

## Does Coerced Treatment of Substance-Using Offenders Lead to Improvements in Substance Use and Recidivism? A Review of the Treatment Efficacy Literature

David A Bright<sup>1</sup> and Kristy A Martire<sup>2</sup>

<sup>1</sup>School of Social Sciences, University of New South Wales and <sup>2</sup>School of Psychology, University of New South Wales

The use of legally coerced treatment for substance-using offenders is now widespread internationally. To justify the continued use of coerced treatment, policy-makers, practitioners, and researchers are obliged to demonstrate the effectiveness and limitations of such programs. This article aims to provide a broad overview of scholarship on the efficacy of coerced treatment including an examination of factors that may limit or augment any benefits. A literature review was undertaken in which articles were classified as general topic reviews, critical reviews, and evaluations. Evaluation articles were further categorised into those examining implementation or process factors, delivery factors, participation/retention, and the impact of coerced treatment on the outcome measures of substance use and recidivism. In the case of critical reviews and evaluation studies, we present a brief review of the literature in each area. For articles on efficacy, we adopt a hypothesis-testing approach to examine substance use and criminal justice outcomes of coerced treatment in each stage of the criminal justice system. We identify specific gaps in the research literature and recommend that new programs incorporate research agendas (e.g., appropriate comparison groups) prior to implementation.

**Key words:** coerced treatment; effectiveness; mandatory treatment; offending; substance use.

### What is already known on this topic

- 1 Provision of coerced substance use treatment constitutes an alternative to traditional punishment and a means to minimise drug-related harms and likelihood of future offending
- 2 Efficacy literature is broad, covering many stages of the criminal justice system (e.g., pre-arrest, pre-trial, pre-sentence).
- 3 Efficacy literature is marked by contentious results for both substance use and recidivism outcomes.

### What this paper adds

- 1 The article provides a broad overview of scholarship relating to efficacy of coerced treatment including factors that limit or augment benefits.
- 2 It provides an overview of previous research on the efficacy of coerced treatment with respect to both substance use and recidivism outcomes, and across the different stages of the criminal justice system.
- 3 It evaluates previous research on process issues, participation, cost-effectiveness, and treatment design.

The use of legally coerced treatment for substance-using offenders is now widespread internationally, with programs operating in the USA, the UK, and Australia, among others (Pritchard, Mugavin, & Swan, 2007; Stevens et al., 2005). Substance use treatment provided within a context of legal coercion is directed at those individuals whose involvement in the criminal justice system is seen to be associated with, or exacerbated by, drug involvement (Seddon, 2007). Such coerced treatment seeks to divert those from the criminal justice system where there has been minimal criminal activity over and above that associated with substance use. Where offending is more serious or persistent, it aims to attract otherwise unmotivated clients into sub-

stance abuse treatment. These aims are underpinned by the belief that the provision of substance use treatment constitutes an alternative to traditional punishment and a means to minimise drug-related harms and the likelihood of future offending (Klag, O'Callaghan, & Creed, 2005).

Despite these admirable aims, there has been much debate regarding the justifiability of coerced treatment. Such challenges to the moral basis of forced treatment (Seddon, 2007) have been addressed via assertions of the responsibilities which must be met in order to consider coerced treatment as legally and ethically justified: (1) the rights of individuals are protected by due process; (2) the treatment provided is humane; and (3) the treatment provided is effective (Porter, Arif, & Curran, 1986). Thus, in order to justify the disempowering nature of coerced treatment, practitioners, policy-makers, and researchers are obliged to demonstrate the effectiveness of, and the limitations to, such programs.

Coerced treatment for substance abuse occurs at the intersection of substance use treatment and the criminal justice system, and therefore falls within the purview of forensic psychologists.

**Correspondence:** David Bright, School of Social Sciences, University of New South Wales, UNSW Sydney, NSW 2052, Australia, email: david.bright@unsw.edu.au

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Forensic psychologists have the requisite skills and knowledge to contribute to the ongoing scholarly debate about coerced treatment (including ethical considerations), to facilitate methodologically robust research in this area, to design ethical and efficacious treatment programs with the framework of coerced treatment, and to work ethically and effectively with individuals who have been coerced into treatment.

There is no extant review of the efficacy literature for coerced treatment of substance use issues that examines the two outcomes of interest: substance use and criminal recidivism, and which disaggregates results across the different stages of the criminal justice system. The aggregation of efficacy findings across the stages could result in positive findings being “washed out” in the mix. The literature in this area is vast, and for practitioners and researchers alike, the voluminous nature of the research prohibits a clear synthesis of results. This article contributes to the field by providing a broad overview of scholarship relating to the efficacy of coerced treatment as well as consideration of the factors that may limit or augment any observed benefits. Specifically, we provide an overview of the research landscape relating to the central issues of treatment efficacy with regard to reductions in substance use and recidivism across the stages of the criminal justice system, and with respect to both substance use and recidivism outcomes. The article uses an innovative approach to summarising outcome data from multiple studies: a “supermatrix” approach which succinctly displays results across criminal justice stages, and by outcome (substance use and recidivism).

## Method

The method for the review of published and peer-reviewed literature is shown in Figure 1. Five electronic databases were searched: PsychINFO, Medline, Web of Science, Scopus, and Sociological abstracts. In order to build on previous reviews conducted in the field (e.g., Harvey, Shakeshaft, Hetherington, Sannibale, & Mattick, 2007), searches were restricted to publication years 1996 through 2011. Due to different interfaces across databases, search terms were modified slightly depending on the database being searched. PsychINFO was searched using the following subject headings (first letters capitalised) and keywords (italicised): “Drug Abuse and Criminal Justice and (Court Referral or *diversion*),” resulting in 232 articles. Medline was searched using the terms “Substance-related Disorders and (Criminal Law or *diversion*),” retrieving 238 articles. Web of Science was searched with the terms “Substance Abuse and *drug abuse* and (*criminal justice* or *court referral* or *diversion*),” resulting in 425 articles. For Scopus, search terms used were “(*drug abuse* or *substance abuse*) and *criminal justice* and (*court referral* or *diversion*),” retrieving 60 articles. Sociological Abstracts was searched using the terms “Substance Abuse and (Criminal Court or *diversion*),” resulting in 89 articles. The results of the five searches were combined, and any duplicates removed, with the final total being 937 articles. The use of search terms (following previous research in the field; e.g., Harvey et al., 2007) resulted in a focus on court diversion programs, and the resulting research therefore does not include efficacy research on the great majority of prison-based programs.

