Using Meta-Analysis of Many Studies to Summarize Evidence about Program Effectiveness

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What is evidence based practice?

There's more than one way of defining *practice*

and

corresponding differences in the *evidence* that supports it

1. The specific operating procedure (SOP) of a particular program

Example: Tumbleweed Family Counseling program in Tucson, AZ

Evidence base:

- Evaluation study of the effects of that program delivered by that provider (usually no more than one study).

2. ‘Brand name’ protocol programs

Examples: Functional Family Therapy, Multisystemic Therapy, Multidimensional Treatment Foster Care

Evidence base:

- Evaluation studies of implementations of that protocol in different places (usually only a few studies)

EBP is currently defined around 'brand name' programs

Lists of "model" programs, e.g.:

- Blueprints for Violence Prevention
- National Registry of Evidence-based Programs and Practices (NREPP)
- OJJDP Model Programs Guide

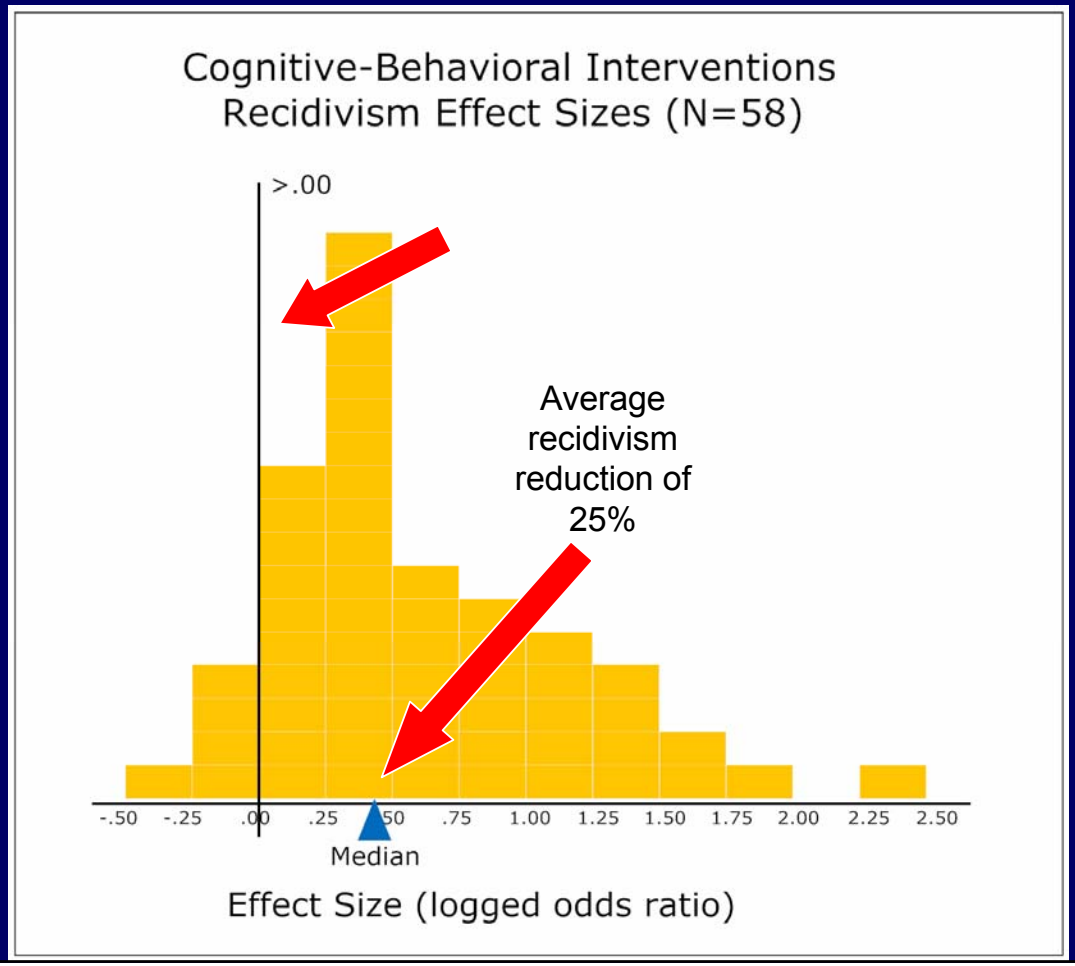
3. Generic intervention types

Examples: Interpersonal skills training, family therapy, group counseling, cognitive behavioral therapy

