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Issues in Defining and Applying Evidence-Based Practices Criteria for Treatment of Criminal-Justice Involved Clients†

Michael L. Prendergast, Ph.D.*

*Director, Criminal Justice Research Group, Integrated Substance Abuse Programs, Semel Institute for Neuroscience and Human Behavior, University of California, Los Angeles, CA

Abstract

Evidence-based practice (EBP) applies the principles and techniques of evidence-based decision making to interventions intended to improve, or ameliorate, the social or clinical problems of affected individuals, including offenders with drug abuse problems. This article provides a general overview of EBP, particularly as it applies to treatment and other interventions for offenders with problems involving drugs (including alcohol). The discussion includes a definition of EBP, notes the implications of using EBPs to make policy and clinical decisions, lists the various efforts by government and academic organizations to identify practices that can be considered evidence-based, describes the criteria used by such organizations to evaluate programs as being evidence-based, raises some cautions about the use of EBPs, and ends with some challenges in disseminating and implementing EBPs.

Keywords

drug abuse; evidence-based practices; offenders; treatment programs

A staff member in a state correctional agency has been tasked with developing and implementing a treatment program for high-risk offenders with drug abuse problems as one of the department's strategies to reduce recidivism. Which program should she chose? The clinical director of a community treatment program is dissatisfied with his program's method of assessing clients, most of whom are admitted under criminal justice funding. He has read or heard about several assessment instruments, but which one is most appropriate for his program and clients? A legislator asks his staff to determine which state-funded treatment programs for offenders appear to be effective in reducing drug use and crime. How do his staff members go about their task?

Policy makers and clinicians who deal with offenders face such questions constantly in the course of their work. How do they determine what is effective? Who can they consult to find out what works? How do they sort through the findings and claims about the many treatment programs and approaches that are available? And once they select and implement a program, how can they be sure that it lives up to its promise? Providing answers—or at least guidance—to these questions is the task of the field of evidence-based practice as it pertains to treatment for offenders. Developing out of the movement of evidence-based medicine, which began in the early 1990s (Evidence-based Medicine Working Group 1992), evidence-

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Please address correspondence and reprint requests to Michael L. Prendergast, Ph.D., UCLA ISAP, 11075 Santa Monica Blvd., Suite 100, Los Angeles, CA 90025; mlp@ucla.edu; phone: 310-267-5503; fax: 310-312-0559.

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based practice (EBP) more broadly applies the principles and techniques of evidence-based decision making to all interventions intended to improve, or ameliorate, the social or clinical problems of affected individuals, thereby also improving public health and public safety.

This article provides a general overview of EBP, particularly as it applies to treatment and other interventions for offenders with drug use problems. The discussion includes a definition of EBP, notes the implications of using EBPs to inform policy and clinical decisions, lists various efforts by government and academic organizations to identify practices that can be considered evidence-based, describes the criteria used by such organizations to evaluate programs as being evidence-based, raises some cautions about the use of EBPs, and ends with some challenges in disseminating and implementing EBPs. Where appropriate, the points raised are illustrated with examples from offender treatment.

DEFINITION AND IMPLICATIONS

Evidence-based practice has been defined in various, but similar, ways. The definition offered by the Institute of Medicine is generally accepted and appropriate for our purposes: "Evidence-based practice is the integration of best research evidence with clinical expertise and patient values" (IOM 2001: 147; see Glasner-Edwards & Rawson 2010 for a discussion of this definition in relation to addiction treatment). The definition includes three elements. "Best research evidence" is generally regarded as evidence from experimental studies that include randomization, although evidence from other designs is also accepted depending on the research question. In assessing the effectiveness of interventions, randomized trials conducted in clinical settings or community settings are regarded as having the highest level of internal validity and are least subject to bias. Evaluations of the research on a particular topic often use a hierarchy of evidence that enables evidence to be "graded" in terms of its quality (see Table 1). The evidence on a given topic is typically summarized in a systematic review or meta-analysis, assuming that a sufficient number of studies are available.