These 937 articles were reviewed by title and abstract resulting in the removal of articles if they focused on the criminal justice context only, which is *not* about outcomes of coerced treatments ( $n = 98$ ); drug treatment issues alone, which is *not* focused specifically on diversion or criminal justice programs ( $n = 118$ ); policy/government/education and training ( $n = 97$ ); mental health alone ( $n = 56$ ); pharmaceutical diversion ( $n = 109$ ); substance abuse alone ( $n = 38$ ); juvenile justice ( $n = 70$ ); medical or disease related ( $n = 32$ ); treatment/diversion for addicted health workers ( $n = 4$ ); crime related but *not* drug or alcohol focused ( $n = 22$ ); domestic violence ( $n = 7$ ); or instrument validation ( $n = 25$ ). Articles were also removed if they were introductions to special editions of journals, book reviews, obituaries, etc., resulting in a further 28 deletions. This process left a total of 233 articles.

These remaining articles were then re-examined by title and abstract and classified into three groups: (1) comment or general topic reviews ( $n = 50$ ); (2) critical reviews ( $n = 53$ ); and (3) outcome evaluations of coerced treatment programs ( $n = 130$ ). All articles were reviewed via consultation between the two authors. This leaves a final viable sample of 111 articles after deleting theses, book chapters, conference articles, and articles published prior to 1996.

The set of evaluation articles was further categorised into type of evaluation: evaluations which examined implementation or process factors ( $n = 24$ ); those that conducted an economic evaluation of programs ( $n = 3$ ); those focused on specific delivery factors ( $n = 14$ ); those which examined participation and retention factors ( $n = 33$ ); and finally, those evaluations that specifically evaluated the impact of the program on outcome measures of substance use and recidivism ( $n = 39$ ). Articles in this last category were then further classified on the basis of the stage of the criminal justice system targeted (pre-arrest ( $n = 3$ ), pre-trial ( $n = 14$ ), pre-sentence ( $n = 8$ ), post-conviction ( $n = 24$ ), pre-release ( $n = 4$ ), and post-release ( $n = 8$ ); See Table 1 below for definition and indicative examples), and the type of outcome measure reported (criminal justice involvement ( $n = 37$ ), for example, new charges or convictions, and/or substance use ( $n = 24$ ),<sup>1</sup> for example, self-reported substance use or urinalysis results).

## Data Synthesis

Two distinct approaches to data synthesis have been adopted in this article. First, for the critical review and evaluation category articles, we present a brief review of the literature in the area. These literature reviews take on different forms in response to the characteristics of the specific area but will constitute a brief overview of topic areas covered. These reviews will be presented in an order consistent with the structure laid out in Figure 1—first presenting an overview of the critical review articles, followed by the peripheral evaluation types, and finishing with a detailed consideration of the central efficacy evaluations at the bottom of the figure. To minimise repetition, no detailed consideration will be given to the “comment or general topic review” category.

Second, for those articles in the efficacy evaluation category, we have also adopted a hypothesis-testing approach to examine the balance of evidence about the differential effects of coerced treatment at each stage of the criminal justice system (see Figure 2) derived from a “harvest plot” approach (Ogilvie et al.,

