Evidence-Based Interventions: Translating Research to Practice

Markeda Newell, PhD
Associate Professor
School Psychology
Loyola University Chicago

Mustard Seed Conference
October 10, 2016
Evidence-Based Interventions

Purpose:

- To interpret intervention outcome data to determine effectiveness
- To understand how to find evidence-based interventions
- To understand how to translate EBIs into practice
What is evidence?

Different fields of study within and outside of education have different meanings for what constitutes evidence.

What constitutes evidence in education?

Evidence is a broad construct that primarily refers to the outcome of scientific research studies that have been conducted to the effectiveness and/or efficacy of programs and practices. Note: studies on processes, relationships, etc. are also included.

What is an evidence-based intervention, generally?

An intervention that has been experimentally tested to show that it can improve a behavior (e.g., academic skills, behavioral skills, attitudes, etc.) better than no intervention (control), current intervention (treatment-as-usual) or another intervention (alternative).
How do I know if the intervention is more effective than the control?
Statistics: p-value and effect size

P-value (significance test)
- Probability that this outcome did not occur by chance
- You want to see a p-value of .05 or less (i.e., .00-.05)

Effect Size is the magnitude of the effect
Interpreting Effect Size
- ES can be any number and +/- does not inherently mean positive or negative effect
- ES = 0 No intervention effect
- ES = .20 small; .5 is medium, and .8 is large (Cohen)
Evidence-Based Practice

What is an evidence-base?
- “accumulation of evidence” that can inform practice (NRC report)
- Evidence can be interpreted broadly, which gives rise to significant challenges when building an evidence-base!

Major Challenges in Identifying Evidence (all disciplines)
- Number of studies to constitute an “evidence-base”
- Types of Research Designs
  - Randomized Controlled Trials (RCTs) – Experimental Designs
  - Quasi-experimental designs
  - Meta-Analysis
- Replication, diversity in samples, settings
- Evidence (i.e., knowledge) does accumulate and build in education, but it is not linear and findings are contested or discredited
EBI and Multiculturalism

What are the challenges?

- Recruitment of minorities into RCTs
  - Not enough participants for meaningful analysis (especially for low-incidence disorders)

- Obtaining a representative sample of ethnic minorities in the sample
  - (vary across SES, religion, race, geography, etc.)

- Language (translation/interpreters, measurement/construct/linguistic equivalence)

- Skepticism about random assignment and treatments
EBI and Multiculturalism

EBP and Multiculturalism

The increasing demographic and cultural diversity of the US dictates the need for educators who are competent to serve the population – Why?

- You serve the most demographically diverse population as well as the most minorities across all child service providers.

What is needed?

- Multicultural Competence AND
- Evidence-based practices that are appropriate for the clients
  - Limited evidence is very concerning given that it takes about 17 years for research to be used in practice (Balas, 1998) and it can take 3-5 years to fully implement a system-level intervention (Fixsen et al., 2007)
EBI and Multiculturalism

Approaches to Multicultural Evidence-Based Intervention

Finding interventions with samples that match your demographics
- Limitation: demographics are imperfect indicator of culture

Culturally-relevant intervention
- Limitation: very few

Identifying active ingredients or causal mechanisms to modify interventions
- Limitation: active ingredients are not often identified

Using any intervention and focusing on the therapeutic alliance, progress monitoring, and treatment acceptability
- Limitation: can take longer to find an effective intervention
EBI and Multiculturalism

- **Adopt, Adapt, or Abandon** (Morales and Norcross, 2009)
  - **Adopt**
    - Culturally-relevant intervention
    - Interventions with matching demographics
    - Use existing evidence-base interventions and evaluate Outcomes as well as acceptability
  - **Adapt**
    - Make modifications to the structure and/or content of the intervention without changing the active ingredients
  - **Abandon**
    - Do not use the intervention
Finding EBIs
Review of EBI Databases

EBI Databases

As you can see, developing and identifying EBIs is an arduous task.

Organizations and individuals decided to do this work for us!