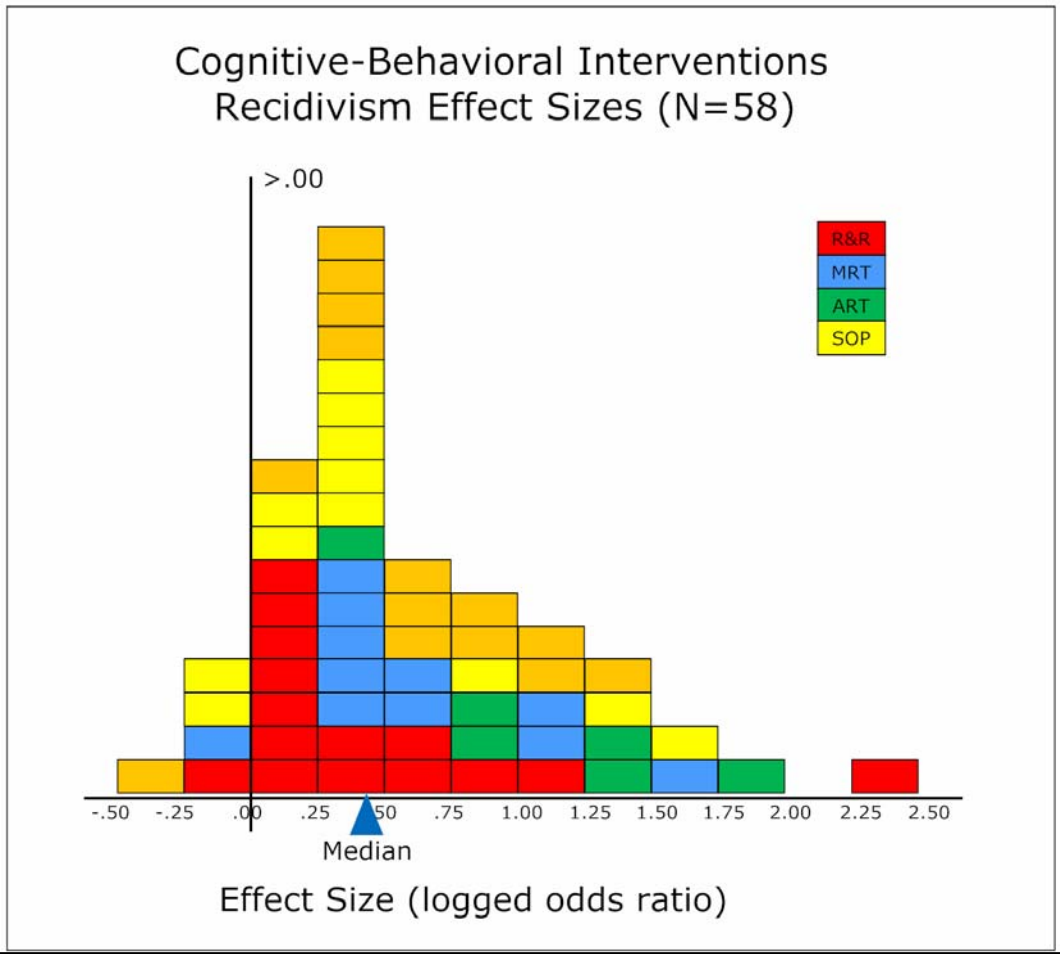
Evidence base:

- Evaluation studies of different programs of that type in different places (often many studies).