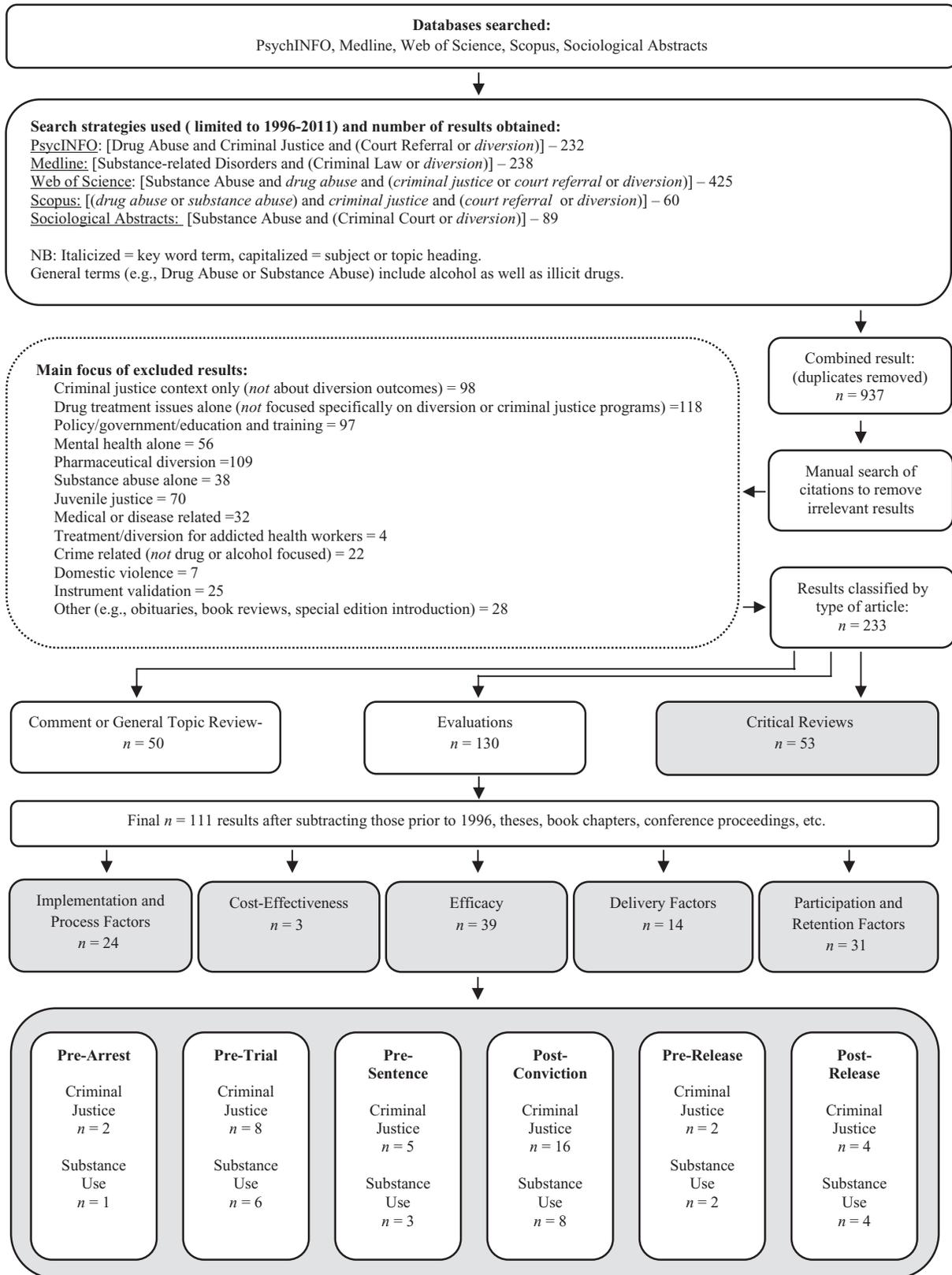


Figure 1 Flowchart Summarising the Search Strategy, Results Obtained, and Categories for Review (Shaded).

**Table 1** Indicative Features of Coerced Treatment Provided at Each Stage in the Criminal Justice System

Stage of criminal justice system	Indicative features
Pre-arrest <sup>a</sup>	<ul style="list-style-type: none"> <li>• Available pre-charge.</li> <li>• Participation to divert those apprehended for possession and/or use of small quantities of illicit substances, and who have little or previous contact with the criminal justice system.</li> <li>• Criminal charge can be avoided by successful completion.</li> <li>• e.g., cannabis cautioning</li> </ul>
Pre-trial <sup>a</sup>	<ul style="list-style-type: none"> <li>• Available post-charge</li> <li>• Participation as an alternative to traditional court processes.</li> <li>• Criminal conviction can be avoided by successful completion.</li> <li>• e.g., pre-plea diversion</li> </ul>
Pre-sentence <sup>a</sup>	<ul style="list-style-type: none"> <li>• Available post-conviction</li> <li>• Participation as an alternative to tradition sentencing.</li> <li>• Criminal conviction can be avoided by successful completion.</li> <li>• e.g., recognisance order.</li> </ul>
Post-conviction <sup>a</sup>	<ul style="list-style-type: none"> <li>• Available post-conviction.</li> <li>• Treatment is sentenced.</li> <li>• Traditional sentence can be avoided by successful completion.</li> <li>• e.g., drug court.</li> </ul>
Pre-release	<ul style="list-style-type: none"> <li>• Available to offenders within custodial setting.</li> <li>• Treatment is encouraged by paroling authorities.</li> <li>• Supervised release can be more likely through successful completion.</li> <li>• e.g., transitional therapeutic communities.</li> </ul>
Post-release	<ul style="list-style-type: none"> <li>• Available to parolees and probationers in community settings.</li> <li>• Treatment is a recommendation or component of sentence or parole conditions.</li> <li>• Community supervision less likely to be revoked and other more harsh penalties/stricter conditions avoided through successful completion.</li> <li>• e.g., treatment stipulated by parole authority.</li> </ul>

<sup>a</sup>Based on classifications from Pritchard et al. (2007).

2008). For each stage of the justice system and each of the outcome types, we populated the relevant row of this matrix by placing a bar representing each study in one of three columns according to which of the three competing hypotheses were most strongly supported by the results of that study for the outcome of interest:

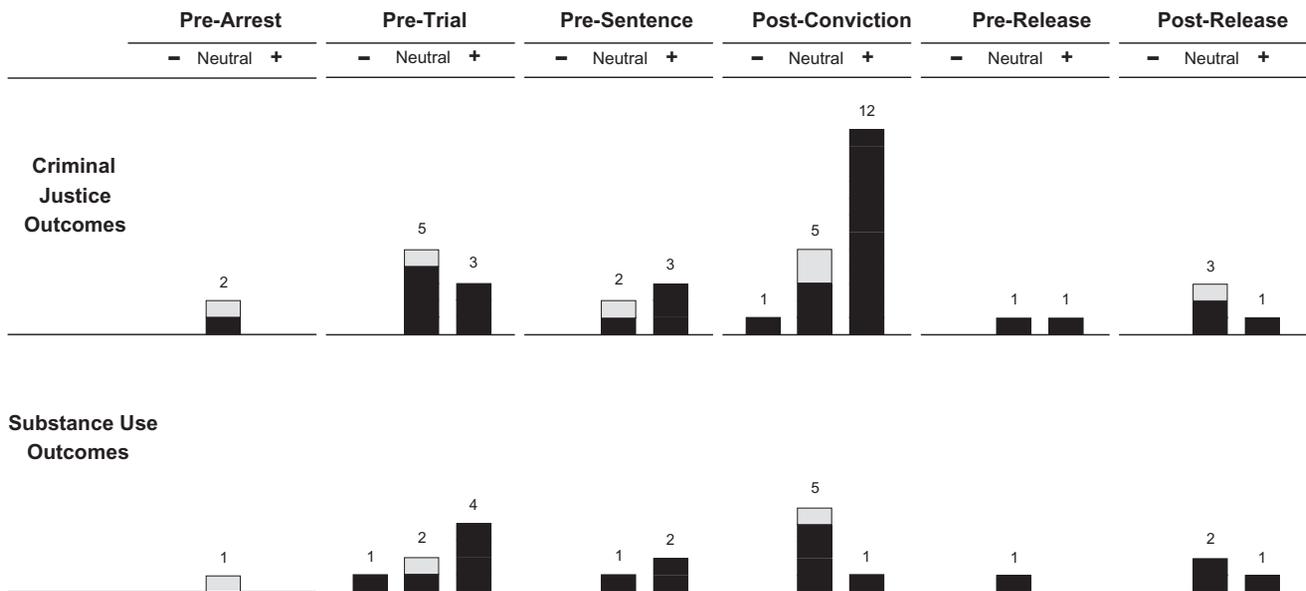
- The null or “neutral” hypothesis that there was no effect of the treatment.
- The alternative hypothesis that there was a positive impact (usually a reduction) in the outcome of interest.
- The alternative hypothesis that there was a negative impact (usually an increase) in the outcome of interest.

