

Research Toolbox

2019 GLACLP Research Committee March 2019 Greetings!

If you are reviewing this resource, it means that you have an interest in learning more about research or about getting started in engaging in research. This is exciting! It is our hope that this resource will provide useful information for you as you start your research journey. As this is a working document, if you find any resources that are of tremendous assistance to you, please share them with the GLACLP so that others might benefit as well.

As always, it is a privilege to be in this Child Life field with you!

Sincerely,

The GLACLP Research Committee

GLACLP Research Committee Research Toolbox

Book Resources:

Creswell, J.W. & Creswell, J.D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th Ed.). Thousand Oaks, CA: SAGE Publications.

Denzin, N.K., & Lincoln, Y.S. (2018). The SAGE handbook of qualitative research. Thousand Oaks, CA: SAGE Publications.

Forister, J.G. & Blessing, J.D. (2016). *Introduction to research and medical literature for health professionals* (4th Ed.). Burlington, MA: Jones and Bartlett Learning.

Hagger-Johnson, G. (2014). *Introduction to research methods and data analysis in the health sciences*. New York, NY: Routledge.

Hirsch, R.P. (2016). *Introduction to biostatistical applications in health research with Microsoft Office Excel.* Hoboken, NJ: John Wiley & Sons, Inc.

Jacobsen, K.H. (2016). *Introduction to health research methods: A practical guide*. Burlington, MA: Jones and Bartlett Learning.

Polgar, S. (2013). Introduction to research in the health sciences (6th Ed.). China: Churchill Livingstone Elsevier.

Wright, R.J. (2014). Research methods for counseling: An introduction. Thousand Oaks, CA: SAGE Publications.

Journal Article Resources:

Carter, E.J. (2017). Clarifying the conundrum: Evidence-based practice, quality improvement, or research. *The Journal of Nursing Administration*, *47* (5), 266-270.

Chabot, J. (2019). Child life work and qualitative research: A perfect match. ACLP Bulletin, 37 (1), 14-16.

Clark, K.R. (2019). Ethics in research. Radiologic Technology, 90 (4), 394-397.

Curry, A. & Rosburg, N. (2009). Incorporating evidence-based practice into child life practice. Child Life Focus, 27 (1), 1-7.

Morris, M.A., Oshita, J.Y., & Stransky, M. (2019). Advancing the delivery of communication sciences and disorders services through research: The promise of health services research. Perspectives of the ASHA Special Interest Groups, 4 (1), 16-26.

Mormer, E. & Stevans, J. (2019). Clinical quality improvement and quality improvement research. *Perspectives of the ASHA Special Interest Groups*, *4* (1), 27-37.

Oleson, J.J., Brown, G.D., & McCreery, R. (2019). Essential statistical concepts for research in speech, language, & hearing sciences. *Journal of Speech, Language, & Hearing Research, 62* (3), 489-497.

Related Video Links:

Measurement Scales and Variables: https://www.youtube.com/watch?v=YyAwRGP2TZk Independent vs. Dependent Variables: https://www.youtube.com/watch?v=nqjOrJEf3Ew Scales of Measurement: https://www.youtube.com/watch?v=KIBZUk39ncl Scales of Measurement Pt. 2: https://www.youtube.com/watch?v=yJpiUHbLKLU Reliability and Validity: https://www.youtube.com/watch?v=9ltvDNAsO-I

Developing Your Research Question

PICO Question Worksheet

1. Develop your PICO question:

A PICO question will help you determine your search strategy.

2. List alternative search terms for the various parts of your PICO question:

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3. Define limits for your search:

4. List the databases you intend to search:

Adapted from: Miller, S. (2001). PICO Worksheet and Search Strategy. National Center for Dental Hygiene Research.

PICO Question Templates

Therapy					
In	_, what is the effect of	on	C(ompared with/to)
?					
<u>Example</u> : In pec	diatric patients (P) , what	is the effect of d i	i straction (I) on	immunization	pain
(P) compared t	to EMLA cream (C)?				
Etiology					
Are	who have	at	risk for/of	co	mpared with
W	vith/without	_?			
<u>Example</u> : Are p	ediatric patients (P) with	sickle cell diseas	s e (I) at higher r	risk for school	
difficulties (O)	compared with pediatric	patients (P) with	out sickle cell o	disease (C)?	
Diagnosis or T	est				
Are (Is)	more accurate in o	liagnosing	com	pared with	?
For? ? Example: For pe preparation (I)	does the use of ediatric patients receivin reduce the future risk of	reduce th g a VCUG withou ongoing psychos	ne future risk of It sedation (P) (Social or psycho	does the use of logical distress	_compare with psychological (0) as
	pediatric patients who re				
Prognosis				2	
Does	influence	in patients w	ho have	?	
Example: Does	anxiety (I) influence qua	l ity of life (O) in p	atients who ha	ve pediatric ca r	ncer (P)?
Meaning					
How do	diagnosed with	per	ceive	?	
<u>Example</u> : How o relationships w	do adolescent patients (F rith peers (O)?	P) diagnosed with	HIV/AIDS (I) p	erceive their	

