

Brief Strategic Family Therapy for Young People in Treatment for Drug Use

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Abstract

Purpose: This review evaluates the evidence on the effects of brief strategic family therapy (BSFT) on drug use reduction for young people in treatment for nonopioid drug use. **Method:** We followed Campbell Collaboration guidelines to prepare this review and ultimately located three studies for final analysis and interpretation. **Results:** The results are mixed: BSFT does not seem to have better or worse effects on drug use frequency and family functioning than other treatments but has positive effects on treatment retention compared to control conditions. Longer retention in treatment has been identified as a consistent predictor of a favorable outcome from drug use treatment. **Discussion:** Although it is possible that the length of follow-up in the included studies was insufficient to detect significant changes, it should be noted that the evidence we found was limited, in terms of both the number of studies and their quality.

Keywords

abuse, systematic review, quantitative, meta-analysis

Youth drug use (the terms “use,” “abuse,” and “dependence” are used interchangeably throughout this review and refer to an addiction stage of nonmedical drug usage; this definition implies that the term “use” refers to the consumption of drugs beyond experimentation and into addiction) of the kind that persists beyond the experimentation phase is a severe problem worldwide (U.N. Office of Drugs and Crime, 2010), and the use of nonopioid drugs such as cannabis, amphetamines, and cocaine is strongly associated with a broad range of health and social problems, including delinquency, poor academic achievement, fatal car accidents, suicide, and other individual as well as social tragedies (Deas & Thomas, 2001; Essau, 2006; Office of National Drug Control Policy, 2000; Rowe & Liddle, 2006; Shelton, Taylor, Bonner, & van den Bree, 2009). More than 20 million of the 12- to 25-year-olds in the United States, and more than 11 million of the 12- to 34-year-olds in Europe, had used illicit drugs (cannabis, amphetamines, cocaine, and other nonopioid and opioid drugs are illegal in most, but not all countries; e.g., the use of cannabis in small amounts is tolerated in the Netherlands) during the month prior to survey interviews in 2009 (European Monitoring Centre for Drugs and Drug Addiction, 2010; Substance Abuse and Mental Health Services Administration [SAMSHA], 2010). Seven percent of Australian 12- to 17-year-olds had used some kind of drug during the month prior to survey interviews in 2008 (White & Smith, 2009). In Canada, 26% of the 15- to 24-year-olds questioned had used some form of illicit drugs during the past year (Health Canada, 2010).

Although by no means all young drug users progress to severe dependence, many of them do and may therefore require

treatment (Crowley, Macdonald, Whitmore, & Mikulich, 1998; Liddle, 2004). For example, 8.4% of 18- to 25-year-olds in the United States are classified as needing treatment for illicit drug use, though less than one tenth of these young people actually receive treatment (National Survey on Drug Use and Health [NSDUH], 2007). Likewise, among young people aged 12–17, 4.5% were estimated to be in need of treatment for a drug use problem, but only one tenth of this group actually received any (SAMSHA, 2010). Research calls attention to the significant gap between the number of young people classified as in need of treatment and the number of young people who actually receive such treatment (NSDUH, 2007; SAMSHA, 2010).

There is growing public concern regarding the effectiveness and high costs of available treatments for young people and regarding the high rates of treatment dropout and posttreatment relapse to drug use (Austin, Macgowan, & Wagner, 2005; Najavits & Weiss, 1994; Stanton & Shadish, 1997). Accordingly, treatment to help young drug users should be attractive and available in order to minimize the chance of dropout and relapse (National Institute on Drug Abuse, 2009; Simmons et al., 2008). Furthermore, the services provided should be empirically supported to increase the likelihood that (a)

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treatment will be successful and (b) public spending supports the interventions that are the most effective.