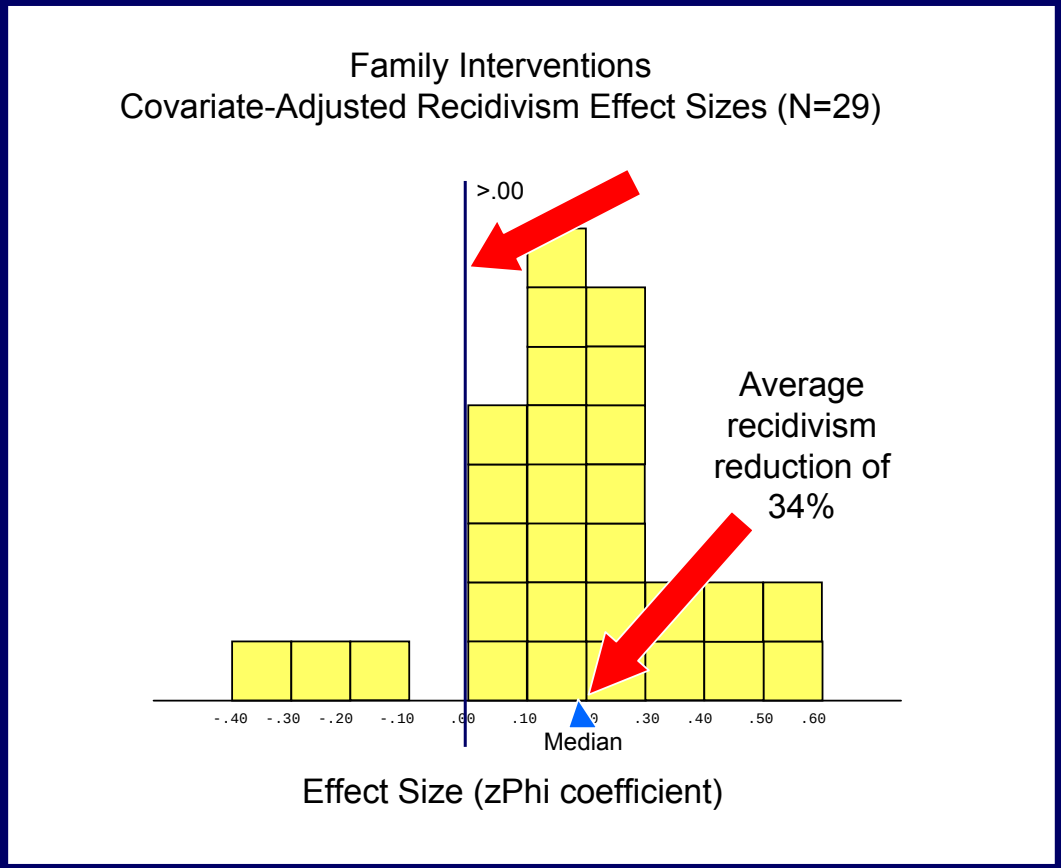
Effects for a generic intervention



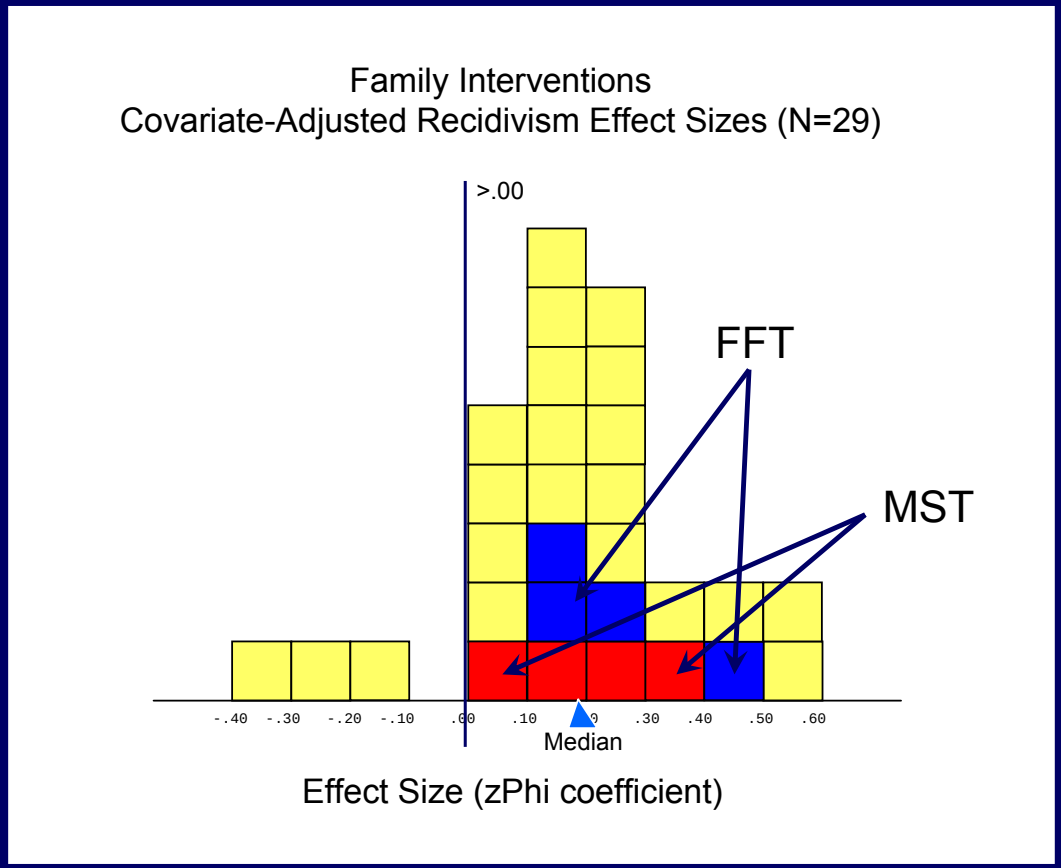
Mix of brand name & SOP programs



Programs with a Primary Family Emphasis



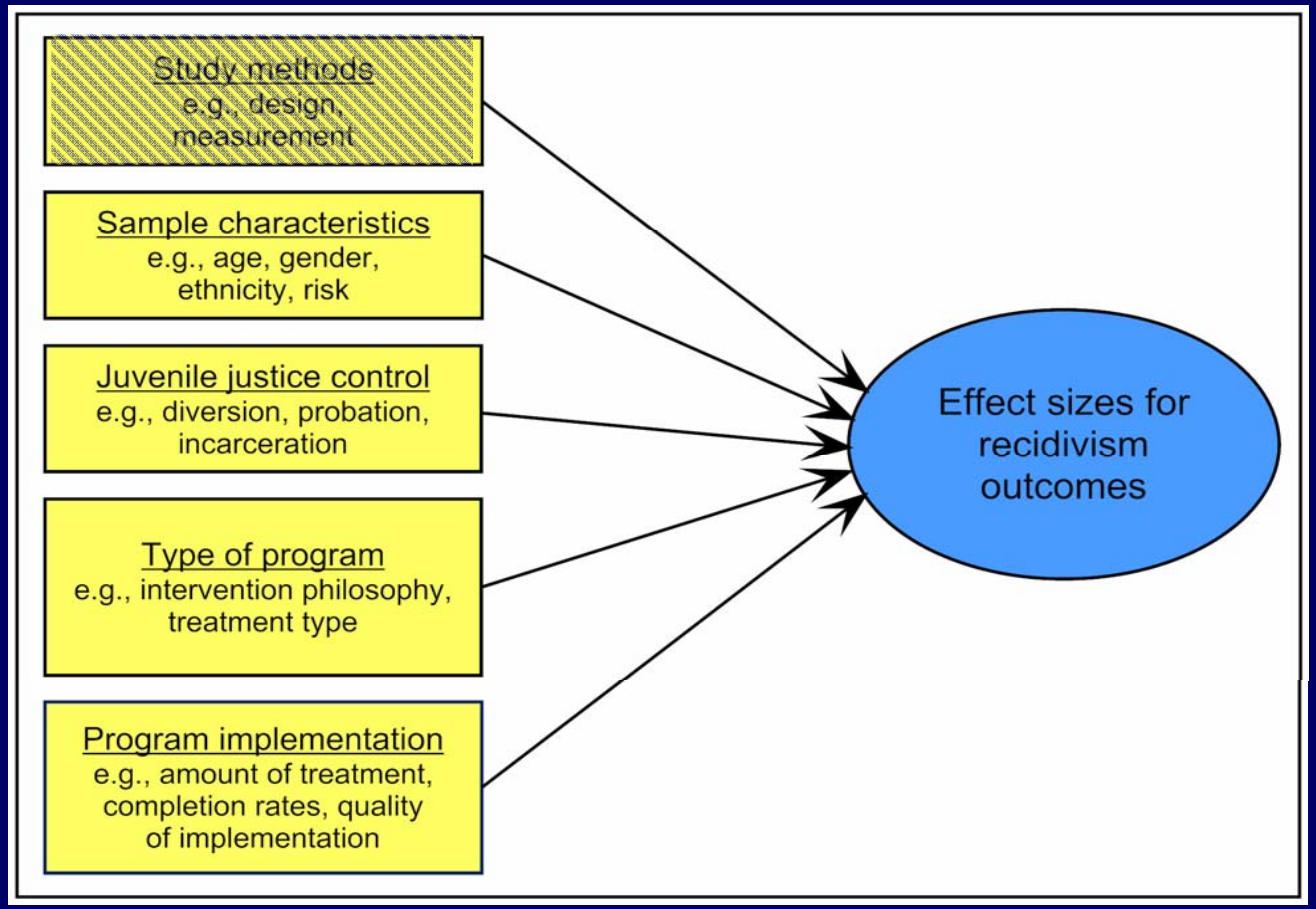
Blueprint Programs with a Primary Family Emphasis



Database of existing studies of interventions for juvenile offenders

- 548 independent study samples from 361 primary research reports
- Juveniles aged 12-21 received an intervention intended to have positive effects on their subsequent delinquency
- At least one delinquency outcome; assignment was random or, if not, pretreatment differences were reported or matched
- Conducted in English speaking countries between 1958 and 2002

Effect sizes analyzed as a function of study and program characteristics



Key Findings

Some characteristics of the juveniles matter

Effect size differences associated with:

- Delinquency risk (strong positive)
- Aggressive history (moderate negative)

Effect size differences not associated with:

- Mean age
- Gender mix
- Ethnicity

JJ supervision doesn't matter much (with risk, etc. controlled)