"Clinical expertise" refers to the need for judgment in making decisions about treatment, in which the clinician or counselor combines recommendations from research with training, experience, and understanding of client characteristics. That is, the research evidence, however strong, cannot provide clear guidance for treating every client in every circumstance. The clinician needs to adapt an evidence-based practice to the needs and characteristics of the client and to the local treatment setting. At the policy level, an agency administrator or program executive brings to the application of research evidence previous experience with different types of interventions and knowledge of resources (human and financial) needed to implement a new practice. What remains unclear is how much adaptation can take place until the practice so departs from the original model (often described in a practice guideline or treatment manual) that it is no longer evidence-based but idiosyncratic to the clinician. Nevertheless, contrary to the criticism that evidence-based practice is a "cookie cutter" approach that translates poorly to typical clinical settings (Garfield 1996), sophisticated understanding and application of EBP acknowledges the need to integrate clinical expertise and judgment with systematic research on what is effective.[1] In addition, many practices are a routine part of treatment systems and programs, and given the resources required to conduct credible evaluations, it may be many years—if ever—before they have sufficient research support to be considered evidence-based. Thus, there is

[1]The original definition of evidence-based medicine makes this clear: "The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research" (Sackett et al. 1996: 71). Similarly, the definition developed by the American Psychological Association's Presidential Task Force on Evidence-Based Practice (2006: 273) is: "Evidence-based practice in psychology is the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences."

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considerable opportunity—indeed, necessity—for exercising clinical and professional judgment based on experience and "best practices."

The inclusion of "patient values" in the definition of evidence-based practice acknowledges that the effectiveness of a particular treatment is likely to be increased when it is "responsive to the patient's specific problems, strengths, personality, sociocultural context, and preferences" (APA 2006: 278). However strong the evidence for a specific practice, it is unlikely to bring about the desired change for a client or type of client if it does not address their particular needs or if it is not in accord with their values or preferences. While patient values and preferences are an important consideration in implementing evidence-based practices, they may be difficult to apply where most interactions between counselors and clients occur, that is in group-based settings. Also, the requirements of the criminal justice referral agency (e.g., court, parole) may place limits on the degree to which the treatment can be bent to the client's preferences. Here again, clinical experience is important, as the counselor negotiates the competing demands of what the evidence-based guidelines recommend, what the funding agency expects, and what the client prefers and values.

An assessment of the effectiveness of a specific type of intervention needs to specify a set of outcomes relevant to the problem being addressed and the characteristics of the client population. Thus, for offenders with drug use problems, the main outcomes are recidivism and drug use, although other outcomes, such as employment and psychological status, may also be of interest. Particularly in cases where criminal justice agencies are funding treatment because of its effect on recidivism, it needs to be shown that proposed interventions for offenders reduce crime, as well as drug use.

By its nature, the definition and promotion of evidence-based practice has implications for design, funding, and conduct of treatment. Most generally, the intent and effect of EBP is to shift the basis of decision making about which interventions to offer (and fund) from authority, intuition, rules of thumb, tradition, and anecdote to a rational, transparent, systematic process based on evidence from scientific research and on consensus among experts. More specifically, the development of evidence-based practices necessarily identifies treatments and practices that are evidence-based and those that are not and privileges the former over the latter. Three types of practices or interventions do not meet the criteria of being evidence-based:

1. A practice may not have been evaluated at all or not without the use of any of the better research designs. Although lack of evidence does not mean lack of effectiveness, because research is necessary to establish effectiveness, a practice without a research base will not appear on a list of evidence-based practices.
2. A practice was evaluated in one or two studies but does not meet the criteria for being evidence-based. If the findings are positive, such a practice is often considered "promising" and may become evidence-based as further research appears.
3. Finally, a practice has been subject to sufficient research of high quality, but the evidence, on balance, is negative. Such practices are not effective and may even be harmful.

EVIDENCE-BASED PRACTICE INITIATIVES

A number of agencies and organizations have developed criteria for judging whether particular practices can be considered evidence-based and, in many cases, have posted lists of practices that qualify as evidence-based. The more prominent efforts, with an emphasis on nonmedical interventions, are shown in Table 2, along with their website addresses. For

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interventions for offenders (juveniles and adults), the initiatives of most relevance are Preventing Crime (see Sherman et al. 2002), the National Registry of Evidence-Based Programs and Practices, the Model Program's Guide, the Washington State Institute for Public Policy (see Aos, Miller & Drake 2006), and the Campbell Collaboration.

The criteria for determining whether interventions are evidence-based differ across the agencies and organizations that produce lists of EBPs. In reviewing these various efforts, each evidence-based practice initiative has its own set of criteria (although there are similarities as well), which can lead to some practices being included in some lists but not others. Those interested in identifying effective practices for offenders will need to carefully review the descriptions and the review procedures for the various EBP initiatives. To illustrate the criteria for listing EBPs and the differences across lists, two EBP efforts that include interventions for offenders are briefly described. (For an account of how three separate federal evidence-based initiatives reviewed one intervention, see Kim et al. 2010.)