Researchers point to the fact that many research projects have empirically validated different kinds of treatment approaches for young drug users as effective (e.g., Austin et al., 2005; Rowe & Liddle, 2006; Waldron, Turner, & Ozechowski, 2006; Williams, Chang, & Addiction Centre Adolescent Research Group, 2000). The current dilemma in the field of substance abuse treatment for young people is that it is not clear what works best, with research suggesting that almost all interventions lead to reduced drug use. While there are some promising individually based cognitive and motivational therapies (Deas & Thomas, 2001; Galanter & Kleber, 2008; Kaminer, 2008; Waldron & Turner, 2008), family-based approaches may be equally effective. Family therapy encompasses a range of different interventions with varying theoretical sources, including behavioral and cognitive behavioral theory, structural and strategic family theory, and family systems theory (Austin et al., 2005; Williams et al., 2000). Some reviews have suggested that these family-based therapies are superior to individual-based programs in reducing youth drug use (Lipsey, Tanner-Smith, & Wilson, 2010; Waldron, 1997; Williams et al., 2000).

Young people with persistent drug use have unique needs due to their particular cognitive and psychosocial development. Young people are especially sensitive to social influence, with family and peer groups being highly influential. Youth drug treatments which facilitate positive parental and peer involvement and which integrate other systems in which the young person participates (such as schools, social services, and justice authorities) are thus key to reducing drug use by young people (National Institute on Drug Abuse, 2009). A number of studies and reviews have shown positive results for family therapies in general, but there is a need to synthesize individual study results for specific family therapies to determine whether and to what extent specific family therapy interventions work for young drug users (Austin et al., 2005; Deas & Thomas, 2001; Kaminer, 2008; Waldron & Turner, 2008; Williams et al., 2000).

This review is concerned specifically with brief strategic family therapy (BSFT; Robbins & Szapocznik, 2000; Szapocznik, Hervis, & Schwartz, 2003), as a strong body of evidence on the effects of this form of family-based intervention is sorely lacking. This review has attempted to clarify the effects of the BSFT program for relevant groups of young people aged 11–21 and has focused on young people enrolled in treatment for drug use, irrespective of how their problem was defined. Enrolment in treatment is taken to imply that the severity of the young person's drug use has compelled a close, significant adult (e.g., teacher, parent, social services employee, or school counselor) to demand that the young person enters treatment. BSFT is an intervention offered as outpatient treatment (a Cochrane review has evaluated psychosocial interventions for substance abuse and misuse in young offenders in locked facilities; Townsend et al., 2009) to young people aged 11–21 who are living with their families.

This review focuses solely on nonopioid drug use (two Cochrane reviews have evaluated psychosocial treatments for treatment of opioid dependence; Amato, Minozzi, Davoli, & Vecchi, 2011; Minozzi, Amato, Vecchi, & Davoli, 2010) and is one in a series of reviews on manual-based family therapy interventions for young people in treatment for nonopioid drug use. (See the following Title Registrations in the Campbell Library: family behavior therapy for young people in treatment for illicit nonopioid drug use [Lindstrøm M., Rasmussen P. S., Kowalski K., Filges T., & Jørgensen A.-M.]; functional family therapy for young people in treatment for illicit nonopioid drug use [K. Kowalski, M. Lindstrøm, P. S. Rasmussen, T. Filges, and A.-M. Jørgensen]; multidimensional family therapy for young people in treatment for illicit nonopioid drug use [P. S. Rasmussen, M. Lindstrøm, K. Kowalski, T. Filges, and A.-M. Jørgensen].)

Description of the Intervention

BSFT is a manual-based, family-oriented prevention and treatment intervention that targets a young person's drug use. It is a *problem-focused* family therapy, aiming at creating changes in those interactions relevant to the identified problems within families and in individual family members who appear particularly resistant to change.

BSFT is a family therapy approach that targets young people *and their families as a system* throughout the treatment and thereby recognizes the importance of the family system in the development and treatment of young people's drug use problems (Liddle et al., 2001; Muck et al., 2001). BSFT was developed at the Center for Family Studies, University of Miami. The program was developed in the 1970s as an intervention targeting Hispanic minority young people, primarily immigrants from Cuba (Robbins & Szapocznik, 2000). The program was originally developed to be culturally sensitive in relation to Cuban immigrants in Miami but has since been revised and is now a broadly applied intervention for young people; primarily those displaying problem behavior and drug use (Robbins & Szapocznik, 2000). BSFT can be adapted to make it more relevant to the population it serves and is thus considered to be sensitive to different cultural and ethnic groups, as well as rural versus inner-city conditions (Robbins, Bachrach, & Szapocznik, 2002).