Effect size differences not associated with:

- No JJ supervision (prevention programs)
- Diversion
- Probation/parole
- Incarceration

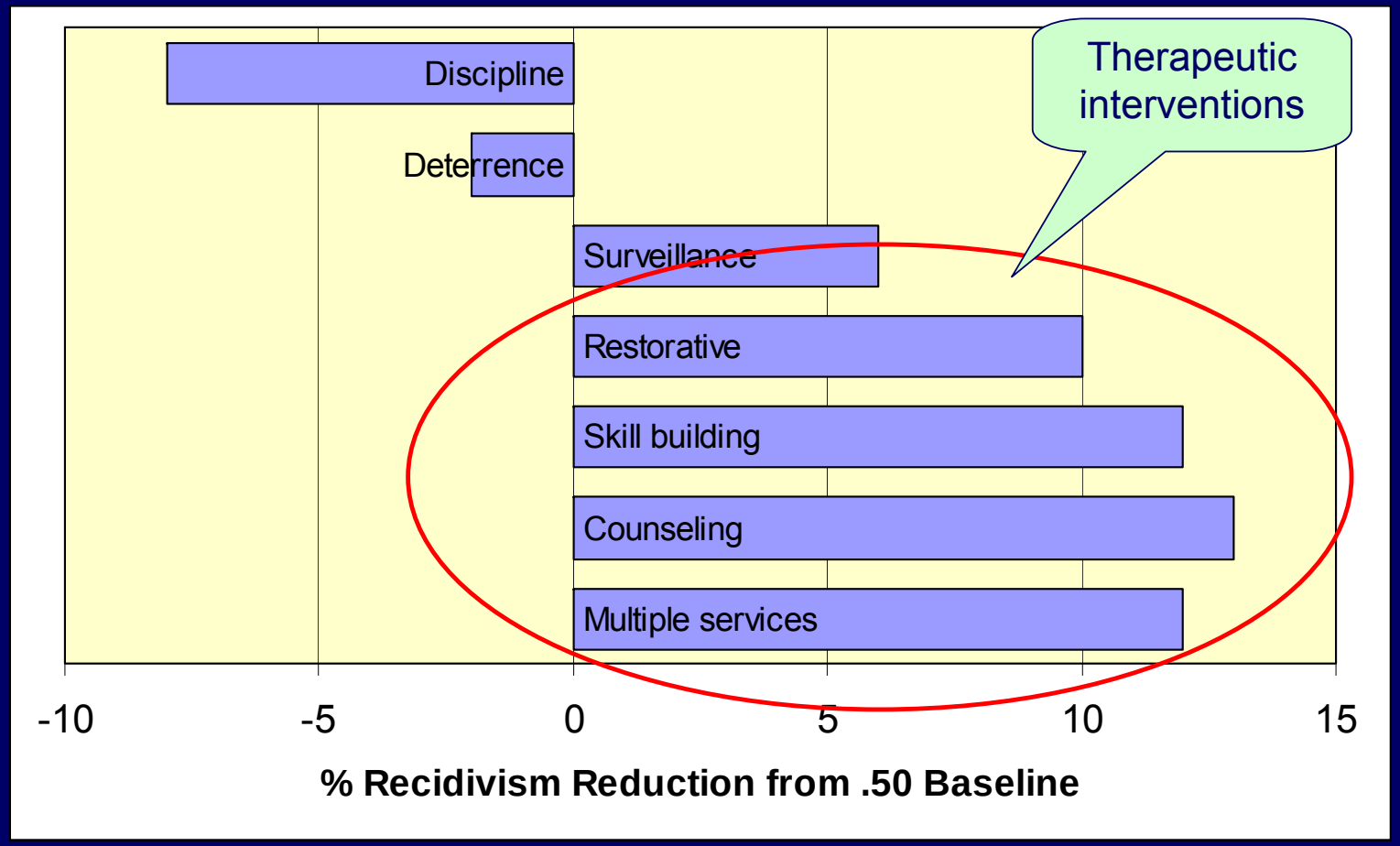
Type of program matters

Programs are identified first according to their broad approach or "philosophy:"