In 1997, under Congressional authorization, researchers at the University of Maryland produced a report entitled *Preventing Crime: What Works, What Doesn't, What's Promising* (Sherman et al. 1997). To aid in their review of over 500 crime prevention programs, the researchers developed the Maryland Scientific Methods Scale to assess the methodological quality of studies of crime prevention programs. The scale has five levels (Farrington et al. 2002), which from lowest to highest are:

Level 1 Correlation between a prevention program and a measure of crime at one point in time.

Level 2 Measure of crime before and after the program, with no comparable control condition.

Level 3 Measures of crime before and after the program in experimental and comparable control conditions.

Level 4 Measures of crime before and after the program in multiple experimental and control units, controlling for other variables that influence crime.

Level 5 Random assignment of program and control conditions to units.

Levels 1 and 2 are generally considered to be inadequate and uninterpretable. Level 3 is the minimum level considered to be adequate to draw conclusions about effectiveness. Levels 4 and 5 provide a high level of confidence in the validity of the findings. The rating of a study can be downgraded by one level if there are serious problems in any of the following areas:

- Was the statistical analysis appropriate?
- Did the study have low statistical power to detect effects because of small samples?
- Was there a low response rate or differential attrition?
- What was the reliability and validity of measurement of the outcome?

After the studies were rated, the various programs were then sorted into one of four categories:

What Works	At least two Level 3–5 studies showing statistically significant results in the desired direction and the preponderance of all available evidence showing effectiveness.
What Does Not Work	At least two Level 3–5 studies showing statistically significant results showing ineffectiveness and the preponderance of all available evidence showing ineffectiveness.
What Is Promising	At least one Level 3–5 study showing statistically significant results in the desired direction and the preponderance of the other studies showing effectiveness.
What Is Unknown	Any program that does not fall into one of the other categories.

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Crime prevention programs that met the "what works" category included treatment or rehabilitation programs that focused on risk factors for recidivism, prison-based therapeutic communities, and job training. Programs that met the "doesn't work" category included peer counseling and didactic programs for school-age children, boot camp programs, "scared straight" programs, and rehabilitation programs that did not focus on risk factors. Since the *Preventing Crime* findings were based on research conducted prior to 1996, it is likely that the appearance of additional studies in recent years would require revision in the ratings and in the categorization of some programs.

The Substance Abuse and Mental Health Services Administration (SAMHSA) maintains an online list of evidence-based practices as part of its National Registry of Evidence-Based Programs and Practices (NREPP; Hennessy, Finkbiner & Hill 2006). SAMHSA has developed NREPP as a "decision support tool" for selecting appropriate interventions for specific needs and populations and emphasizes that a listing on NREPP does not constitute the "endorsement, promotion, or approval" of SAMHSA. Because NREPP is a self-nominating system, not all interventions are submitted for review; of those submitted, not all are reviewed; of those reviewed, not all are accepted for listing. NREPP currently (spring 2011) lists 171 interventions in substance abuse and mental health, with new interventions being added regularly. Seven of these are categorized as substance abuse programs provided in correctional settings. Unlike *Preventing Crime*, which focused on generic programs (e.g., prison-based therapeutic community, job training), programs listed in NREPP are "branded" (e.g., Forever Free, Moral Reconation Therapy, Multidimensional Family Therapy).

Programs submitted and accepted for review by NREPP are rated by experts on the quality of research and on readiness for dissemination. Quality of research is rated on six criteria: reliability of measures, validity of measures, intervention fidelity, missing data and attrition, potential confounding variables, and appropriateness of analysis. Readiness for dissemination is rated on three criteria: availability of implementation materials, availability of training and support resources, and availability of quality assurance procedures. The listing of an intervention on the NREPP website includes the rating on each of these criteria, as well as a summary of the intervention, including contact information. Thus, for example, a correctional administrator can determine whether Moral Reconation Therapy is appropriate for substance-using inmates in a medium-security prison based on expert judgment, a detailed description of the features of the intervention, and discussions with the program developer.