Theoretical background. BSFT applies a family systems approach that relies on both structural and strategic family theory (Robbins & Szapocznik, 2000; Szapocznik et al., 2003). Along with other family systems-based therapies, it builds on the assumption that families can be viewed as systems and, as such, each individual in the family is important for the family system as a whole (Poulsen, 2006). In family systems theory, the family is perceived as a unique system consisting of interdependent and interrelated members. The family members are influenced by each other's actions and relate strongly to each other, and as such they can be viewed as a unique and changeable system. The behavior of each family member must

be understood in relation to the family context. The problem behavior of young family members is seen as generally associated with maladaptive social interaction patterns in the family, and therefore any interventions must be implemented at family level. The family itself is part of a larger social system, and just as young people are influenced by their families, so are families influenced by the larger social (and cultural) systems in which they exist (Austin et al., 2005; Doherty & McDaniel, 2010; Kaminer & Slesnick, 2005; O'Farrell & Fals-Steward, 2008; Poulsen, 2006). Family therapies are concerned with the wider social context in which both the individual and the family are embedded.

Structural family theory is based on the idea that subsystems, structures, and hierarchies within families influence or determine the actions of individual family members (Goldenberg & Goldenberg, 2008; Minuchin, 1985). In structural family theory, social interactions are understood structurally as repetitive patterns of interaction. The family structure can range from a supportive structure to a maladaptive structure. Either way, the structure of interactions affects the family members and can play a pivotal role in maintaining positive as well as problem behavior (Austin et al., 2005; Doherty & McDaniel, 2010; Kaminer & Slesnick, 2005; Madanes & Haley, 1977; O'Farrell & Fals-Steward, 2008; Poulsen, 2006).

BSFT is a strategic approach, whereby components are planned, practical, and problem focused. Intervention components are tailored to the young person and his or her family. Components are selected based on their likelihood of targeting the identified core problems and of positively affecting the young person and their families in the desired direction (e.g., reduced drug use and improved family interactions). The components are problem focused in the sense that only those interactions that most directly affect the young person's drug use problems are targeted. The intervention components are well planned in the sense that the therapist determines which interactions are directly linked to the symptomatic behavior of the young person and determines which of these will be targeted. The therapist thus creates a tailored plan to help the family develop more appropriate patterns of interaction (Horigian, Robbins, Dominguez, Ucha, & Rosa, 2010; Robbins & Szapocznik, 2000; Szapocznik et al., 2003; Szapocznik & Williams, 2000).

BSFT components. BSFT contains three major components: "joining," "diagnosing," and "restructuring" (Horigian, Robbins, & Szapocznik, 2004; Robbins & Szapocznik, 2000; Szapocznik et al., 2003; Szapocznik & Williams, 2000).

Joining. Joining is the process of engaging young people and family members in treatment through the establishment of a good therapeutic relationship. Joining occurs at the individual level (the therapist establishes a relationship with each family member) and at the family level (the therapist joins with the family system to create a new therapeutic system by becoming a temporary member of the family). Through recognizing, respecting, and maintaining the family's characteristic

interactional patterns, the therapist attempts to establish an alliance with the individual family members and the family as a whole (Horigian et al., 2004; Robbins & Szapocznik, 2000; Szapocznik et al., 2003; Szapocznik & Williams, 2000).