### Critical Reviews (n = 53)

Of the 53 critical reviews, citation analysis showed that the top 10 cited articles (published between 2001 and 2006), had between 14 and 34 citations. The content of critical reviews included analysis of conceptual, ethical, motivational, and methodological issues. Conceptual issues included discussion of the coercion concept as a dichotomy rather than as a continuum (Klag et al., 2005; Leukefeld, McDonald, Staton, & Mateyoke-Scriver, 2004; Marlowe et al., 2009; Seddon, 2007); as a multidimensional and essentially subjective construct (Seddon, 2007); and as including formal criminal, formal non-criminal coercion, and informal coercion (Klag et al.,

2005). Ethical issues canvassed in critical reviews included an analysis of the moral basis of coercion (benevolence vs crime prevention; Seddon, 2007); professional ethics for health and justice workers; equity of access to treatment where coerced clients “jump the queue” (Seddon, 2007); the need for safeguards on individual autonomy (Klag et al., 2005); and the tension between helping offenders and protecting community (Klag et al., 2005). Motivational issues were also highlighted in critical reviews. Specifically, authors of the review articles argued that coercion can bring clients to treatment, but cannot force them to engage in the treatment process (Klag et al., 2005; Seddon, 2007). This was balanced against the observation that substance users are generally ambivalent about treatment, suggesting that coercion can be justified as it brings to treatment those who are likely to benefit (Seddon, 2007).

With respect to methodological issues, authors of critical reviews noted that research on coerced treatment is difficult to undertake and includes a number of potential biases and flaws. Some of the methodological limitations noted in the critical reviews include: the heterogeneity of substance-using population making firm conclusions difficult; outcomes measures, for example, recidivism/substance use, retention/drop out/completion of treatment (Klag et al., 2005); short follow-up periods (Klag et al., 2005); absence of theoretical frameworks (Klag et al., 2005); an implicit assumption that mandated and non-mandated clients are comparable at baseline, even though



**Figure 2** Evidence for Effects of Coerced Treatment. A “Supermatrix” Covering All Criminal Justice Stages Consisting of Two Rows (One for Criminal Justice Outcomes and One for Substance Use Outcomes) and Three Columns (One for Each of the Three Competing Hypotheses about the Differential Effects of Coerced Treatment at Each Stage of the Justice System). Each Bar Represents the Number of Indicative Effects Relevant to the Hypothesis. Studies Involving Comparison Groups are Indicated with Full-tone (Black), and Studies with No Comparison Group are Indicated with Half-Tone (Grey) Bars. Each Bar is Annotated with the Number of Indicative Effects Comprising the Height of the Bar.

they may not be; inadequate control groups (Klag et al., 2005); no random assignment (Klag et al., 2005); no clear program descriptions; samples which show variability in perceptions of coercion, readiness to change, and other factors relevant to outcomes (Wild, Roberts, & Cooper, 2002); and ethical and practical difficulties in conducting randomised controlled trials (Klag et al., 2005).

In addition, critical reviews often provided an overview of the results of the studies evaluated. One review concluded that the evidence for coerced treatment was equivocal at best (Klag et al., 2005). Another suggested that the majority of treatment-oriented measures (referral, retention) showed benefit of compulsory treatment; however, the majority of studies looking at substance abuse and recidivism showed no difference (Wild et al., 2002). Critical reviews also made recommendations regarding future research including inclusion of additional psychosocial outcomes (e.g., readiness, motivation); distinguishing between treatment compliance and treatment engagement, specifying different forms of pressure (Wild, 2006); and paying more attention to treatment quality (Stevens et al., 2005), including measures of client characteristics (prior offending, drug use patterns, motivation).

Overall, critical reviews synthesise the main conceptual, practical, and ethical challenges inherent in coerced treatment programs, and in attempts to evaluate the effectiveness of such programs.

## Evaluations (n = 130)

### Implementation and Process Factors

A total of 24 studies address the implementation, organisation, and process factors associated with substance use treatment

in the criminal justice system. A large proportion of these articles consider issues associated with drug-courts and court-mandated treatment (Best, Wood, Sweeting, Morgan, & Day, 2010; Bouffard & Taxman, 2004; Cresswell & Deschenes, 2001; Evans, Anglin, Urada, & Yang, 2011; Finch et al., 2003; Fosados, Evans, & Hser, 2007; Frisman et al., 2006; La Prairie, Gliksmann, Erickson, Wall, & Newton-Taylor, 2002; Maeder & Wiener, 2008) while far fewer investigate their implications with regard to arrest-referral schemes (Corlett, Skrzypiec, & Hunter, 2005; Sondhi & Huggins, 2005) and pre-plea referral programs (Passey, Flaherty, & Didcott, 2006). A substantial number of studies investigate structural considerations within the broader context of treatment for substance-using offenders both within contained settings and in the community (Friedmann, Taxman, & Henderson, 2007; Jessup, 2001; Kubiak, Arfken, & Gibson, 2009; Lehman, Fletcher, Wexler, & Melnick, 2009; Oser, Knudsen, Staton-Tindall, & Leukefeld, 2009; Oser, Knudsen, Staton-Tindall, Taxman, & Leukefeld, 2009; Stemen & Rengifo, 2009).

It is worthy of note that seven of the studies in this group (Evans et al., 2011; Friedmann et al., 2007; Oser, Knudsen, Staton-Tindall, & Leukefeld, 2009; Oser, Knudsen, Staton-Tindall, Taxman, et al., 2009) based their analyses on data from the National Criminal Justice Treatment Practices survey (NCJTP; Taxman, Young, Wiersema, Rhodes, & Mitchell, 2007). The NCJTP survey obtained representative samples of adult prisons, juvenile residential facilities and community corrections agencies in the USA, stratified by counties and facilities within counties. The intention of the survey was to examine organisational factors affecting substance use treatment practices in correctional settings. Importantly for these purposes, although this survey clearly has much to offer with regard to our understanding of process and implementation issues associated

with substance use treatment in the criminal justice system, it does not specifically orient itself, or necessarily the findings, to the various stages of the criminal justice system (i.e., from pre-arrest to post-release). Thus, this section of the evaluation literature is somewhat dominated by research results and formulations which may or may not apply across the course of criminal justice involvement.