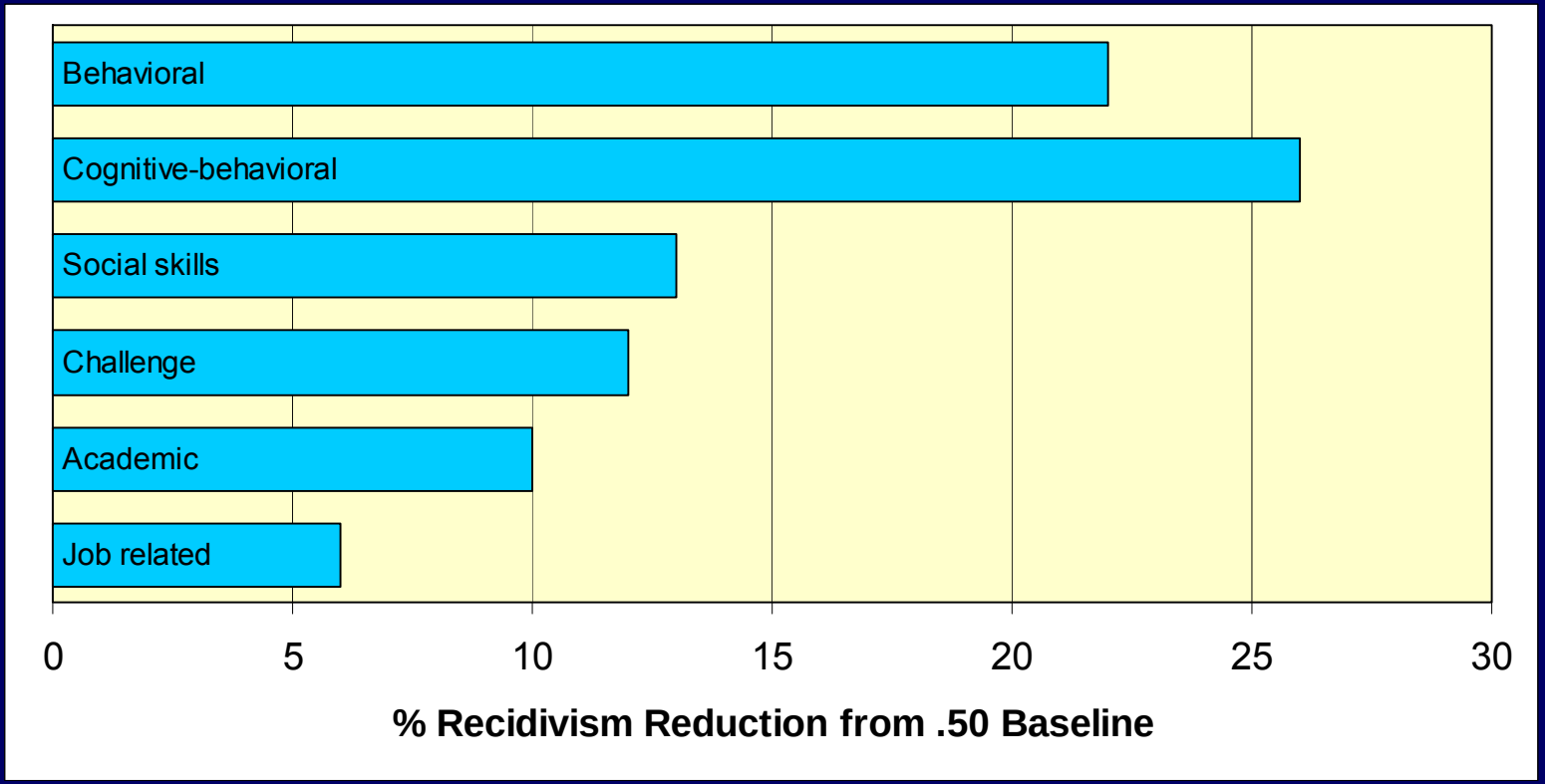
- Control philosophies
- Therapeutic philosophies

And, second, by their generic type, e.g., group counseling, interpersonal skills, cognitive behavioral therapy

Treatment “philosophy” matters



Type of intervention: Skill-building



Service amount and quality matters

Effect size differences associated with:

- Duration of service
- Total hours of service
- Quality of implementation

Summary of key findings

- Larger effects with high risk cases
- Effective interventions use a therapeutic approach
- Within a therapeutic category, some program types are more effective than others
- For a given program type, service must be delivered in adequate amounts and quality.

Operationalizing these practice guidelines

- A rating system for each program type within the therapeutic philosophies
- Applied to individual programs based on data about the services they actually provide
- Pilot projects with the juvenile justice systems of Arizona, North Carolina, & Tennessee

Points assigned proportionate to the contribution of each factor to recidivism reduction

Target values from the meta-analysis (generic) OR program manual (manualized)