META-ANALYSES OF TREATMENT PROGRAMS FOR OFFENDERS

As seen in Table 1, one of the methodologies included in the highest level of the hierarchy of evidence is meta-analysis. Efforts to establish evidence-based practices or to develop practice guidelines frequently draw on the findings of meta-analyses that have been conducted on the specific intervention of interest. Meta-analyses have the advantage over standard literature reviews in that they are more systematic and transparent and they typically produce a quantitative estimate of the magnitude of the treatment effect (or effect size; Lipsey & Wilson 2001). Numerous meta-analyses on programs that treat drug abuse generally, and offenders specifically, have appeared over the past two decades. They are useful complements to evidence-based practice initiatives such as Preventing Crime and NREPP. A summary of results of meta-analyses of relevance to treating drug-abusing offenders is provided in Table 3. The effect size of an intervention needs to be considered in relation to its cost. An intervention that has high costs for licensing, training, and supervision should have a relatively large effect size in order to be worth the investment to introduce and sustain it. By contrast, a low-cost intervention can be worthwhile even if its effects on outcomes are small. Unfortunately, most studies do not include a cost analysis

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that would provide a sound basis for decision making, although a less formal calculation may be possible based on discussion with the intervention developer.

LIMITATIONS OF RANDOMIZED DESIGNS FOR EVIDENCE-BASED PRACTICES

Although randomized control trials provide the highest level of evidence for the effectiveness of an intervention, it is important to note several limitations of such studies as they apply to the adoption of evidence-based practices. First, there are situations where clients cannot be randomized to different conditions for ethical or practical reasons, and evidence-based practice reviews of interventions where this is the case should take this into account. In particular, many state departments of corrections forbid or greatly restrict studies, randomized or otherwise, of medications or medical procedures. At the same time, policy makers and clinicians in the criminal justice system are becoming increasingly accepting of randomized studies, particularly for psychosocial and cognitive-behavioral interventions, and the number of situations in which randomization is not possible are fewer than is often believed (Lum & Yang 2005).

Second, new interventions are often tested for efficacy by the researchers who developed the intervention in highly controlled clinical settings, where the study sample is relatively homogeneous, staff are well trained and supervised, and adequate funding is available. The findings of such studies may not generalize to typical correctional or community settings, where the clientele is likely to be more heterogeneous, the staff have limited training, and programs may be struggling with inadequate funding. Ideally, the evidence-based review of an intervention will include at least one effectiveness study conducted in the community to provide an indication of its real-world application. If not, the outcomes of the purported evidence-based intervention when implemented in probation, prison, or parole could be disappointing. Still, on average, outcomes for evidence-based practices should be better than those for nonevidence-based practices.

Third, interventions typically consist of multiple components, but they are evaluated as a single “package.” It is seldom clear which of the components are the “active” ingredients of the intervention and which, if any, are “inert.” In principle, the components of an intervention can be evaluated in a “dismantling” design, but this is seldom done. Thus, in adopting an evidence-based intervention, the staff of a treatment program need to implement the intervention as a complete package, or guess which components can be dropped or modified if they are not suitable to local conditions or if staff do not have the required experience or training. Although the latter attempt may be considered a violation of the fidelity of the intervention, such concern about fidelity may be difficult to defend in the absence of knowledge regarding the active or essential components of an intervention. At the same time, those who modify an intervention may have little basis for their decisions about which components to change or drop. This tension between fidelity and adaptation is a problem that implementation science has yet to resolve (Durlak & DuPre 2008; McKleroy et al. 2006; Castro, Barrera & Martinez 2004).

Fourth, currently, lists of evidence-based practices provide some assurance that the particular practice or intervention has been found in several well-designed studies to be effective with the populations that were sampled and for the outcomes that were measured. That may mean that there are several evidence-based practices to choose from, but which one should a policy maker select for a specific setting or population? What is needed as the evidence-based practice movement matures are direct comparisons of the relative effectiveness of different interventions provided to different populations. For instance, of the several established cognitive-behavioral programs for offenders, which is most effective

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with high-risk parolees who are dependent primarily on stimulants? Information from such comparative effectiveness studies would support more rational decision-making about how to select among interventions and to most effectively and cost effectively address the drug use and other problems of specific populations within different settings and with different "menus" of local resources (Mears & Barnes 2010).

CHALLENGES IN DISSEMINATING AND IMPLEMENTING EBPS

Proponents of evidence-based practices argue that the dissemination of such practices will have a number of beneficial effects on the system of care for clients, including offenders (Glasner-Edwards & Rawson 2010; IOM 2001; Mears & Barnes 2010). Development and promotion of evidence-based practices are expected to provide a rational, empirical basis for decisions about treatment policy and practice, increase treatment effectiveness by improving client outcomes, facilitate consistency in practice, assist in developing accountability systems, increase the cost-effectiveness of treatment, and improve the quality of treatment.