The five most cited of these articles (Bouffard & Taxman, 2004; Friedmann et al., 2007; Grella et al., 2007; Henderson, Taxman, & Young, 2008; Taxman, Perdoni, & Harrison, 2007) account for more than half of all citations (61.4%) with the number of citations in this group ranging from 8 to 32. Four of these five key articles are authored by Faye Taxman and her colleagues. Three of these are presenting analyses from the NCJTP survey. As a group these five articles touch on one or more of three broad issues in the domain of implementation, organisation, and process: (1) the principles or components of effective substance use interventions within the correctional system; (2) the external, organisational, and program characteristics which impact upon the adherence to quality service provision in adult correctional programs; and (3) the organisational features associated with a greater adherence to quality service provision (aka evidence-based practices [EBPs]). Broad findings in each of these domains are discussed in turn below.

### **The principles or components of effective substance use interventions within the correctional system**

Effective substance use interventions within the correctional system (be they operating in the community or contained environments) were most frequently described as programs utilising standardised risk assessment tools, standardised substance use assessment tools, of a duration greater than 90 days, involving compliance measures to enforce requirements (such as monitoring and drug testing) as well as motivational and reinforcement techniques. Other characteristics of effective interventions included responsivity to risk and need, as well as a clear continuum of care across and out of the criminal justice system (Bouffard & Taxman, 2004; Evans et al., 2011; Friedmann et al., 2007).

### **The external, organisational, and program characteristics which impact upon the adherence to quality service provision in adult correctional programs**

Three levels of factors were associated with adherence to quality treatment provision, or EBP, within the criminal justice context: external factors, internal or organisational factors, and programmatic factors. Indeed, the organisation itself is further broken down into three components: organisational structure, organisational culture, and organisational climate (Evans et al., 2011). However, upon closer inspection, it seems that these distinctions across and within constructs appear to be somewhat fluid depending on the specific formulation chosen by the authors. Across the three articles discussing these issues (Friedmann et al., 2007; Grella et al., 2007; Henderson et al., 2008), this results in overlapping consideration of a factor across various levels. Even so, some common considerations did emerge:

administrator and staff characteristics, and more specifically, accreditation in the form of staff qualifications and training—forming part of the organisational or institutional structure—were seen as important, as were external regulatory requirements and the endorsed and prescribed practices which form the organisational culture. Other factors raised for consideration included resources and funding as both external and organisational structure factors, network connectedness with regard to the proximity of the service to other services and the strength of inter-organisational relationships, in addition to the attitudes and perceptions of staff and organisational culture in a general sense.

### **The organisational features associated with a greater adherence to quality service provision (aka EBPs)**

The final area of discussion addresses the specific characteristics of offender treatment programs associated with higher degrees of adherence to EBPs. These include organisations which make staff training available, which are led by administrators with a background in human services, who have a high regard for substance use treatment and who are familiar with the relevant empirical literatures. These programs are performance oriented, have close proximity to other services and strong inter-organisation relationships.

More broadly, the outcomes of all the literature in this category largely fall in two groups: those identifying implementation and process issues and those specifically addressing factors associated with the provision of EBPs.

### **Implementation and Process Issues**

Some of the ethical and practical considerations associated with the implementation and operation of substance use treatment within criminal justice contexts included concerns regarding “net widening” at the point of referral (Stemen & Rengifo, 2009); the compatibility of, and difficulties associated with, delivery of treatment within a criminal justice context including considerations of the nature and objectives of treatment (Corlett et al., 2005; Finch et al., 2003; Frisman et al., 2006), monitoring and reporting obligations, and infusion of therapeutic ethos (Hardy, Teruya, Longshore, & Hser, 2005); issues of responsibility, influence, and control (Finch et al., 2003; Hardy et al., 2005); the importance of communication and cooperation across agencies and professions (Frisman et al., 2006; Hardy et al., 2005); careful consideration of eligibility criterion (Frisman et al., 2006; Hardy et al., 2005); as well as the availability of sufficient resources in financial, training, and operational knowledge domains (Hardy et al., 2005; Stemen & Rengifo, 2009).

### **EBP**

The implementation and success of EBP was shown to be positively affected by numerous organisational, procedural, and structural considerations. These included cooperation and collaboration within and across professions, agencies, and systems (Evans et al., 2011; Oser, Knudsen, Staton-Tindall, & Leukefeld, 2009; Oser, Knudsen, Staton-Tindall, Taxman, et al., 2009);

actions to encourage and monitor program engagement, progress, and participation (Evans et al., 2011); dedication to quality treatment incorporating a performance orientation, experienced leadership, appreciation for EBP, and the role of substance use treatment, accreditation, and training/financial resources (Evans et al., 2011; Oser, Knudsen, Staton-Tindall, & Leukefeld, 2009); community-based approaches (Evans et al., 2011); and those supported by standardised risk and substance use screening or assessment tools (Oser, Knudsen, Staton-Tindall, Taxman, et al., 2009).

Limitations with regard to the adoption and execution of EBPs included the amount of time dedicated to this type of service provision (Best et al., 2010); the availability of and emphasis on EBPs over and above other approaches (Bouffard & Taxman, 2004; Evans et al., 2011); and failures to match service provision intensity to client needs (also known as responsivity; Fosados et al., 2007; Friedmann et al., 2007).