Diagnosing. BSFT focuses on identifying inappropriate family alliances, family boundaries, and maladaptive interaction patterns. Prior to the diagnosis, therapists of BSFT must create a therapeutic context in which family members are free to interact in their typical style. These "enactments" permit the therapist to observe directly how the family behaves and to diagnose on this basis (Horigian et al., 2004). The "diagnosis" of alliances, boundaries, and patterns will reveal how the characteristics of family interactions contribute to the family's difficulties in meeting the objective of eliminating or reducing the young person's drug problems. The therapist analyzes family interactions on five interactional dimensions: structure, resonance, developmental stage, identified patient, and conflict resolution (Horigian et al., 2004; Robbins & Szapocznik, 2000; Szapocznik et al., 2003). Diagnosing includes seeing the patterns of family interaction and their influence on the young person's problems in context (e.g., the young person's network and social setting). Individual risk, social risk, and protective factors must therefore be taken into consideration by the therapist when evaluating the impact of family interactions on the young person's drug problems (Szapocznik et al., 2003). The diagnosis component allows the BSFT program to be flexible and adaptable to different social settings, family structures, and cultures and also to co-occurring conditions such as juvenile justice system issues or comorbid mental health conditions.

Restructuring. The goal of restructuring is to change maladaptive family interaction patterns related to the young drug user's problems into more adaptive and successful ways of interacting (Horigian et al., 2004; Robbins & Szapocznik, 2000; Szapocznik et al., 2003). Key restructuring components are "working in the present," "reframing," and "working with boundaries and alliances" (Horigian et al., 2004; Robbins & Szapocznik, 2000; Szapocznik et al., 2003).

Working in the present. BSFT focuses primarily on the current interaction among family members and distinguishes between process and content. The main focus during therapy sessions is on interaction processes between family members.

Reframing. The aim of reframing is to disrupt maladaptive interaction patterns and create a new context for family interactions. Reframing offers positive alternatives to the family by, for example, shifting the family members' views of the young drug user from a "troubled young person" to, for example, a "vulnerable young person in pain." Highly gendered interaction patterns in the family may also be adjusted in the reframing process.

Working with boundaries and alliances. According to BSFT, families of young drug users need a strong parental leadership, in the form of a strong alliance between parents with the power to make executive decisions together. For

single parents, there is a need for a strong parental position. The therapist will work to restore the parent alliance in families where this is weak or disrupted. For single parents, the therapist will work to establish and/or reinforce a strong parental position. In BSFT, the therapist will also aim to set clear boundaries between family members, thereby allowing all members some privacy and independence within the family. It is recognized that boundaries and alliances can vary according to gender and age and that this process will be sensitive to such issues.

Intervention components in BSFT are tailored to the young person and his or her family needs and are based on the components' likelihood of positively affecting the young drug user and his or her family in the desired direction (e.g., reduced drug use and improved family interactions). The distribution of components in the BSFT intervention will therefore vary to suit the needs of family members. The tailoring of the BSFT program and its focus on family system and family functioning could act as a catalyst for positive side effects including improved overall family functioning and improved educational outcome for the young person in treatment, as well as for siblings who will also be affected by better family functioning.

Duration and setting. Despite the inclusion of the word "Brief" in the program title, the duration of BSFT is comparable to other family therapy programs. The average length of the BSFT intervention is 12–16 sessions. The program is flexible, however, and can be tailored to individual needs (Robbins et al., 2002) and can be implemented in a variety of settings, including clinical or community facilities or in the family home (Robbins et al., 2002).

How the Intervention Might Work

BSFT has two primary objectives: (1) to eliminate or reduce young people's drug use and (2) to change the family interactions associated with young people's drug use. Randomized controlled trials and systematic reviews have indicated that BSFT can reduce drug use in participants and can contribute to a reduction in conduct problems and delinquency (Austin et al., 2005; Robbins et al., 2002; Santisteban et al., 2003; Waldron & Turner, 2008). The program outcomes may be affected by participant characteristics and program mechanisms. Participant characteristics that have been found to predict program drug use reduction or abstinence were history and severity of drug use pretreatment; level of general peer and parental support, particularly in relation to nondrug use; and higher levels of school attendance and functioning pretreatment (Williams et al., 2000). More information is required by practitioners on highly relevant participant characteristics, such as age, gender, ethnicity, family composition (e.g., single parents), and co-occurring conditions. These participant characteristics are potential predictors of treatment outcome and practitioners need to be able to assess the program's relevance for all types of client.