Caveats:

- Different organizations have different standards for evidence quality
- Different organizations review different interventions
- Different organizations may review the same interventions, but may get different quality outcomes
Review of EBIs

What Works Clearinghouse
- Funded by the US Dept. of Education (Institute of Education Sciences)

Purpose: To identify and disseminate credible evidence on educational policies and practices
- Covers a range of educational topics from reading curriculum to college preparation to dropout prevention
- Provides intervention reports, practice guides, and quick reviews

Review of EBI Databases

Johns Hopkins Best Evidence Encyclopedia
- Center for Data-Driven Reform in Education
- Codes and disseminates academic interventions
- http://www.bestevidence.org/index.cfm

Evidence-Based Intervention Network
- Collaborative effort between East Carolina State University, Indiana University-Bloomington, and University of Missouri
- Only database developed by school psychologists
- Only database developed based on functions of behavior vs. types of behavior
- http://ebi.missouri.edu
Review of EBI Databases

- Video #1 (53 minutes)
  - Selecting an EBI
  - What Works Clearinghouse
  - BEE

- Video #2: (18 minutes)
  - EBI Network
  - [http://www.youtube.com/watch?v=rzRnOXNvAo](http://www.youtube.com/watch?v=rzRnOXNvAo)
Social-Emotional & Mental Health Databases

- Substance Abuse and Mental Health Services Administration (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP)
- Collaborative for Academic, Social, and Emotional Learning (CASEL)
- Campbell Collaboration
- Cochrane Library
- Center for Evidence-Based Practices: Young Children with Challenging Behaviors (renamed TACSEI)
Databases

NREPP

What is NREPP?

Division of SAMHSA within the US Dept of Health and Human Services that focuses on identifying and disseminating scientific research on interventions for mental health and substance use

http://www.samhsa.gov/nrepp

Let’s review this database!
Databases

CASEL
- Researchers who evaluate interventions for SEL
- Goal is to get SEL standards into state standards so that SEL can be taught just like academic subjects

CASEL website: https://casel.squarespace.com

Watch video on CASEL Guide (Database)
- http://www.youtube.com/watch?v=JiqkUpSebZk
Databases

- Center for Evidence-Based Practices: Young Children with Challenging Behaviors (renamed TACSEI)
  - Technical Assistance Center on Social Emotional Intervention for Young Children (TACSEI)
  - Technical assistance organization
  - [http://challengingbehavior.fmhi.usf.edu/index.htm](http://challengingbehavior.fmhi.usf.edu/index.htm)

- Campbell Collaboration (C2)
  - What is C2?
    - Group of international research scientists that review research to inform practice and social policy in education, criminal justice, etc.
  - [http://www.campbellcollaboration.org](http://www.campbellcollaboration.org)
Implementing EBIs
Evidence-Based Interventions

Implementing Interventions

- Does the intervention fit the context?
- Does the implementer have the skills and resources?
- Do we have a clear plan for implementation?
- How can I ensure the intervention was implemented correctly?
- How much did the implementer and client like/accept the intervention?

National Implementation Research Network

- Support network for implementing interventions
  - Needs
  - Capacity
  - Skills Needed
  - Sustain Implementation

http://implementation.fpg.unc.edu/modules-and-lessons
How to measure treatment integrity?

Direct vs. Indirect Measures (see http://www.rtinetwork.org/getstarted/evaluate/treatment-integrity-protocols for list of integrity measures)

Direct Measure
- You observe the implementation.
- Direct measures include systematic observation in the classroom (e.g., face-to-face, videotaping, audiotaping)

Indirect Measure
- You get a report from the implementer but you do not observe the implementation
- Indirect measures include self-report, checklists, rating scales, interviews, etc.
To ensure that the teacher will implement the components correctly, you need to make sure the teacher understands each component and knows how to implement each component. How can you do this?

- Explain the intervention (in detail)
- Model the implementation for 1-2 sessions
- Check-in after a few sessions to see if the teacher has any questions/difficulties

How can I keep the teacher on board during implementation?

- Performance feedback on his/her implementation as well as how the student is doing based on progress monitoring data
Treatment Acceptability

Social validity--to what extent is this intervention important and helpful to me
Should me measured for implementer and student

You can create your own measure or use an existing measure

Existing Measures

- Review of Measures

- Behavior Intervention Rating Scale
Summary

- Understand the strengths and limitations
  - Design to increase maximum likelihood of success not guaranteed

- Interpret outcome data
  - P-value and Effect Size
  - Consider needs of students (cultural or other differences)

- Determine whether you need to adopt, adapt, or abandon

- Use existing databases to increase efficiency

- Implement with integrity so that programs can be sustained
Evidence-Based Interventions: Translating Research to Practice

Markeda Newell, PhD
Associate Professor
School Psychology
Loyola University Chicago

Mustard Seed Conference
October 10, 2016