Cincinnati Children's

LEGEND: Evidence Appraisal of a Single Study
Etiology, Risk Factors, Prevalence
Case–Control Study

Project/Topic of your Clinical Question: _____

Reviewer: _____ **Today's Date:** _____ **Final Evidence Level:** _____

Article Title: _____

Year: _____ **First Author:** _____ **Journal:** _____

Do the study aim/purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question? ☐ Yes ☐ No ☐ Unknown

- Study Aim/Purpose/Objectives:
- Inclusion Criteria:
- Exclusion Criteria:

Is a case-control study congruent with the author's study aim/purpose/objectives above? ☐ Yes ☐ No ☐ Unknown

Comments:

When reading the bolded questions, consider the bulleted questions to help answer the main question.
If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance:
CCHMC Evidence Experts: http://groups/ce/NewEBC/EBDMHelp.htm
Unfamiliar terms can be found in the LEGEND Glossary: http://groups/ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf

VALIDITY: ARE THE RESULTS OF THE CASE-CONTROL STUDY VALID OR CREDIBLE?

1. **Were there clearly defined groups of patients, matched on factors or exposures other than the hypothesized association?** ☐ Yes ☐ No ☐ Unknown
   - Were cases and controls at similar risk of developing the outcome?

   Comments:

2. **Was there a plausible association between exposure and outcome?** ☐ Yes ☐ No ☐ Unknown
   - Is it clear that the exposure preceded the onset of the outcome?
   - Does the association make biological sense?
   - Was the amount of exposure associated with the severity of outcome *(i.e., dose-response)*?

   Comments:

3. **Were treatments/exposures and clinical outcomes measured in the same way in both groups?** ☐ Yes ☐ No ☐ Unknown

   Comments:

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4. Was the assessment of outcomes either objective or blinded to exposure? ☐ Yes ☐ No ☐ Unknown

Comments:

5. Was the interval between exposure of study patients and measurement of outcome long enough to determine the hypothesized association? ☐ Yes ☐ No ☐ Unknown

Comments:

6. Was there freedom from conflict of interest? ☐ Yes ☐ No ☐ Unknown

- Sponsor/Funding Agency or Investigators

Comments:

RELIABILITY: ARE THESE VALID STUDY RESULTS IMPORTANT?

7. Did the study have a sufficiently large sample size? ☐ Yes ☐ No ☐ Unknown

- Was a power analysis described?
- Did the sample size achieve or exceed that resulting from the power analysis?
- Did each subgroup also have sufficient sample size *(e.g., at least 6 to 12 participants)*?

Comments:

8. Were the statistical analysis methods appropriate? ☐ Yes ☐ No ☐ Unknown

- Were the statistical analysis methods clearly described?
- If subgroups were evaluated, was a statistical adjustment made for the differences?

Comments:

9. What are the main results of the study? *(e.g., Helpful data: Page #, Table #, Figures, Graphs)*

Comments:

- ***Etiology:*** How strong is the association/correlation between exposure and outcome?

- ***Prevalence:*** What is the rate *(e.g., number per population)*?

- What were the measures of statistical uncertainty *(e.g., precision)*?
  (Were the results presented with Confidence Intervals or Standard Deviations?)

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10. Were the results statistically significant? ☐ Yes ☐ No ☐ Unknown

Note: *This question may not be applicable in all prevalence studies.*

Comments:

11. Were the results clinically significant? ☐ Yes ☐ No ☐ Unknown

- If potential confounders were identified, were they discussed in relationship to the results?

Comments:

APPLICABILITY: CAN I APPLY THESE VALID, IMPORTANT STUDY RESULTS TO TREATING MY PATIENTS?

12. Can the results be applied to my population of interest? ☐ Yes ☐ No ☐ Unknown

- Is the setting of the applicable to my population of interest?
- Do the patient exposures and outcomes apply to my population or question of interest?
- Were the patients in this study similar to my population of interest?

Comments:

13. Are my patient's and family's values and preferences satisfied by the knowledge gained from this study? ☐ Yes ☐ No ☐ Unknown

Comments:

14. Would you include this study/article in development of a recommendation? ☐ Yes ☐ No ☐ Unknown

Comments:

ADDITIONAL COMMENTS OR CONCLUSIONS ("TAKE-HOME POINTS"):

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QUALITY LEVEL / EVIDENCE LEVEL

- *Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.*
- *Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article*

		Etiology / Risk Factors	Prevalence
THE EVIDENCE LEVEL IS:	☐ **Good Quality Case-Control Study**	(4a)	(2a)
	☐ **Lesser Quality Case-Control Study**	(4b)	(2b)
	☐ **Not Valid, Reliable, or Applicable**		

TABLE OF EVIDENCE LEVELS							
	TYPE OF STUDY / STUDY DESIGN						
DOMAIN OF CLINICAL QUESTION	**Systematic Review Meta–Analysis**	**Cohort – Prospective**	**Cohort – Retrospective**	**Case – Control**	**Cross – Sectional**	**Epidemiology Descriptive Case Series**	**Expert Opinion Case Reports**
Etiology Risk Factors	**1a 1b**	**2a 2b**	**3a 3b**	**4a 4b**	**4a 4b**	**4a 4b**	**5a 5b**
Prevalence	**1a 1b**			**2a 2b**	**3a 3b**	**4a 4b**	**5a 5b**

Development for this appraisal form is based on:

1. Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group.; and American Medical Association.: Users' guides to the medical literature : a manual for evidence-based clinical practice. *Users' guides to the medical literature : a manual for evidence-based clinical practice:* "JAMA & archives journals." Chicago, IL, 2002
2. Melnyk, B. M. and E. Fineout-Overholt (2005). Evidence-based practice in nursing & healthcare : a guide to best practice. Philadelphia, Lippincott Williams & Wilkins.
3. Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from http://www.cebm.net/index.aspx?o=1025.
4. Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs,* 2(3): 157-60, 2005.

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