Intervention mechanisms. Treatment variables with positive impacts on treatment outcomes have been identified in a number of reviews of a range of treatments for youth drug use (Waldron & Turner, 2008; Williams et al., 2000).

Treatment completion was the variable most consistently related to reduction in drug use (Waldron & Turner, 2008; Williams et al., 2000). Building an alliance early in treatment was found to predict the likelihood that young people completed treatment and reduced their drug use (Waldron & Turner, 2008). It remains unclear whether this was a direct treatment impact, or an indicator for treatment motivation, which has been noted as another key to positive treatment outcome. Either way, these findings point to the importance of the BSFT component joining as a key mechanism, influencing treatment compliance and attendance. Studies have shown that BSFT positively affected the involvement and retention in treatment of young people and their families (Coatsworth, Santisteban, McBride, & Szapocznik, 2001; Santisteban et al., 1996, 2003). This can be linked directly to the joining effort. In BSFT, joining has two aspects: Joining refers both to the steps the therapist takes to prepare the family for change and to the point when the therapist gains a position of leadership within the family. A number of techniques can be used to prepare the family to accept therapy and to accept the therapist as a leader of change. For example, the therapist can present himself or herself as an ally, appealing to those family members with the greatest dominance over the family unit and attempting to fit in with the family by adopting the family's manner of speaking and behaving. These techniques can be adapted to the needs of various client groups.

Motivation, as a key to positive treatment outcome (Waldron & Turner, 2008; Williams et al., 2000), was also linked to the support and influence of the family system. The family system's ability to influence the young person toward a lifestyle that does not involve drug use is a possible mechanism of change related to the inherent focus on family system in BSFT (Hogue & Liddle, 2009; Ozechowski & Liddle, 2000). Studies have found that BSFT positively influenced family interaction changes, family functioning, and contributed to the reduction in young people's drug use (Ozechowski & Liddle, 2000; Robbins et al., 2002; Santisteban et al., 2003). For example, Valdez and Cepeda (2008) found that parents participating in the BSFT intervention benefited from the parenting training and education in youth and family conflict, which led to a reduction in the young person's drug use. According to Valdez and Cepeda, parents who participate in the BSFT intervention have been found to display improved ability in identifying signs of, for instance, youth gang participation; improved ability to communicate with the young person about gang issues and drug issues; and improved knowledge about a parent's responsibility related to youth gang and drug participation. In addition, parents who participated in BSFT displayed improved knowledge about the negative health and legal consequences of substance use.

Youth coping mechanisms have also been identified as predictors of treatment outcome (Waldron & Turner, 2008). The

young people participating in BSFT also displayed positive behavior improvements over the course of the treatment intervention, such as improved conflict resolution skills, improved self-identity and sense of personal resources, and reduced gang and drug identification (Valdez & Cepeda, 2008). Improvements were gained through the reframing phase during which the therapist works with both the young person and the family members to change their ways of behavior toward a more constructive behavioral pattern (Horigian et al., 2004; Robbins & Szapocznik, 2000; Szapocznik et al., 2003). The therapist coaches the young person and family members on constructive interaction methods, ensuring that new interaction patterns are practiced at home in naturally occurring situations, such as when setting a curfew or when eating meals together (Szapocznik et al., 2003).

