Leaping into Evidence-Based Practice

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Course Objectives

By the end of the session, the learner will be able to:

1. Describe evidence-based practice as it relates to occupational therapy practice.
2. Create a clinical question in PICO format.
3. Discuss a method to appraise evidence gathered from online sources.
4. Explore free full text and open-access databases to gather the best available evidence to answer a clinical question.
Evidence-Based Practice (EBP) in Occupational Therapy
History of EBP

First emerged during Post-World War II Era

1950’s there was a push to begin examining the efficacy of medical interventions

The term evidence-based medicine first published in JAMA-1991

Adopted by other health professions as evidence-based practice

(Hinojosa, 2013)
Evolution of EBP in OT

1997- “Evidence-Based Practice and Occupational Therapy” by Walter Lloyd-Smith was published

July 2000- AOTA included EBP in accreditation standards for entry-level occupational therapy education (AOTA, n.d.; AOTA, 1999)

2007- AOTA included EBP to AOTA’s Centennial Vision

2008- Introduced term in 2nd ed. of the OTPF: Domain and Process
**First steps first...**
**Coming to a common definition**

What is your definition of *evidence based practice*?

It depends…
<table>
<thead>
<tr>
<th>PRE-2000 GRADUATES</th>
<th>POST-2000 GRADUATES</th>
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<tbody>
<tr>
<td>Emphasis on teaching of experts</td>
<td>Increased use of relevant data from research</td>
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<tr>
<td>Graduated before <em>Internet</em> was introduced (1995) or widely used</td>
<td>Proficient with technology used for EBP</td>
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<td>May never have had formal training in EBP methods</td>
<td>EBP was part of the entry-level education</td>
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<td>Most experienced may actually be least skilled in utilizing evidence</td>
<td>Least experienced may be the most skilled in locating best available evidence</td>
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(Anders & Evans, 2010; Jette et al., 2003; Leiner et al., 2009; Lu, 2011; Thomas & Law, 2013)
Regardless of Experience...

Obstacles to implementing EBP must be overcome for profession to progress

- What barriers do you experience in your practice?
- What can we do to promote EBP in clinical settings?
Definition of Evidence-Based Practice:

“Clinical decision making which incorporates the evidence triad of clinical expertise, current research and the client’s preferences.”

(Crausaz, Kelly, & Lee, 2011, p. 11)
Implementing Evidence-Based Practice (EBP) in Occupational Therapy
**Steps to Implementing EBP**

1. Develop a clinical question
2. Locate the best available evidence
3. Appraise the evidence
4. Integrate the evidence with clinical expertise and patient preferences
5. Evaluate the outcomes of implementation
6. Share the results

(Adapted from Melnyk, Fineout-Overholt, Stillwell, & Williamson, 2010)
Step 1: Develop a Clinical Question

LET'S GET STARTED!
Taking the first step

- Conducting an online search can feel overwhelming given the vast amount of information out there.
- However a little practice and a list of tools can help make that process much easier.
Where to begin?

What is your clinical question and why are you asking it?

- Is it to get more information about a diagnosis?
- Is it to get more information on a treatment protocol?
- Is it related to finding out the results or associated difficulties of a treatment method?
- Is it to compare two treatment methods?

(Bennett & Bennett, 2000, p. 173)
Refining your question

The more explicit your question, the more focused your search

The type of question can help you determine the best search strategy

The type of question can also determine the type of evidence needed for making clinical inferences

(Bennett & Bennett, 2000, p. 174-175)
PICO Strategy

➢ Common strategy to assist in online searches
➢ Consists of:
  ◦ Patient population/problem
  ◦ Intervention
  ◦ Comparison (if applicable)
  ◦ Outcome

(Schardt, Adams, Owens, Keitz, & Fontelo, 2007)
Example Scenario using PICO

You have been referred a new pediatric patient who is 2-years old and has a diagnosis of Erb’s palsy. You have used e-stim before with a similar patient some years ago, but you remember a colleague used kinesiotape with some success for another child with Erb’s palsy to increase supination.

➢ Before you evaluate the child, you decide you want to investigate the current evidence.
So from that example...