### Participation and Retention Factors ( $n = 31$ )

Of the 31 articles which examined individual characteristics of participants in coerced treatment programs, just under half ( $n = 13$ ) were focused on drug courts (Brown, 2010; DeMatteo, Marlowe, Festinger, & Arabia, 2009; Duvall, Staton-Tindall, & Leukefeld, 2008; Garrity et al., 2006, 2008; Gray & Saum, 2005; Listwan, Shaffer, & Hartman, 2009; Marlowe, Festinger, Foltz, Lee, & Patapis, 2005; Saum, Scarpitti, & Robbins, 2001; Stoops, Tindall, Mateyoke-Scriver, & Leukefeld, 2005; Taylor, Patra, & Gliksman, 2009; Weitzel, Nochajski, Coffey, & Farrell, 2007; Wolf, Sowards, & Wolf, 2003). Overall, eight articles examined participant characteristics of those attending coerced treatment (DeMatteo et al., 2009; Elizabeth Evans & Longshore, 2004; Feeney, Connor, Young, Tucker, & McPherson, 2005; Garrity et al., 2006; Lattimore, Broner, Sherman, Frisman, & Shafer, 2003; Stoops et al., 2005; Terplan, Smith, Kozloski, & Pollack, 2010; Weitzel et al., 2007), and three looked at the association between participant characteristics and outcome measures such as substance use and recidivism (Duvall et al., 2008; Garrity et al., 2008; Messina, Burdon, Hagopian, & Prendergast, 2006; Peterson, Lubin, & Van Whitlock, 1998). Fifteen articles examined participant characteristics associated with program retention, engagement, and completion (Anglin et al., 2007; Best, Day, Campbell, Flynn, & Simpson, 2009; Brown, 2010; Butzin, Saum, & Scarpitti, 2002; Eley, Beaton, & McIvor, 2005; Gray & Saum, 2005; Listwan et al., 2009; Marlowe, Festinger, Foltz, et al., 2005; Saum et al., 2001; Schaub et al., 2011; Sung, Belenko, & Feng, 2001; Sung, Belenko, Feng, & Tabachnick, 2004; Taylor et al., 2009; Wolf et al., 2003; Zanis, Coviello, Lloyd, & Nazar, 2009). Three articles examined the relationship between coercion and treatment retention (Gregoire & Burke, 2004; Perron & Bright, 2008; Polcin & Beattie, 2007).

We turn first to those articles which examined characteristics of individuals who participated in coerced treatment programs. Compared with other (non-mandated) treatment clients, mandated clients included fewer women, were older, more likely to use methamphetamine, and had been using drugs for longer periods (Evans, Li, & Hser, 2009); a quarter to a half of 108 participants in a drug court were assessed as requiring follow-up by mental health services (Weitzel et al., 2007).

A total of three studies related individual characteristics to treatment outcomes (i.e., recidivism, substance use, employment). One study found that greater persistence in faith/religion was associated with a decrease in substance use frequency at 24 months and a marginal association with criminal behaviour at 24 months (Duvall et al., 2008). In another study, greater baseline subjective stress significantly associated with employment, substance use, criminal justice, and health outcomes at 1-year follow-up (drug court; Garrity et al., 2008). Messina et al. (2006) found that psychological impairment was the strongest predictor of recidivism for participants in a custody-based therapeutic community.

A number of factors were found to be related to retention and completion of treatment. Higher scores on criminal thinking styles were associated with poor engagement in treatment (Best et al., 2009). Unemployment, lower educational attainment, and cocaine use were associated with failure to complete treatment (Brown, 2010), while use of heroin, crack, and multiple drugs, psychiatric problems in previous month, lifetime depression were all negatively associated with treatment retention (Schaub et al., 2011). Clients in their physical prime, those with poorer social supports, and those lacking internal desire for change were especially likely to violate treatment program rules (Sung et al., 2004); and treatment success was predicted by employment, race, education, and frequency of drug use (Butzin et al., 2002). Lang and Belenko (2000) also found that completers had more social conformity and close friends than non-completers. Coercion (compared with non-coerced treatment) was associated with greater readiness to change (Gregoire & Burke, 2004), and reduced dropout from treatment (Evans et al., 2009). Although pressure to enter treatment from professionals and institutions was associated with lower motivation for treatment, pressure from relationships (family, friends) was not related to motivation for treatment (Polcin & Beattie, 2007).

### Cost-Effectiveness Studies ( $n = 3$ )

Only three studies described economic analyses of drug courts: two were cost-effectiveness analyses (Cowell, Broner, & Dupont, 2004; Daley et al., 2004) and one utilised a methodology called transactional costs analysis (Byrne, Schaufli, Lightman, Finigan, & Carey, 2004). One study which evaluated the cost-effectiveness of diversion programs found that results varied, possibly due to the heterogeneity of structure and implementation across sites (Cowell et al., 2004). The second cost-effectiveness study looked at prison-based substance abuse programs and found that such programs produced benefits (flowing from reduced recidivism) of between 1.8 and 5.7 times the cost of implementation (Daley et al., 2004). The transactional cost analysis of drug courts concluded that the program saves taxpayers significant money over time, and that corrections budgets avoid substantial costs due to lower recidivism among drug court participants.

The dearth of cost-effectiveness or other types of economic analysis, especially as a proportion of the total number of studies conducted on coerced treatment suggests that this is a particularly fertile area for future research. Policy-makers responsible for spending taxpayers' dollars often require information not only that a program is effective (e.g., reduces recidivism), but

also that it makes improvements in a cost-effective way (e.g., the costs of the program absorbed by cost savings produced by the program).

### Program Delivery Factors ( $n = 14$ )

Fourteen articles examined program delivery factors with the aim of determining ways to enhance the effectiveness of coerced treatment programs, or to isolate treatment factors which were most critical to treatment success (Czuchry & Dansereau, 1999, 2003; Festinger et al., 2002; Gray, 2001; Hall, Prendergast, Roll, & Warda, 2009; Inciardi, Martin, Butzin, Hooper, & Harrison, 1997; Koob, Brocato, & Kleinpeter, 2011; LaChance, Bryan, & Hutchison, 2005; Leukefeld et al., 2004; Marlowe et al., 2009; Marlowe, Festinger, Dugosh, & Lee, 2005; Pitre, Dansereau, Newbern, & Simpson, 1998; Prendergast, Hall, Roll, & Warda, 2008; Sia, Dansereau, & Czuchry, 2000).

Two articles provided descriptive accounts (but no evaluation) of a group-based motivational program (LaChance et al., 2005), and a strengths-based approach with a focus on self-efficacy, hope, and self-esteem (Gray, 2001). One article found that readiness programs can result in greater engagement in treatment and satisfaction with counsellors (Sia et al., 2000). Five articles examined different modes of treatment or counselling (Czuchry & Dansereau, 1999, 2003; Gray, 2001; LaChance et al., 2005; Marlowe et al., 2009; Pitre et al., 1998). Node-link mapping, a counselling approach using visual representations of critical concepts, was associated with more favourable perceptions of counsellors and fellow participants (Czuchry & Dansereau, 1999), and with superior progress toward treatment goals and greater treatment engagement (Pitre et al., 1998) compared with regular counselling. Increased treatment effectiveness was reported for treatment enhanced with a cognitive skills module (Czuchry & Dansereau, 2003). Treatment which varied the intensity of treatment according to clinical presentation and treatment progress were associated with higher graduation rates and reduced time in treatment (Marlowe et al., 2009).