The quality of the therapeutic alliance predicted the family's engagement, retention in treatment, and gains from therapy (Robbins, Szapocznik, Alexander, & Miller, 1998). Robbins, Horigian, and Szapocznik (2004) have demonstrated how unbalanced alliances between the therapist and the young person and/or the family in early BSFT sessions have been linked to higher program drop-out rates. In BSFT, one of the most useful strategies a therapist could employ in joining was to support the existing family power structure. Szapocznik, Hervis, and Schwartz (2003) concluded that:

The BSFT counselor supports those family members who are in power by showing respect for them. This is done because they are the ones with the power to accept the counselor into the family; they have the power to place the counselor in a leadership role, and they have the power to take the family out of counseling. In most families, the most powerful member needs to agree to a change in the family, including changing himself or herself. For that reason, the counselor's strongest alliance must initially be with the most powerful family member. (Szapocznik et al., 2003, p. 26)

The family systems focus and the joining effort were both found to be key ingredients in BSFT, influencing family functioning and facilitating changes in young people's drug problems.

Why it is important to do this review. Persistent drug use among young people is a significant social problem, and the treatment of young people's drug use is challenging and costly, not least because the treatments for such problems are plagued by high drop-out rates and posttreatment relapse. Research suggests that nearly half of all young drug users who enter treatment never complete it (SAMSHA, 2008). There is a need to identify effective treatments for addressing young people's drug use problems and to reduce dropout from treatment programs and posttreatment relapse. Furthermore, the growing interest among policy makers in increasing funding for evidence-based interventions was a strong motivation for collecting further evidence with a systematic review on a promising treatment for young drug users.

There are a number of studies indicating that BSFT does show potential as an effective treatment for young people with

nonopioid drug use. By aggregating the results from individual studies on BSFT, this review contributes to the body of knowledge on the treatment of young drug users and their families. The review informs practice by exploring the effects of BSFT for relevant client groups.

Objectives

The aim of this review was to evaluate the current evidence on the effects of BSFT on drug use reduction for young people in treatment for nonopioid drug use.

Methodology

Criteria for Including Studies in the Review

Types of studies. The study designs eligible for inclusion were controlled trials (a controlled trial typically includes at least two groups, an intervention/experimental group and a control group, and outcome measures recorded pre- and posttreatment, see Lindstrøm et al., 2013 for a definition), either randomized controlled trials (RCTs), quasi-RCTs (QRCTs), or non-RCTs (NRCTs).

We did not find any relevant quasi-randomized or nonrandomized studies for inclusion in this review.

Types of participants. The population included in this review was young people aged 11–21 years enrolled in outpatient manual-based BSFT drug treatment for nonopioid drug use. Nonopioid drugs were defined as cannabis, amphetamines, ecstasy, or cocaine. The misuse of prescription drugs and the use of ketamine, nitrous oxide, and inhalants such as glue and petrol were not considered in this review.

Definitions of young people, and the age at which someone is considered to be a young person and may be entitled to special services such as drug treatment, vary internationally (United Nations, 2011). Age group distinctions for young people are unclear, as the boundaries are fluid and culturally specific (Weller, 2006). Furthermore, young people start experimenting with illegal drugs at different ages in different countries (Hibell et al., 2009). Similarly, patterns of independence from parents and of independent living vary internationally for young people. In order to encapsulate these international differences, we have set the age range from 11 to 21 (Danish Youth Council, 2011; Hibell et al., 2009; SAMSHA, 2010; United Nations, 2011).

We included only interventions delivered in an outpatient setting in order to evaluate the effects of BSFT on youths living with their families, since family interactions are fundamental to BSFT.

We defined the population as young people referred to or in treatment for using nonopioid drugs. No universal international consensus exists concerning which categories should be used when classifying drug users (clients who use drugs are variously classified as users, misusers, and dependents. These specific categorizations are used in the *Diagnostic and Statistical Manual of Mental Disorders [DSM]*; American Psychiatric

Association, 1994, 2000). While *DSM-IV* is widely used, the International Statistical Classification of Diseases and Related Health problems (ICD, now ICD-10) developed by the World Health Organization (WHO) is also in widespread use. Differences between these rubrics concern both terminology and categorization criteria. For example, *DSM-IV* includes the category “abuse,” while ICD-10 explicitly avoids this term on the grounds of its ambiguity; harmful use and hazardous use are the equivalent terms in WHO usage, but the categories are not identical; and while ICD-10 uses only physical and mental criteria, *DSM-IV* also includes social criteria (Nordegren, 2002; WHO, 2011), and different assessment tools and ways of classifying the severity of drug use are applied in different research studies (American Psychiatric Association, 2000; Nordegren, 2002; WHO, 2011). We included all participants, regardless of any formal drug use diagnosis. The main criterion for inclusion was that the young person was enrolled to participate in the treatment (i.e., intervention or comparison condition). Referral to and enrolment in drug use treatment suggests a level of drug use such that a significant other or authority (or the young person themselves) has found it necessary to seek treatment.