- **Patient population:**
  - Children diagnosed with Erb’s palsy
- **Intervention:**
  - Kinesiotaping
- **Comparison (if applicable):**
  - E-Stim
- **Outcome:**
  - Improved supination
Step 2: Locating the best available evidence

YOU HAVE YOUR CLINICAL QUESTION... NOW WHAT?
Beginning the search

Your clinical question helps determine the search engine to use

Search engines can be specific to the type of publications

➢ Think: What category does the question fall under
Common EBP Search Engines

**Google Scholar (wwwgooglescholar.com)**
- Free search tool
- Searches internet for scholarly articles, not all free full-text

**PubMed (www.pubmed.com)**
- Free equivalent to MedLine
- 25 million citations, not all free full-text
- MeSH Headings
- Tutorials available
<table>
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<th>GOOGLE SCHOLAR</th>
<th>PUBMED</th>
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<tr>
<td>• Search engine for various academic fields.</td>
<td>• From National Library of Congress</td>
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<tr>
<td>• Searches include scholarly publications (i.e. theses, books, peer-reviewed journal articles, etc.)</td>
<td>• Focus on biomedical journal literature</td>
</tr>
<tr>
<td>• Simple to use</td>
<td>• Powerful search filters can be complex for users</td>
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<tr>
<td>• Familiar format</td>
<td>• Includes Clinical Queries to identify studies by design</td>
</tr>
<tr>
<td>• Advanced search options are limited</td>
<td>• Uses MeSH strategy</td>
</tr>
<tr>
<td>• Searches are less refined</td>
<td>• Searches are more focused due to the search strategies available</td>
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Let's go back to the earlier example

- **Patient population:**
  - Children diagnosed with Erb's palsy
- **Intervention:**
  - Kineseiotaping
- **Comparison (if applicable):**
  - E-Stim
- **Outcome:**
  - Improved supination
Our PICO search may be:
Erb's palsy AND electrical stimulation AND kinesiotape
AND supination
Results in PubMed: 0

Modified search to see if either treatment has research:
Erb's palsy AND electrical stimulation OR kinesiotape
AND supination
Results in PubMed: 109
Example

GOOGLE SCHOLAR
Our PICO search may be:
- Erb's palsy AND electrical stimulation AND kinesiotape
- AND supination

Results in Google Scholar: 5

Modified search to see if either treatment has research:
- Erb's palsy AND electrical stimulation OR kinesiotape
- AND supination

Results in Google Scholar: 605
Modifying the Search

If at first you don’t succeed, try again:
- Use a different search engine
- Use a different database
- Use a synonym for one of your search terms
- Use more specific terms (if too many items are returned)
- Make terms more broad (if too few items are returned)
- Change the order of the PICO terms
Step 3: Appraising the Evidence

HOW DO YOU KNOW IF YOUR EVIDENCE IS ANY GOOD?
Appraising the Evidence

Questions to Consider when Appraising Evidence

▪ Did the study investigate your specific intervention with the same population as yours?
▪ Is the source of the study credible?
▪ Are the results of the study consistent with the results of other studies investigating similar treatments or populations?
▪ Is the study more than 5 years old?
▪ Were the sample sizes adequate to determine a benefit?

(Davies & Logan, 2011)
Exploring Additional Online Resources

TO SUPPORT EVIDENCE-BASED PRACTICE IN OCCUPATIONAL THERAPY
Beyond PubMed


- Reviews 28 systems and compares to PubMed
- Systems divided into 4 categories:
  - Rank search results by various means
  - Clustering results by topic
  - Displaying relationships and semantics of results
  - Improving interface and experience

(Lu, 2011)
Occupational Therapy
Databases and Resources

OT Research (www.nbcot.org/otresearch)
◦ Member benefit for NBCOT

OT Search (http://www1.aota.org/otsearch/)
◦ Subscription service
◦ Occupational Therapy Focus

OT Seeker (www.otseeker.com)
◦ Open access to 10,000+ items
◦ Occupational therapy focus

Evidence Exchange (http://www.aota.org/Practice/Researchers/Evidence-
Exchange.aspx)
◦ Open access to completed CAP reviews
Physical Therapy Databases and Resources

PT Now (www.ptnow.org/Default.aspx)
- Open access to 4,500+ items
- Physical therapy focus

Hooked On Evidence (http://www.hookedonevidence.org/captcha.cfm)
- Physical therapy focus
- Members only benefit of APTA
Speech and Language Databases and Resources

Speech Bite (http://speechbite.com/)
- Open access for topics related to speech pathology

ASHA Compendium (http://www.asha.org/members/ebp/compendium/)
- Systematic reviews on practice topics
- Members only
Other EBP Resources
(Open Access or Subscription)

PMC (http://www.ncbi.nlm.nih.gov/pmc/)
  • Free full-text archive

Medline Plus (www.medlineplus.gov)
  • For patients and practitioners

ProQuest

CINAHL Database/EBSCO Health

And many more…
Open Access Online Journals

www.freemedicaljournals.com
- Taylor and Frances
- SAGE Publications
- BMC Medical
- JAMA
- British Medical Journal
- Biomed Central
- And many more…
Tutorials on Locating Evidence

Duke University Medical Center and Library
http://guides.mclibrary.duke.edu/c.php?g=158201&p=1036002

PubMed: US National Library of Medicine
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Frog image: [FreeVector.com](https://www.freevector.com/happy-frog-character)