Three articles described complementary employment and residential rehabilitation interventions: one described a job readiness and life skills training program (Leukefeld et al., 2004), and another found that participants who received work release plus aftercare interventions had lower rates of substance use and recidivism compared with standard in-prison interventions only (Inciardi et al., 1997). There was some evidence that adding residential rehabilitation to drug court programs increased retention and completion rates (Koob et al., 2011).

Two articles examined different "dosages" of judicial status hearings in drug court interventions. High-risk participants assigned to more frequent status hearings showed superior treatment effects during treatment, but these gains were mostly evident post-treatment (Marlowe, Festinger, Dugosh, et al., 2005). Participants who met DSM-IV criteria for antisocial personality disorder and those who had a history of substance abuse treatment achieved more weeks of abstinence when they were assigned to more frequent hearings. Conversely, participants who did not meet criteria for antisocial personality disorder achieved more weeks of abstinence when assigned to less frequent hearings.

Finally, two articles examined the impact of implanting a voucher system in coerced treatment programs (Hall et al., 2009; Prendergast et al., 2008). Voucher-based reinforcement of abstinence and positive treatment behaviours did not significantly improve retention or substance use.

### Efficacy Outcomes ( $n = 39$ )

#### Pre-Arrest Stage

Just three effects from two studies have been reported for drug and alcohol interventions located at the pre-arrest stage of the criminal justice system (Crossen-White & Galvin, 2002; Frisman et al., 2006). Only one of these investigations compared diverted and non-diverted samples revealing no significant differences between groups on reoffending measures (Frisman et al., 2006). Despite conclusions that the "intervention had had a positive impact on both drug misuse and offending," in the absence of a control group, it is not valid to draw these conclusions despite trends toward positive outcomes (Crossen-White & Galvin, 2002). Overall then, evidence relating to the impact of pre-arrest referral schemes on criminal justice and substance use outcomes is very limited and far from compelling. Further research is required at this stage of the criminal justice system.

#### Pre-Trial Stage

Eleven articles examined the impact of pre-trial substance use treatment programs (Broner, Nguyen, Swern, & Goldfinger, 2003; Frisman et al., 2006; Hall et al., 2009; Heale & Lang, 2001; Larney & Martire, 2010; Martire & Larney, 2011; Reilly, Scantleton, & Didcott, 2002; Shafer, Arthur, & Franczak, 2004; Walker, Cole, & Logan, 2008), reporting 15 outcome effects. All but two of these effects (Broner et al., 2003; Reilly et al., 2002) resulted from a comparison between groups. Although in some cases the comparison was made only between treatment completers and treatment dropouts (Larney & Martire, 2010; Martire & Larney, 2011) rather than diverted and non-diverted participants (randomly allocated or otherwise). Of the six effects relating to the impact of pre-trial diversion on reoffence-related measures (and derived from a comparison of groups), 57% were consistent with no significant effect of the intervention (Frisman et al., 2006; Heale & Lang, 2001; Martire & Larney, 2011; Shafer et al., 2004), while the remaining 43% provided a positive impact in terms of criminal justice outcomes (Frisman et al., 2006; Larney & Martire, 2010). The outcomes on substance use measures are somewhat more compelling, with two thirds of the six comparative results showing a positive difference between groups on substance use outcomes (Hall et al., 2009; Martire & Larney, 2011; Shafer et al., 2004; Walker et al., 2008), and one study each providing evidence of no difference (Frisman et al., 2006), or a negative impact of diversion on substance use [for those referees charged with driving under the influence (DUI); Walker et al., 2008]. Overall then, there is some support for pre-trial interventions for both substance use and recidivism; however, this evidence is tempered by a commensurate literature indicating null, or in one case negative, effects.

### Pre-Sentence Stage

Five articles examine the impact of pre-sentence diversions to substance use treatment (Broner, Lattimore, Cowell, & Schlenger, 2004; Broner, Mayrl, & Landsberg, 2005; Fielding, Tye, Ogawa, Imam, & Long, 2002; Powell, Christie, Bankart, Bamber, & Unell, 2011; Schaub et al., 2010), giving rise to eight relevant effects. All but one of these studies incorporated a comparison group of some kind (Powell et al., 2011). The majority of the evidence supported a positive impact of pre-sentence diversion on criminal justice (60%; Broner et al., 2005; Fielding et al., 2002; Schaub et al., 2010) and substance use outcomes (67%; Broner et al., 2005; Schaub et al., 2010). Two null effects were also observed (Broner et al., 2004). Although the empirical evidence is substantially limited at this time, it appears to indicate a trend towards positive outcomes for diversion at this stage of the criminal justice system.

### Post-Conviction Stage

A total of 19 articles assess the influence of post-conviction diversion, generally in the form of drug-courts (Bouffard, Richardson, & Franklin, 2010; Brecht, Anglin, & Dylan, 2005; Chun et al., 2007; De Wree, De Ruyver, & Pauwels, 2009; Evans et al., 2009; Evans, Longshore, Prendergast, & Urada, 2006; Gottfredson & Exum, 2002; Gottfredson, Najaka, & Kearley, 2003; Gottfredson, Najaka, Kearley, & Rocha, 2006; Heck, Roussell, & Culhane, 2009; Hiller, Knight, Devereux, & Hathcoat, 1996; Hoff, Rosenheck, Baranosky, Buchanan, & Zonana, 1999; McSweeney, Stevens, Hunt, & Turnbull, 2007; Schaub et al., 2010; Shafer et al., 2004; Shaffer, Hartman, & Listwan, 2009; Spohn, Piper, Martin, & Frenzel, 2001; Warner & Kramer, 2009; Wolfe, Guydish, & Termond, 2002). These analyses resulted in 24 effects, three of which make no reference to a comparison group (Bouffard et al., 2010; De Wree et al., 2009; Heck et al., 2009). A clear majority (75%) of the results documented in this section of the literature provide evidence of a positive effect of court-mandated treatment on criminal justice outcomes when compared with either program dropouts or non-mandated controls (Bouffard et al., 2010; Evans et al., 2009; Evans et al., 2006; Gottfredson & Exum, 2002; Gottfredson et al., 2003, 2006; Hiller et al., 1996; Hoff et al., 1999; Shaffer et al., 2009; Spohn et al., 2001; Warner & Kramer, 2009; Wolfe et al., 2002). This positive effect is counterbalanced by three null effects (McSweeney et al., 2007; Schaub et al., 2010; Shafer et al., 2004) and one negative effect (again for DUI offenders; Bouffard & Taxman, 2004). It is of note, however, that it is unclear whether a statistical analysis was conducted by Evans et al. (2009) to ascertain if there was a significantly lower reoffending rate in the treatment group.

