

SPHSC 500

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Clinical Methods
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“Evidence-Based Practice (Finding
existing evidence)”

Evidence-Based Practice and This Course

- Finding evidence – searches
 - Application for assessment - diagnosis and recommendations
 - Application for planning treatment (to come)
- Data for proving benefits of treatment
 - Application for monitoring progress (to come)

Assignments

- Assignment #1 – UW library search and preliminary search for evidence
- Unofficial assignment – What is being done with your client in terms of assessment/evaluation – diagnosis and recommendations in regards to existing evidence.

Seeking “Best Evidence”

Steps to finding and using high quality evidence:

1. Pose an answerable question
2. Search for available evidence
3. Critically evaluate the evidence
4. Apply the results clinically

Step 1: Pose an answerable question

What do you want to know:

You can be looking for general or specific information

Guidelines: (asha.org)

PICO

- Population
- Intervention
- Comparison
- Outcome

VISIT THIS SITE:

<http://healthlinks.washington.edu/ebp/pico.html>

PICO

- Population –
 - What are the characteristics of the patient or population?
 - What is the condition or disease you are interested in?
- Intervention – recommendations
 - What is the nature of intervention – name, specific description

PICO

- **Comparison**
 - What is the alternative to the intervention (e.g. no treatment, different treatment)?
- **Outcome**
 - What are the relevant outcomes (e.g. change in structure/function, activities/participation, environmental factors)?

PICO – asha.org

Population	Intervention	Comparison	Outcome
Stroke patients	Early initiation of aphasia treatment	Aphasia treatment after initial/spontaneous recovery time	Functional communic. abilities
Kindergarteners with articulation disorders	Individual pull-out treatment	Group pull-out treatment	Ability to consistently produce /s/
17-year-old male with a severe head injury	Cognitive rehab	No cognitive rehab	Return to work/school

Posing the Question

- The first question, then, could be written as, “Are patients with aphasia who received SLP services shortly after their stroke more or less likely to achieve functional communication abilities than stroke patients who received such treatments later?”

Step 2: Search for evidence

Traditional sources:

- Consultation with expert
- Clinical observations
- Case reports
- Textbooks
- Journal articles
- Published scientific studies

Strengths & weaknesses among these sources?

Newer Sources

- Newsletters
- Popular press
- Online databases of articles (Medline)
- Evidence-based journals
- Evidence-based databases

Searching the Literature

General questions:

Often are good for broad searches that show up in systematic reviews (versus individual studies). For general recommendations, this may be fine

Specific questions:

Addressed in individual studies.

Usually more relevant to your client – and planning treatment

For more specific questions...

- the more you have to use advance search techniques to narrow the number of documents

Finding Evidence

- Search in the right places
 - Find sources with reviews
 - Find current sources
- Search electronically
 - High quality sites (listed in Assignment #2)
- Search in the right places, in the right order
 - Evidence summaries from review panels
 - Evidence summaries from individuals
 - Individual research studies

- Systematic Reviews
 - Formal assessments of the body of scientific evidence related to a clinical question

Cochrane Collaboration

<http://www.cochrane.org/reviews/clibintro.htm>

Campbell Collaboration

<http://www.campbellcollaboration.org/frontend.asp>

What Works Clearinghouse (US Department of Education)

<http://www.w-w-c.org/>

- Systematic Reviews versus Practice Guidelines
 - Just a caution here: Make sure you understand the type of evidence that goes into the review or guideline
 - Systematic reviews defined as having a rigid set of criteria
 - Practice guidelines may not

- Individual Studies
 - Scientific – Refereed Journals
 - Note: American Journals vs. European Journals have differences (e.g., publishing negative findings – tx. doesn't work)
 - Validity?
 - Technical reports, conference proceedings, testimony and other unpublished evidence
 - Validity?

Searching the literature

General Question

Is individual treatment beneficial for an adult with chronic aphasia?

Key Words

Individual treatment

Chronic aphasia

Searching the Literature

(Slides from Pat Dowden)

Specific Question

Will the use of picture-exchange communication improve the frequency of communication (whether through PECS or through speech) in a 4-year old child with autism with prelinguistic communication and some vocal imitation skills in a self-contained classroom?

Searching the Literature

KEY WORDS:

Will the use of picture-exchange communication improve the frequency of communication (whether through PECS or through speech) in a 4-year old child with autism with prelinguistic communication and some vocal imitation skills in a self-contained classroom.

Unfortunately, this is likely to yield nothing.... so....