These benefits will only be realized, however, if evidence-based practices become widely adopted by correctional systems and provider organizations that serve offenders. A persistent lament among advocates of EBPs is how long it takes for a particular evidence-based practice to enter widespread use in routine care. One estimate is that the gap between the initial research establishing an effective practice and its introduction to general use is 17 years (Balas & Boren 2000). Since this estimate was based on studies conducted in the 1980s and 1990s, before evidence-based practice gained prominence, it is likely (one hopes) that the gap has narrowed. A related issue is that despite convincing evidence that certain interventions do not work (e.g., Scared Straight programs for adolescents; Petrosino, Turpin-Petrosino, & Buehler 2003), such interventions often continue to be used long after they have been shown to be ineffective. In addition to being concerned about how long it takes for effective treatments to become incorporated into practice, policy makers and clinicians should be equally concerned about how long it takes to root out discredited treatments (Norcross et al. 2010). Accomplishing the latter would open up "space" for the former.

Introduction of evidence-based practices for offenders usually involves collaboration and cooperation between multiple agencies and programs on issues of planning, policies, funding, training, monitoring, etc. Problems in collaboration have been found to be obstacles to implementing evidence-based practices with fidelity and sustaining them over time (Lehman et al. 2009; Taxman, Henderson & Belenko 2009; Burdon et al. 2002). For example, it may be difficult to maintain a regular schedule in treatment programs conducted in prisons because of lockdowns and security checks. In community treatment programs, probation or parole staff and treatment staff need to come to agreement on sharing of information in a way that preserves client confidentiality but also meets supervision requirements. Some evidence-based treatments, notably medication-assisted treatment for opiate addiction, are viewed negatively by many criminal justice personnel, who therefore may be resistant to referring offenders to treatment programs that provide methadone or buprenorphine (McKenzie et al. 2009).

In recognition of the challenge of implementing evidence-based practices in criminal justice settings, the National Institute on Drug Abuse has funded the Criminal Justice Drug Abuse Treatment Studies (CJDATS), a cooperative of ten research centers located throughout the United States. In cooperation with criminal justice agencies and local treatment providers, CJDATS has developed and is testing implementation strategies in the areas of assessment and case planning, HIV prevention, testing, and treatment, and medication assisted treatment. The results of these studies should provide research-based guidance on effective strategies that correctional agencies and community programs can use to implement and

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sustain evidence-based practices to improve care for offenders. (Further information about CJDATS can be found at www.cjdats.org.)

CONCLUSION

Over the past 30 or more years, numerous interventions have been developed and promoted as having positive effects on the behavior of offenders. Many of these interventions have been evaluated using designs of varying methodological rigor. Various efforts have been initiated to identify those interventions that have reasonably strong evidence in support of their effectiveness and thus should be considered by policy makers and clinicians who need to make decisions about which practices to spend scarce dollars on. While not a "silver bullet," the evidence-based practice movement, when carried out with experienced clinical judgment and with regard to client values, holds great promise for improving the quality of treatment and for reducing levels of drug use and crime among offenders and promoting public health and safety.

Like all science, EBPs constitute valid but tentative knowledge about what works, based on currently available evidence. Because research on treatment practices will continue to expand, EBP efforts should periodically review existing EBPs to determine whether judgments about their effectiveness need to be changed. New studies may result in the identification of practices that are superior to existing EBPs or that modify their application. Because of advancements in the treatment field and continuing research on existing and new practices, it is almost certain that a list of EBPs developed 25 years from now will differ from such a list created today.

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TABLE 1

Hierarchy of Research Evidence

Level 1: Experimental Designs or Syntheses of Experimental Studies
Randomized controlled trials (double blind, single blind, or unblinded)
RCTs ideally by more than one research team
Systematic reviews
Meta-analyses
Level 2: Quasi-Experimental Designs
Nonrandomized controlled trials
Use of matched controls
Multiple time series studies
Cohort comparisons between groups receiving treatment vs. no treatment
Correlational studies with systematic observation across cases/programs
Level 3: Expert Consensus/Opinion
Single case reports/observational studies
Consensus opinions of clinically experienced experts
Expert committee recommendations
Best practice guidelines assembled by expert consensus
Level 4: Personal Communication

Source: Glasner-Edwards & Rawson 2010

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TABLE 2

Selected Agencies and Organizations that Develop and Promote Evidence-Based Practices or that Produce Systematic Reviews