In conducting the review, we became aware that there are a number of reasons why a young person may become enrolled in BSFT for nonopioid drug use. One is that there is clear evidence of drug use, either observed or self-reported; another is that the young person is seen as at significant risk of using drugs by nature of his or her environment or peer group. Given this complexity, the fact that an individual may fall into more than one of these groups, and the inherent difficulty in determining accurately the proportion of nonopioid drug users in any sample of young people, we chose to include studies where at least 50% of participants had either used or were suspected of using drugs, and the rest of the sample was at risk of drug use through having peers that did.

Types of interventions. The review included outpatient manual-based BSFT interventions of any duration delivered to young people and their families (see Description of the Intervention subsection). The interventions included were delivered in outpatient settings and did not include overnight stays in a hospital or other treatment facility. The BSFT interventions took place in the home, at community centers, in a therapist’s office, or at other outpatient facilities.

BSFT is a family intervention requiring the active participation of the young drug user and his or her family, with one of the primary aims being the improvement of family functioning. In cases where the young drug user is placed outside the family home, as with inpatient treatment or incarceration in a locked facility, the core condition of the program would be seriously compromised.

Eligible comparison conditions included no intervention, waitlist controls, and alternative interventions including treatment as usual (TAU), as we were interested in both absolute and relative effects. Due to ethical considerations and the nature of the problem (i.e., young peoples’ drug use), the

likelihood of finding a no treatment control condition was small. We expected (and found) that the most frequent comparison condition was an alternative intervention (Lipsey et al., 2010).

Types of outcomes. We considered the following outcomes:

Primary outcome.

Abstinence or reduction of drug use, for example, as measured by (1) biochemical test (e.g., urine screening for drug use), (2) self-reported estimates of drug use (e.g., Timeline Followback [TLFB]; Sobell & Sobell, 1992), and (3) psychometric scales (e.g., Addiction Severity Index; McLellan, Luborsky, Woody, & O’Brien, 1980).

Secondary outcomes.

Family functioning (e.g., as measured by the Beavers Interactional Competence Scale; Beavers & Hampson, 2000);

Education or vocational involvement (e.g., as measured by grade point average, attendance, self-reported or reported by authorities, files, registers, or employment record);

Treatment retention (e.g., as measured by days in treatment, completion rates, and/or attrition rates);

Risk behavior, such as crime rates, prostitution (e.g., as measured by self-reports or reports by authorities, administrative files, and registers);

Other adverse effects (e.g., as measured by length and frequency of hospitalization, suicide, and overdose).

Search Methods for Identification of Studies

The searches were run by one review author (A.K.J.) and a member of the review team (Pia Vang Hansen was a member of the review team and assisted the review authors with the literature searches). For details of search methods, see Lindstrøm et al., 2013.

Data Collection and Analysis

Selection of studies. One review author (M.S.) and one member of the review team (Stine Lian Olsen was a member of the review team and assisted the review authors with screening) independently screened titles and available abstracts to exclude studies that were clearly irrelevant. Studies considered eligible by at least one of the reviewers were retrieved in full text. The full texts were then screened by one reviewer (M.S.) and one member of the review team (S.L.O.) to determine study eligibility based on the inclusion criteria. Any disagreements about eligibility were resolved by discussion. Reasons for exclusion were documented for each study that was retrieved in full text (see Lindstrøm et al., 2013). The study inclusion screening sheet was piloted and adjusted as required by the review authors and used throughout screening. The overall search and screening process is illustrated in a flow diagram (Figure 5).

