Integrating Evidence via Systematic Reviews

Mark W. Lipsey
Peabody Research Institute
Vanderbilt University

Evidence for Violence Prevention Across the Lifespan and Around the World:
IOM Workshop
January 23, 2013
Motivating circumstances for systematic reviews

- Multiple methodologically credible studies of the effects of an intervention of interest on one or more outcomes of interest.

- Recognition that no one study provides a confident basis for action (e.g., possible bias, idiosyncrasies, uncertain generalizability).

- Need for an objective summary of the findings of the full body of relevant evidence that assesses the nature and magnitude of effects and highlights implications for practice and policy.
How systematic reviews are systematic

Approaches evidence integration as a form of methodologically rigorous research:

- Explicitly stated research questions
- Specified criteria for eligible studies
- Thorough, well documented literature search; reliable screening judgments
- Objective, reliable coding of the information reported in the eligible studies
- Statistical analysis of the resulting data when possible
- Reporting of results with transparency about data sources, procedures, limitations, etc.
Meta-analysis: A systematic review of quantitative research findings

**Effect size: The key feature**

- Statistical indices of the direction and magnitude of quantitative relationships
- Standardized in ways that allow comparison across different measures of the outcome of interest
- Defined so they do not confound the size of the effect with its statistical significance (a function of sample size)
- Allows statistical analysis of the distribution of effects found across studies
- Contrasts sharply with “vote counting” of statistically significant findings
Effect size distribution: Reoffense outcomes of CBT programs for juvenile and adult offenders

Cognitive-Behavioral Interventions
Reidivism Effect Sizes (N=58)

Average recidivism reduction of 25%

Effect Size (logged odds ratio)
Mix of brand name and home grown CBT programs represented in the available studies
Effect sizes analyzed as a function of study and program characteristics

- Study methods: e.g., design, measurement
- Sample characteristics: e.g., age, gender, ethnicity, risk
- Juvenile justice control: e.g., diversion, probation, incarceration
- Type of program: e.g., intervention philosophy, treatment type
- Program implementation: e.g., amount of treatment, completion rates, quality of implementation

Effect sizes for recidivism outcomes
Characteristics of CBT programs associated with larger effects on reoffense rates

Higher risk offenders

Number of sessions per week (2x or more)

Quality of treatment implementation
  - small proportion of noncompleters
  - monitoring of program implementation for fidelity

Program components included
  - anger control
  - interpersonal problem solving
Comparative meta-analysis: Which type of intervention has the largest effects?

Mean effect sizes for skill building interventions with juvenile offenders

- Behavioral
- Cognitive-behavioral
- Social skills
- Challenge
- Academic
- Job related

% Recidivism Reduction from .50 Baseline
Comparative meta-analysis: Which intervention approach has the largest effects?

Therapeutic approaches

Control-oriented approaches

% Recidivism Reduction from .50 Baseline
Where to find high quality systematic reviews

- The Campbell Collaboration: Crime & justice, social welfare, education, international development

- The Cochrane Collaboration: Health care and health policy
  [http://www.cochrane.org](http://www.cochrane.org)

- Publications by many agencies, knowledge transfer organizations, and academic researchers
Campbell Collaboration systematic reviews of interventions for violence

Court-mandated interventions for individuals convicted of domestic violence. Feder, Austin, & Wilson, 2008.

Advocacy interventions to reduce or eliminate violence and promote the physical and psychosocial well-being of women who experience intimate partner abuse. Ramsay, Carter, Davidson, et al., 2009.


Effects of second responder programs on repeat incidents of family abuse. Davis & Weisburd, 2008.
Thanks!

Contact information:
mark.lipsey@vanderbilt.edu