Blueprints for Violence Prevention
www.colorado.edu/cspv/blueprints
Campbell Collaboration
www.campbellcollaboration.org
Coalition for Evidence-Based Policy: Social Programs that Work
www.evidencebasedprograms.org
Cochrane Collaboration
www.cochrane.org
Department of Education: What Works Clearinghouse
ies.ed.gov/ncee/wwc
Evidence-Based Practices for Substance Abuse Disorders
adai.washington.edu/ebp
Office of Juvenile Justice and Delinquency Prevention: Model Programs Guide
www.ojjdp.gov/mpg
Oregon Evidence-Based Practices Criteria
www.oregon.gov/DHS/mentalhealth/ebp/main.shtml
Preventing Crime: What Works, What Doesn't, What's Promising
www.ncjrs.gov/pdffiles/171676.PDF
Substance Abuse and Mental Health Services Administration: National Registry of Evidence-Based Programs and Practices
nrepp.samhsa.gov
Society for Prevention Research
www.preventionresearch.org
Washington State Institute for Public Policy
www.wsipp.wa.gov

Note: Website addresses active as of January 24. 2011

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TABLE 3

Effect Sizes from Meta-Analyses of Treatment Interventions for Drug-Abusing and Offender Samples

Intervention	Citation	Setting	Outcome	No. of Studies {No. of Subjects)	Effect Size (r)	Significance
General Drug Abuser Treatment Samples						
Case Management	Hesse Et Al. 2007	Community	Drug use	8 (2,391)	.06	NS
Case Management	Hesse Et Al. 2007	Community	Linkage with services	11 (3,132)	.21	S
Cognitive-Behavioral Therapy	Dutra Et Al. 2008	Community	Drug use	13 (NR)	.14	S
Community Drug Treatment	Prendergast Et Al. 2002	Community	Drug use	78 (NR)	.15	S
Contingency Management	Dutra Et Al. 2008	Community	Drug use	14(NR)	.28	S
Contingency Management	GriffithEt Al. 2000	Community (methadone tx)	Drug use	30 (NR)	.25	S
Contingency Management	Lussier Et Al. 2006	Community	Drug use	30 (2,390)	.32	S
Contingency Management	Prendergast Et Al. 2006	Community	Drug use	47 (NR)	.21	S
Motivational Interviewing	Burke, Arkowitz & Menchola 2003	Community	Drug use	5 (717)	.27	S
Relapse Prevention	Dutra Et Al. 2008	Community	Drug use	5 (NR)	.16	S
General Offender Treatment Samples						
Behavioral Reinforcement/Incentives	Pearson Et Al. 2002*	Institution/community	Recidivism	23(1,935)	.07	NS
Cognitive-Behavioral Therapy	Landenberger & Lipsey 2005*	Institution/community	Recidivism	58(NR)	.11	S
Cognitive-Behavioral Therapy	Lipsey & Landenberger 2006*	Institution/community	Arrest	9 (NR)	.14	S
Cognitive-Behavioral Therapy	Aos, Miller & Drake 2006	Institution/community	Recidivism	25 (6,546)	.07	S
Cognitive-Behavioral Therapy	Pearson Et Al. 2002*	Institution/community	Recidivism	44 (8,345)	.14	S
Relapse Prevention	Dowden, Antonowics & Andrews 2003	Institution/community	Reconviction	31 (NR)	.13	NR
Drug-Abusing Offender Treatment Samples						
Case Management	Aos, Miller & Drake 2006	Community	Recidivism	12(2,572)	.03	NS
Cognitive-Behavioral Therapy	Lipton Et Al. 2002*	Institution/community	Substance use	10 (1,633)	.08	S
Community Drug Treatment	Aos, Miller & Drake 2006	Community	Recidivism	5 (54,334)	.07	S

Source: Prendergast 2009

The table includes meta-analyses published in 2000 or later. All of the effect sizes are positive, indicating that the treatment group had a better outcome than the comparison group. Effectsizes from studies that use the standardized mean difference (*d*) have been converted to the correlation coefficient (*r*; Lipsey & Wilson 2001). Conventionally, an effect size of *r* =.10 is small; *r* =.30 is medium; and *r* = .50 is large (Cohen 1988). Another way to interpret *r* is as the percentage difference in the outcome between the treatment group and the comparison group; thus, an effect size of *r* = .15 for arrests can be interpreted as a 15 percentage point difference in arrests in favor of the treatment group.

S = significant; NS = not significant; NR =not reported.

* Includes both juvenile and adult offenders.

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