Demystifying Research: Accessing & Understanding Evidence for Clinical Practice

Kimberly A. Murphy
Old Dominion University, kamurphy@odu.edu

Meredith Poore Harold
Rockhurst University

Mary Huston
Minot State University

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Kimberly A. Murphy, PhD, CCC-SLP
Meredith Harold, PhD, CCC-SLP
Mary Huston, MS, CCC-SLP

WHAT IS EBP AND WHY DO WE CARE?

EBP is the integration of:
- Clinical expertise/expert opinion
- External scientific evidence
- Client/parent/caregiver values

The EBP process:
- Ask a question
- Acquire knowledge – search the literature
- Appraise the literature – is it valid
- Apply the knowledge – clinical practice
- Assess client improvement

The goal of EBP:
- Provide optimal client-centered service
- Provide dynamic integration of external evidence and clinical expertise
- Provide high-quality services

What is clinical evidence?
- Treatment is grounded in theory
- Treatment data including the client’s response to intervention, changes in intervention, generalization, and control

Why do we care about EBP?
- Research has been known to disseminate popular clinical opinion (e.g., oxygenating premature infants, facilitated communication, and the use of opium to treat diabetes)
- Bucking expert opinion with research is necessary to improve the evidence base
- Using all three elements of EBP allows the clinician to avoid subjectivity and bias

How do we do EBP in the clinical setting?
- Recognize the needs of the client and their caregivers
- Acquire and maintain the knowledge needed for high-quality professional service
- Collect data – document treatment methods and progress and evaluate for effectiveness
- Monitor and incorporate new research evidence

WHERE DO I FIND THE BEST EVIDENCE?

Databases

- PubMed
- ERIC
- SpeechBITE
- ASHA’s Evidence Maps
- The Informed SLP

How to search a database: https://www.nlm.nih.gov/bd/d ed/pubmedtutorial

Some predict that EBP guidelines would substantially improve the time barrier of accessing and reading evidence for practice (Fey, 2006). Some options for SLPs:

- Autism PDC’s EBP Guide (Autism)
- ASHA Practice Portal (Speech-Language Pathology)
- ASHA SIG Perspectives (Speech-Language Pathology)
- ASHA’s Systematic Review (Speech-Language Pathology)
- Campbell Collaboration (Social-Economics)
- Cochrane Database of Systematic Review (Medical)
- Pearson EBP Briefs (Speech-Language Pathology)
- U.S. Department of Health & Human Services National Guideline Clearinghouse (Medical)
- What Works Clearinghouse (Education)

Critical Appraisal

Beware the pseudoscience!
Science vs. Pseudoscience Checklist
- Baloney Detection Kit

Cost of articles is a barrier. Options:
- Pay for it ($12-$55 for our top journals); rent it (e.g. $6.48 hr).
- ASHA journals (free for members)
- Google (not Google Scholar) article title alone, then author name. If brand new, wait and try again later.
- Author’s institutional repository (aka Scholarly Commons; search www.openaccess.org)
- Visit a university; get alumni or community access
- Get it from your employer
- Ask the author for it (email)

Research Type

- Case study
- Correlation
- Comparison of means
- ANOVA and ANCOVA
- Regression and multiple regression
- Single subject design

More advanced statistical methods may provide more precise results
- HLM - hierarchical linear modeling
- SEM - structural equation modeling
- Growth models

FINANCIAL OR NON-FINANCIAL CONFLICTS OF INTEREST

Author disclosures: Murphy & Huston report no conflicts of interest related to the content of this poster. Harold reports ownership of The Informed SLP.

Poster, references, and resources can be retrieved from http://digitalcommons.odu.edu/cdse_pubs/14

HEALTH LITERACY

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Statistical Analysis

Commonly reported statistics

- p-value
- Statistical significance is less than a difference of .05 (e.g., “significant”)
- Correlation coefficient is .2, medium. Correlation does not equal causation.
- Pearson r
- Percent of variance explained

Type of research designs that indicate higher level of evidence

- Experimental (and quasi-experimental)
- Randomized controlled trial
- Systematic review
- Meta-analysis

Things to look for in a study

- Peer-reviewed, reputable journal
- Qualitative and unblinded researchers
- Theoretical rationale – chain of argument
- Scientific method
- Description and relevance of the sample
- Data
- Reporting of limitations

Evaluating a body of evidence

- Consistency
- Clinical impact
- Generalizability
- Applicability

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