Searching the Literature

So, reduce the key words:

1. child
2. autism
3. PECS or Picture-Exchange, Picture + Exchange

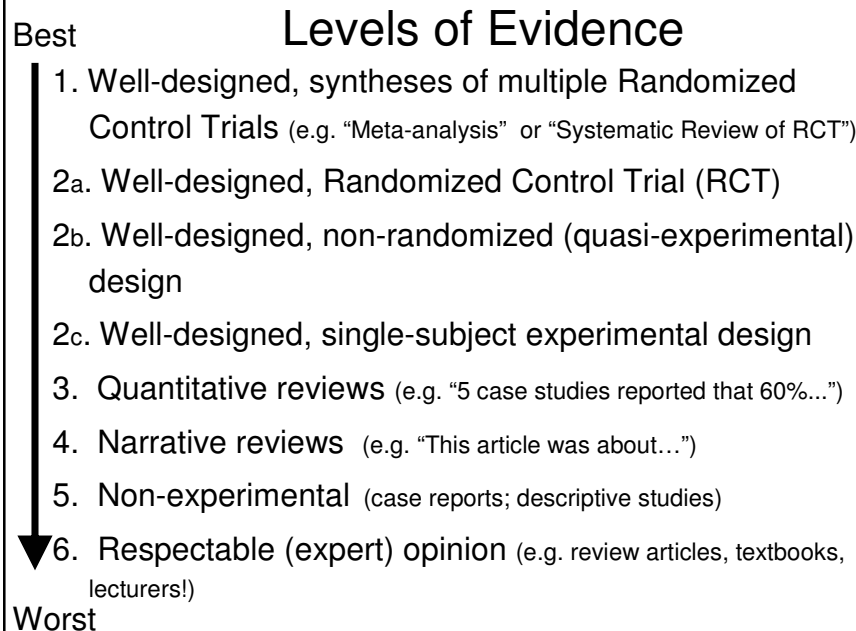
.....And look for the outcome in the results

This may or may not be relevant to MY client

Step 3: Evaluating Evidence

No single set of criteria applies to every kind of evidence, and different rating criteria are needed according to whether evidence concerns treatment, prognosis, diagnosis/screening, differential diagnosis, and health care economics. (Dollaghan, 2007)

A preferred hierarchy of evidence is one that combines Group and Single Subject designs and focuses on studies done with clinical populations, not with “normal” non-disabled subjects. (Schlosser, 1990)



Determining Level of Evidence

To be sure, you must read and evaluate the actual article
(although that is not required for your Assignment #1)
For example:

“used a single-case experimental design to study the effect of
using a computer-based visual communication system
across 5 subjects.”

Unfortunately, they only reported detailed results on 1 subject
under 1 condition, no details on procedures and no
reliability, preventing replication – so case study

Determining Level of Evidence

You simply cannot tell from the title:

“Evaluation of a computer-based program for ...”
Sounds research based, but is not

“Speech & language therapy for aphasia following
stroke”
Sounds like clinical guidelines but is Level I
because found in “Cochrane Review”

Levels of Evidence

Level I: Systematic review of all relevant randomized controlled trials (RCT)

Systematic Review: "...a summary of all published randomized controlled trials on the topic of interest." (Reilly, Douglas & Oates, 2004)

Meta-analysis: "...a systematic review that uses quantitative methods to summarize the results." (Sackett et al, p. 247.

****Cochrane Collaboration**

****Campbell Collaboration**

Level of Evidence

Level 2a: Evidence from at least 1 properly designed RCT

- "comparing interventions"
- "two treatment groups"
- "compare intervention to no treatment"
- "control group and treatment group"
- "clinical trial"

And it must include one of these terms:

- "randomly assigned" "randomization"

Level of Evidence

Level 2b: Well-designed, non-randomized (experimental) design

- “controlled trial”
- “treatment group”
- “control group”
- “2 treatment groups”

But “randomization” absent or not described.

Level of Evidence

Level 2c: Single subject/Time series designs

- “single-case” “single subject design”
- “time series” “N of 1 trials”
- “multiple-baseline”

Evidence of experimental control...control behaviors, control conditions

Some type of experimental manipulation

Level of Evidence

Level 3: Quantitative reviews

- “A review of X studies indicated X (quantitative results)” -- more or less looking for patterns
- Consider as summary articles with statistical analyses.

Level 4: Narrative reviews

- “X treatments was supported by”

Level of Evidence

Level 5: Non-experimental – no experimental manipulation

- “case report”
- “descriptive study”

Level 6: Opinion of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

- “clinical rounds”
- “tutorial”
- “intervention or practice guidelines”
- descriptions of interventions

Step 4: Apply the Results Clinically

- Bringing together the available scientific evidence (external evidence), clinical expertise and clinical data of your own (internal evidence) and the patient's perspective and preference to make informed decisions

EBP

- External Evidence: Research
 - Evaluate the evidence – Obviously the higher the level of evidence the better
- Internal Evidence: Clinician factors
 - Clinician education/experience with treatment
 - Agency (school district, school, hospital) policies
 - Clinician collected data on past clients
 - Clinician theoretical or philosophical orientation

- Client/Other Factors (spouse-partner, parent-child, individual-caregiver)
 - Cultural values and beliefs of client and other
 - Activities and participation in which client and other are engaged
 - Financial/time resources
 - Client-other engagement
 - **Preference**

Making clinical decisions

- Integrate all of the evidence
 - External evidence
 - Internal evidence
 - Client perspective/preference
- Come up with a plan
- Collect your own data to document benefits of treatment (which serves to build internal evidence for future clients)

A final thought: Remember

- Though our discipline may not have a lot of evidence, particularly Meta Analyses and RCTs, a large body of evidence exists regarding our clinical techniques:
behaviorism