Adapted from Melnyk & Fineout-Overholt, p.31

Searching for Evidence Using a PICO Question

- 1) Determine the search terms from the PICO question
- 2) Then determine alternative terms for search terms typically synonyms
- 3) Determine database(s) that will contain the information that you want to find

Database/Site	Internet Access	Description of Database/Site
Cochrane	www.cochrane.org	Collection of systematic reviews and meta-analysis
Collaboration Data		of healthcare interventions
Base		
Joanna Briggs	www.joannabriggs.edu.au	Evidence-based resources in areas of nursing,
Institute (JBI)	/consumer/index.php	midwifery, medicine, and allied health
Agency for	<u>www.ahrq.gov</u>	Evidence-based reports, information on the
Healthcare Research		effectiveness of care and preventative treatment,
and Quality (AHRQ)		technology assessments, clinical practice
		guidelines, and the National Guideline
National Guidalina	www.auidalina.aou	Database of avidence based elipical prestice
Clearinghouse	www.guidenne.gov	guidalines and other related documents. Includes
Cleaninghouse		guidelines from countries other than the United
		States
PubMed (MEDLINE)	www.pubmed.org	Internet-based free search engine that provides
		access to bibliographical information from
		MEDLINE database
CINAHL	http://www.ebscohost.co	Database of nursing and allied health literature
(Cumulative Index to	<u>m/cinahl</u>	
Nursing and Allied		
Health Literature)		
PsycINFO	http://www.apa.org/psyci	Database of psychological literature
C	nfo	
Scopus	http://www.scopus.com/s	Abstract and citation database of research literature
SUMGaarah	<u>copus/nome.un</u>	And quality web sources
SUMBEAICH	adu	detabases to automate searching for modical
		evidence
Medline Plus Health	http://medlineplus.gov/	Patient education web site with 750 pre-formulated
Information		MEDLINE searches on various healthcare topics
		from consumers
Clinical Trials	www.clinicaltrials.gov	Index of federally and privately funded clinical
		trials worldwide
Trip Database	www.tripdatabase.com	Database to answer clinical questions using
(Turning Research		principles of evidence-based medicine that searches
Into Practice)		multiple sources
BestBETs	www.bestbets.org	Database of answers to emergency medicine-
		specific clinical problems based on best evidence

List of Databases and Websites to Find Evidence-Based Practice Summaries and Research

4) Enter search terms and alternative search terms in database(s) to find relevant materials

Tips for Searching Databases

a) Keywords and controlled vocabulary: Most search terms (and alternative search terms) can be entered as "keywords" to retrieve information. However, some databases – most notably, PUBMED – use a "controlled vocabulary," which means the databases use specific words for categorizing the information in the database. For example, in PUBMED (the search engine for MEDLINE), the controlled vocabulary is known as MeSH or Medical Subject Headings. In this system, the MeSH for "cancer" is "neoplasm," and using "neoplasm" as an additional search term will give better search results. Also, in PubMed (MEDLINE) and other databases, the controlled vocabulary may be arranged in a hierarchical system that allows that searcher to expand or reduce the search related to the subject. For example, if searching on neoplasm, the searcher may be asked if they want to further refine the search by picking subtopics under neoplasm. If a database uses a controlled vocabulary, more information about the subject can be obtained from a medical librarian or on the home page of the database.

b) Boolean search basics: Search words can be combined using Boolean search terms to expand or reduce the result of a search. The following are diagrams depicting the use of Boolean search terms.



c) Expanding or limiting a search: The initial use of search term(s) may yield too many or too few articles.