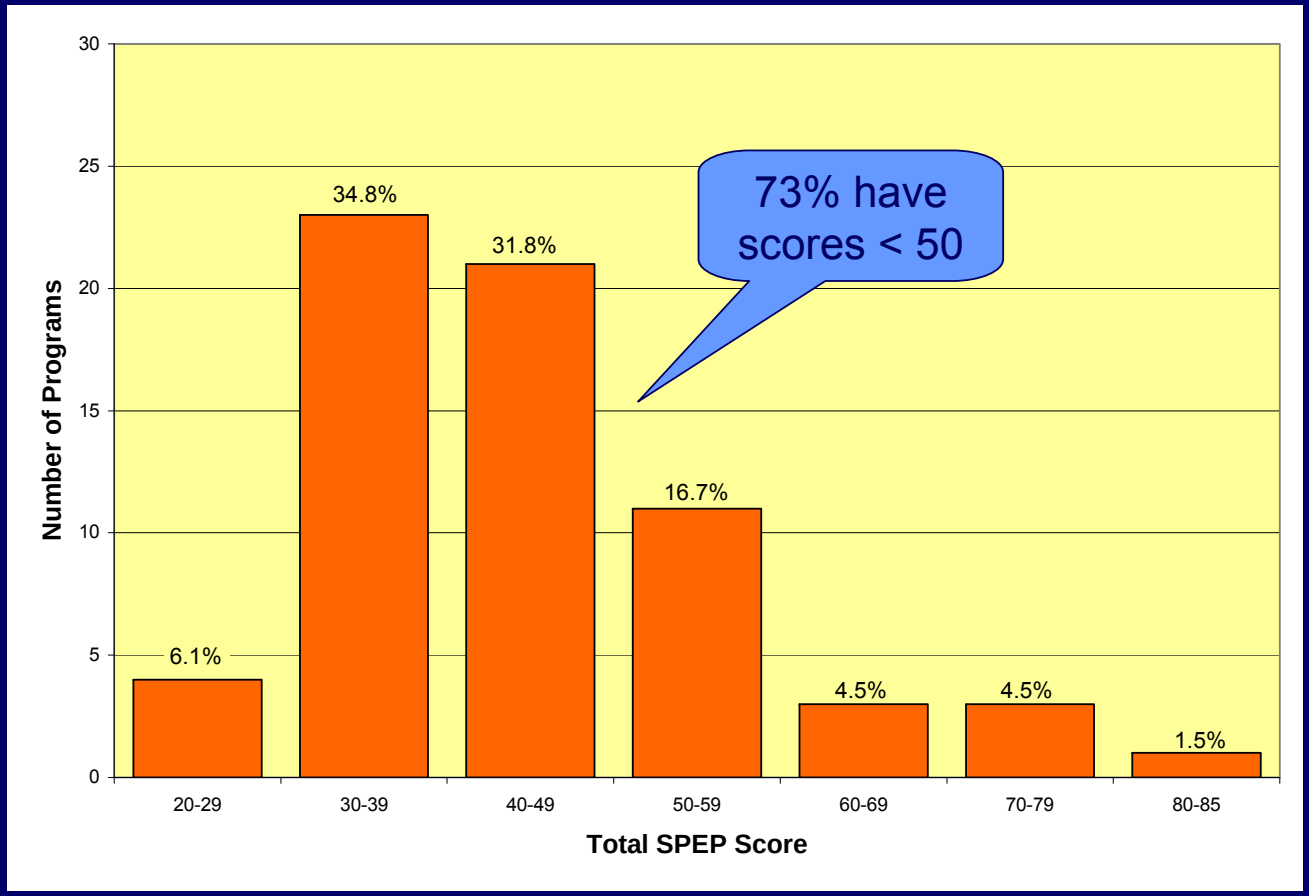
Standardized Program Evaluation Protocol (SPEP) for Services to Probation Youth

	Possible Points	Received Points
Primary Service: High average effect service (35 points) Moderate average effect service (25 points) Low average effect service (15 points)	35	
Supplemental Service: Qualifying supplemental service used (5 points)	5	
Treatment Amount: Duration: % of youth that received target number of weeks of service or more: 0% (0 points) 60% (6 points) 20% (2 points) 80% (8 points) 40% (4 points) 100% (10 points)	10	
Contact Hours: % of youth that received target hours of service or more: 0% (0 points) 60% (9 points) 20% (3 points) 80% (12 points) 40% (6 points) 100% (15 points)	15	
Treatment Quality: Rated quality of services delivered: Low (5 points) Medium (10 points) High (15 points)	15	
Youth Risk Level: % of youth with the target risk score or higher: 25% (5 points) 75% (15 points) 50% (10 points) 99% (20 points)	20	
Provider's Total SPEP Score:	100	[INSERT SCORE]

Validity study: Does it work?