Evidence relating to substance use outcomes in mandated treatment is more limited than that of the criminal justice outcomes above, and is less encouraging. Most (80%) reported no significant difference between intervention and comparison groups (Anglin et al., 2007; Chun et al., 2007; McSweeney et al., 2007; Schaub et al., 2010), with the addition of just one positive effect (Shafer et al., 2004). Considered together, the evidence relating to drug-court style interventions points clearly towards gains in the criminal justice domain; however, there is

little compelling evidence of a benefit for participants with regard to substance use.

### Pre-Release Stage

Our search terms reveal only two articles considering the impacts of custody-based treatments for substance use (Hiller, Knight, & Simpson, 1999; Schaub et al., 2010). The evidence from these analyses is generally consistent with no effect of prison-based interventions on criminal justice and substance use outcome measures, although there is a trend toward benefits in the criminal justice domain (Hiller et al., 1999).

### Post-Release Stage

Four articles considered community-based post-release treatment of the kind that may occur as a part of parole conditions or, in the absence of a custodial episode, as a component of sentencing (Anglin et al., 2007; Benedict, Huff-Corzine, & Corzine, 1998; Evans et al., 2009; Johnson, Friedmann, Green, Harrington, & Taxman, 2011). These studies provided limited evidence of positive effects in criminal justice and substance use domains (Evans et al., 2009). It is important to note, however, that these positive results emerged from follow-ups conducted at 1 year and were counterbalanced in the same study by null effects in both domains as observed at 5-year follow-up. Null effects were also observed for criminal justice (Johnson et al., 2011) and substance use outcomes (Anglin et al., 2007; Johnson et al., 2011), while data considered to "support proposition that drug treatment reduces further criminal behaviour" was limited by the failure to include a comparison group (Benedict et al., 1998). The totality of the evidence pertaining to this stage of the criminal justice system is thus indicative of benefits, but is far from convincing in this regard.

### Limitations

This article provides a detailed overview of the broad literature relating to legally coerced treatment for substance use. The representativeness and completeness of the review is, however, limited by approach. Specifically, we opted to search databases of peer-reviewed literature using a series of predefined search terms. This means that any relevant results reported in "grey" literature have not been examined, it also appears to have resulted in the under-sampling of studies relating to prison-based substance use treatment. While this is a weakness in that relevant and potentially high-quality studies may have been excluded from our review (for an indicative example, see Lulham, 2009), it can also be considered strength of our approach. By focusing only on peer-reviewed publications we are able to conclude that the results from literature we have reviewed provide a robust and reliable foundation for discussions of coerced treatment.

Moreover, given the breadth of the review undertaken here, we have not been able to provide a detailed examination of the methodological quality of either the efficacy studies included in our hypothesis-testing approach or the remaining categories of evaluation studies. Previous analyses of the methodological rigour applied in this area have indicated that there is

considerable scope for improvement (Harvey et al., 2007). Thus, detailed consideration of the current status of the literature, building upon the harvest plot approach (as in Thomas et al., 2008), including and beyond efficacy studies, would certainly be of value in the future.

As previous critical reviews of the field have articulated (Klag et al., 2005; Wild, 1999), consistency across scholarly work in this area is hindered by the lack of a clear and accepted definition of coerced treatment. For this article, we chose to take a broad definition of coerced treatment, and include all substance use treatment programs in which pressure to attend is exerted by actors or processes within the justice system. We therefore included prison-based programs and programs provided on parole. The results and conclusions we reach are coloured by our definition of coerced treatment. A somewhat different set of results and divergent conclusions may have been reached had we elected to use a different definition of coerced treatment.

## Future Research

There are a number of avenues for future research into the efficacy of mandatory treatment for substance use and offending. Where possible, matched comparison groups should be utilised in future evaluation studies. This may be facilitated by considerations of research design at the implementation stage of new programs so that suitable comparison groups can be established before treatment programs commence. Future research on efficacy should also collect data on both substance use and recidivism pre- and post-intervention to ensure that the primary goals of such programs are evaluated. More economic analyses of mandatory treatment programs are required (e.g., cost-effectiveness studies). Policy-makers usually want to know not only that programs work, but that they work in a cost-effective manner. The majority of research has focused on programs at the post-conviction phase of the criminal justice system (i.e., drug courts), with some neglect of program evaluation at other stages. Therefore, more research is required on programs situated at the pre-arrest, pre-trial, and pre-sentence stages. Finally, we note that of the 39 efficacy studies we located, only three evaluated Australian programs (all were pre-trial programs). Australian researchers should publish their results in peer-reviewed journals to ensure such research permeates the academic literature.

## Conclusions

The use of coerced treatment entails an obligation to provide evidence of its effectiveness. Unfortunately, the field falls short of accumulating a coherent set of methodologically robust studies attesting to the efficacy of coerced treatment programs. The current review illustrates that there remain significant gaps in the research literature around not only the efficacy of coerced treatment programs, but also program features, factors related to participation and retention, and the cost-effectiveness of such programs. Efficacy studies are clustered around some parts of the criminal justice system (e.g., drug courts) but are neglected in others, and in some countries (e.g., Australia), evaluation studies of coerced treatment programs are rarely published in the peer-reviewed literature.

There is an important role for forensic psychologists to play in this research environment. Forensic psychologists have the requisite skills and content knowledge to plan and conduct methodologically robust research which can meet the challenges posed by coerced treatment programs for substance-using offenders.

## Note

1. Please note that individual articles may be represented across multiple stages of the criminal justice system and against more than one type of outcome variable. Thus, the number of articles classified in these categories will not be equal to the total number of efficacy evaluations.

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