Strategies on how to limit your search when there are too many articles:

- "AND" with another search term
- Limit to the English language
- Limit to age, gender, human
- Limit to the type of publication (such as systematic review or cohort study)
- Use a more specific search term (instead of distraction, use guided imagery)

Strategies on how to expand your search when there are too few articles:

- Use "**OR**" with a synonym
- Remove all limits (such as age, language, gender)
- Do not limit the publication types
- Use broader search terms

d) **Specific database tutorials or help functions**: Many databases have search help functions or tutorials. Most tutorials and help functions are located on the home or login webpage of the database. Also, many databases have help functions available at all times when searching.

Database Tutorials

The Cochrane Library (Retrieved 3/14/09)

http://www3.interscience.wiley.com/homepages/106568753/QuickRef.pdf

CINAHL (Retrieved 3/10/09)

General EBSCO search engine (the search engine that is used for CINAHL) <u>http://support.ebsco.com/training/flash_videos/basic_search_academic_tut/basic_search_academic_tut.htm</u>

CINAHL Specific tutorial at <u>http://support.ebsco.com/training/tutorials.php</u> then scroll down to the header "Product-Specific Tutorial" and select "CINAHL Basic and Advanced Searching"

PsycInfo (Retrieved 3/10/09)

Several tutorials available for the different search engines for this database are listed on this link <u>http://www.apa.org/databases/training/searchguides.html</u>

Pub Med (Retrieved 3/10/09)

http://www.nlm.nih.gov/bsd/disted/pubmed.html

Scopus (Retrieved 3/10/09)

http://www.info.scopus.com/detail/how/

References

Cochrane Reviewer's Handbook (2003). Section 4: Formulating the problem. Found at <u>http://www.cochrane.dk/cochrane/handbook/hbook.htm</u>. Accessed February 8, 2009.

Counsell, C. (1997). Formulating questions and locating primary studies for inclusion in systematic reviews. *Annals of Internal Medicine*, 127, 380-387.

Melnyk, B.M., & Fineout-Overholt, E.F. (2005) *Evidence-Based Practice in Nursing and Healthcare*. Philadelphia: Lippincott Williams & Wilkins.

Miller, S. (2001). PICO Worksheet and Search Strategy. National Center for Dental Hygiene Research.

Stone, P. (2002). Popping the (PICO) question in research and evidence-based practice. *Applied Nursing Research*, 16, 197-198.

Stratus, S., & Sackett, D. (1998) Getting research findings into practice: Using research Findings in clinical practice. *British Medical Journal*, 317, 339-342.

Resources

E-learning modules on the five step evidence-based model including practice using PICO questions (retrieved 3/14/09)

http://www.biomed.lib.umn.edu/learn/ebp/mod01/index.html

E-learning module on how to search for literature in a database (retrieved 3/14/09) http://www.nottingham.ac.uk/nursing/sonet/rlos/studyskills/lit_search/



ASSESSING RESEARCH EVIDENCE HANDOUT

EVALUATING THE QUALITY OF A RESEARCH STUDY*

Questions:

Overall Scientific Credibility

- Does the study make sense the way it is conceptualized?
- Are the methods employed appropriate for answering the research question?
- To what extent does the research design control for bias?
- How does the study establish its validity?
- How do study conclusions fit with other sources of evidence?

Background/Introduction Section

- What is the issue this study attempts to address? Is study question clearly stated?
- How current is the literature reviewed?
- Is the cited literature relevant to the topic? Is it from credible sources?
- What gaps in the literature does the review identify? How effectively could this research fill those gaps?
- Does the literature referenced in the article provide a rationale for the study's research questions?
- Is there a theoretical basis of the research? If so, on what theory is this research based?
- Do the theories and/or prior research cited provide reasonable justification for the hypotheses?
- Were the hypotheses developed before the study was conducted?
- Are the concepts to be researched clearly articulated?

Methods Section

- Is the study design appropriate to address the research questions guiding the study? Is the design qualitative, quantitative, or mixed methods?
- Is the sample broadly representative of the client/population of the research question? If not, is there sufficient rationale for recruiting "special" cases?
- What were the sampling eligibility criteria? What was the sampling method used? How was the sample recruited?
- What are the plans to prevent or address subject attrition (subject dropout/loss to follow-up)?
- Were the data collection and analysis plans relevant to answering the research question(s) and/or testing the hypotheses?
- What information is provided about the plan for data analysis, and is it sufficient?