- Arizona Juvenile Justice Services Division
- Programs provided during 2005-06 to juvenile probationers in five pilot counties
- 1490 juveniles who received services from 66 SPEP rated programs
- 6-month recidivism data on all; 12-month recidivism for most

Distribution of SPEP scores across programs



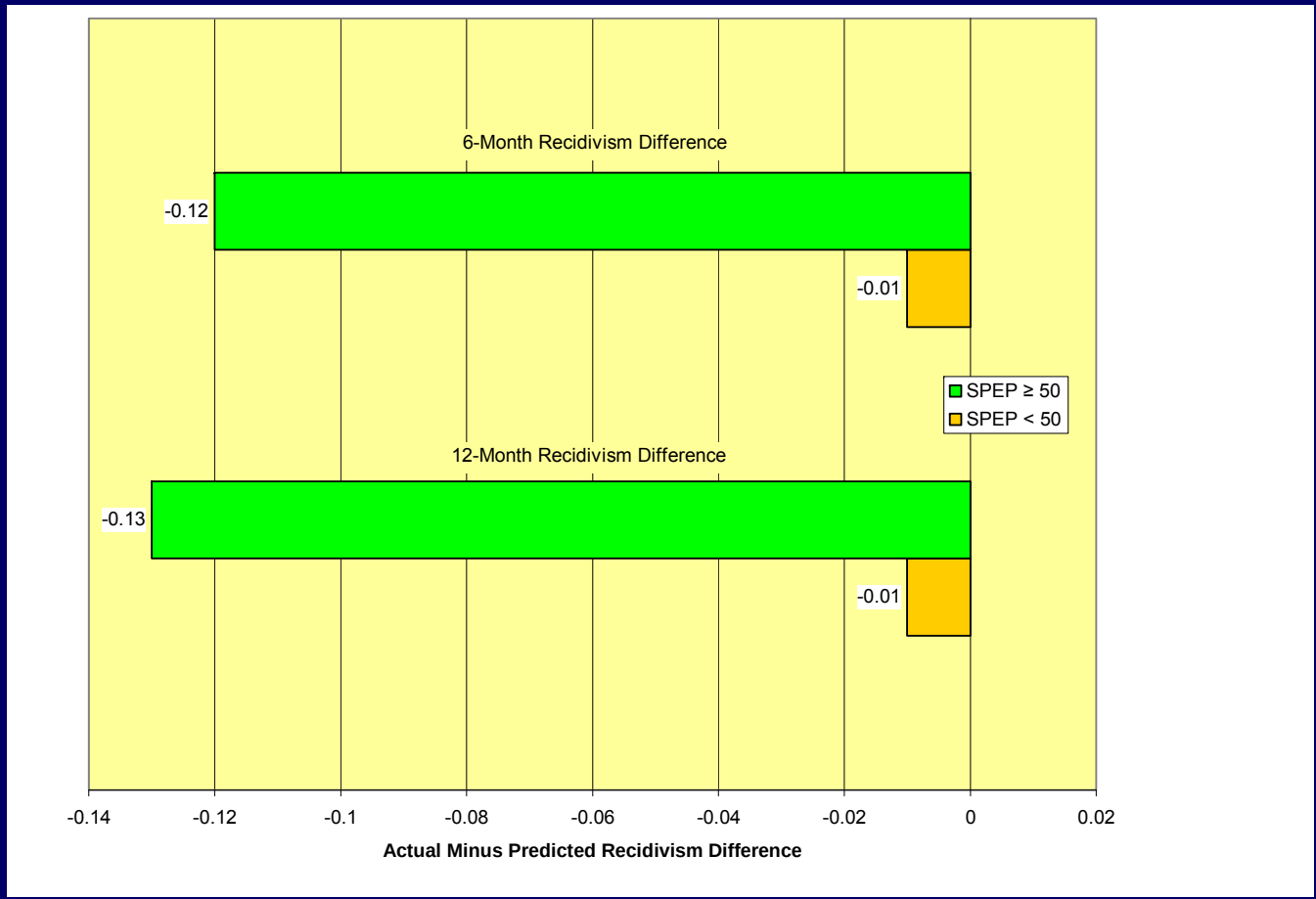
Estimate expected recidivism based on pre-existing risk factors

Recidivism predicted from archival data on:

- number and nature of prior offenses
- risk rating by probation officers
- age, sex, race, county
- number of prior service events

Actual recidivism: .27 at 6 mo, .44 at 12 mo

Actual vs. predicted recidivism for providers with scores ≥ 50 and < 50



Summary

- No one approach to EBP: There are different definitions of practice with correspondingly different bodies of evidence.
- Meta-analysis can be used to develop evidence-based practice profiles for generic interventions with wider applicability than other EBP approaches.
- Real world programs that better match these profiles do indeed show better outcomes.

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