assoc. 40(2):12-9.