Methods: Quantitative Studies

- Were the independent and dependent variables measured carefully?
- Was a carefully selected sample used?
- Did the sample size have sufficient statistical power for analysis?
- Did the authors control for extraneous factors through randomization or some other method?
- What were the primary independent and dependent variables?
- Did the authors collect standardized data?
- What measures were used in the study? Were they appropriate to measure the study concepts? Are they valid and reliable?
- Were the statistical analyses of the data designed to determine the likelihood that sampling error might have produced an apparent relationship between or among variables?
- What was the response rate (number of people who chose to participate compared to total number recruited)? Were there differences between people who chose not to participate in study and those who did? How were these differences accounted for?
- What was the sample attrition (i.e., study participants who dropped out)? How were attrition data handled?
- Did the authors address bias due to low response rates or high sample attrition?

Methods: Qualitative Studies

- Was the sample size large enough to meet the study's goals but not so large that it appears unfeasible?
- Did the data collection method appear to encourage research participants to discuss their experiences and perceptions honestly and candidly?
- Were any potential researcher biases noted?
- Did the researcher specify the theoretical perspective(s) employed?
- Did the researcher specify the type(s) of qualitative methods used?
- Did the researchers use a formal coding process or other qualitative analysis method?
- Did the researchers use "strategies for rigor" such as triangulation, member checking, and negative case analysis?
- Do the data reflect the "richness" that is sought when using qualitative methods?
- Did the study yield information that can be evaluated in relation to existing knowledge found in the professional literature?
- Did the research indicate meanings and themes for better understanding the study populations' experiences?

Methods: Practice Guidelines

- Are objectives of guidelines clear?
- Is a specific clinical question addressed?
- Who is the targeted professional recipient of the guidelines?
- Is guideline process described?

- Do members of the panel that developed the guidelines have appropriate credentials?
- Do panel members represent all relevant stakeholders, including target groups?
- Are guidelines based on systematic review or integrative research review with each guideline supported by research?
- Have risks and burdens to clients been considered?
- Are recommendations clear and specific?
- Are guidelines current?

Methods: Systematic Reviews and Meta-analyses

- Was a focal question identified in advance of the search?
- Was a comprehensive search strategy described including criteria for including studies?
- Was the validity of the studies included assessed?
- Were findings consistent across studies?
- What was the level of evidence of the studies included?
- If relevant, how many studies had clinically significant treatment effects?
- How complete was the picture presented by the review?
- Were there specific outcomes that were frequently produced?
- What findings provide the most confidence?

Findings/Results Section

- Do the findings seem reasonable in relation to the data?
- Did the author report characteristics of the sample (such as, race, age, sex, education, income level, etc.), as well as the frequency distributions of each of these characteristics?
- If quantitative comparisons of groups were employed, were the groups comparable on characteristics that could affect the study's outcomes? If not, were any differences statistically controlled (i.e., accounted for through the use of statistics)?
- Is the data analysis appropriate for answering the research questions and/or for testing the hypotheses?
- Were multiple statistical tests conducted? If so, were means taken to avoid chance findings?
- Were missing data handled appropriately in the data analyses?

Discussion Section

- Do the authors describe the limitations of the research design and study?
- Do the authors indicate other questions that are raised by the results of this study?
- Are possible competing explanations for the results discussed?
- Do the authors discuss the implications that the findings have for future research, practice and/or policy?
- Do the study's implications flow directly from the findings or do they overstate the application of the study's findings? (Note: A common error is an overgeneralization of the findings to populations or settings very different from the sample utilized).

- Can the findings from this research be generalized or applied to the target population of interest?
- Do the authors indicate how future research can build on this study in order to advance scientific knowledge?

* Adapted from Danya International REACH-SW materials

Assessing Evidence: Utilizing Your Resources

1. How a Medical Library Can Help You

While some institutions may be affiliated with a large medical research library, most hospitals have access to a medical library or similar service available for staff and physicians. If you are not familiar with the resources available at your institution, ask to find out what resources are available to you.

Your medical library staff can help you find information for research, education, and patient care.

- A medical librarian can search multiple sources for information, saving you time
 - \circ $\;$ Talk with the librarian or complete an information request form
 - Explain what topic(s) you are looking for
 - Your medical librarian can locate articles for you on your topic
 - Request your medical librarian to in-service your department and learn how to:
 - o Access databases
 - Search databases
 - Analyze the evidence

**Students and educators may access these databases through their universities

2. The Internet – Evidence at your Finger Tips

Many databases and websites available through the Internet have links that direct you to full text journal articles. Most educational institutions, medical libraries, and some public libraries have remote access to these databases; therefore, it may not be necessary to physically go to the library to search and retrieve information.

Even if you or your institution do not have access to these sources, some are available free of charge on the internet or may require a fee.