Data extraction and management. Two review authors (M.L. and M.S.) independently coded and extracted data from the

included studies. The data extraction sheet was piloted and revised as necessary. Any disagreements were resolved by discussion. Data were extracted on the characteristics of participants (e.g., age, gender, and drug use history), characteristics of the intervention and control conditions, research design, sample size, outcomes, and results. Extracted data were stored electronically. Analysis was conducted in Excel and RevMan 5.1.

Assessment of risk of bias in included studies. We assessed the methodological quality of studies using a risk of bias model developed by Prof. Barnaby Reeves, which was introduced by Prof. Reeves at a workshop on risk of bias in nonrandomized studies at SFI Campbell, February 2011. The model is developed in association with the Cochrane Non-Randomized Studies Methods Group (Reeves, Deeks, Higgins, & Wells, 2011). This model, an unpublished extension of the existing Cochrane Collaboration's risk of bias tool (Higgins & Green, 2008), covers both risk of bias in RCTs and in NRCTs that have a well-defined control group.

The extended model is organized and follows the same steps as the existing Risk of Bias model according to the Cochrane Handbook, chapter 8 (Higgins & Green, 2008). The extension to the model is explained in Lindstrøm et al. (2013).

Risk of Bias Judgment Items and Assessment

The risk of bias model used in this review is based on 9 items. The 9 items refer to sequence generation (judged on a low/high risk/unclear scale—NRCTs will automatically have a high risk of bias), allocation concealment (judged on a low/high risk/unclear scale), confounders (judged on a 5-point scale/unclear, only relevant for nonrandomized studies), blinding (judged on a 5-point scale/unclear), incomplete outcome data (judged on a 5-point scale/unclear), selective outcome reporting (judged on a 5-point scale/unclear), other potential threats to validity (judged on a 5-point scale/unclear), a priori protocol (judged on a yes/no/unclear scale), and a priori analysis plan (judged on a yes/no/unclear scale).

The assessment was based on prespecified questions (see Lindstrøm et al., 2013). A score of 5 points on any of the items assessed translates to a risk of bias so high that the findings would not be considered in the data synthesis (because they are more likely to mislead than inform). None of the included studies or parts thereof was judged as 5 on the risk of bias scale. Confounding was not relevant in the review since we did not find any NRCTs meeting the inclusion criteria.

Assessment

Review authors (M.L. and M.S.) have independently assessed the risk of bias for each included study as described in the previous sections. Disagreements were resolved by discussion and, where necessary consulting a third reviewer with content and statistical expertise (T.F.). The risk of bias assessment for each included study is reported in Lindstrøm et al. (2013).

Measures of treatment effect. Reduction of drug use is measured in terms of frequency of drug use. When available, standardized mean differences (SMDs) were used as the effect size metric. For family functioning and drug use, SMDs were available in the studies by Santisteban et al. (2003) and Valdez and Cepeda (2008) and were used as the effect size matrix. Drug use outcome means and standard deviations (*SDs*) were not available in Robbins et al. (2011), where only binary data were available. For this study, we transformed the odds ratio (OR) to an SMD using the Cox transformation (Sánchez-Meca, Marín-Martínez, & Chacón-Moscoso, 2003). Hedges *g* was used for estimating SMDs. Odds ratios were used as the effect size metric for treatment retention. Computations were carried out with the natural logarithm of the odds ratio. For outcomes where effects sizes could not be pooled (e.g., education or vocational involvement, risk behavior, and other adverse effects), we have reported the study level effects in as much detail as the included studies permit. Software used for storing data and statistical analyses was RevMan 5.0 and Excel.

Unit of analysis issues. We planned to take into account the unit of analysis of the studies to determine whether individuals were randomized in groups (i.e., cluster randomized trials), whether individuals had undergone multiple interventions, whether there were multiple treatment groups, and whether there were multiple publications for some studies.

Multiple interventions per individual. We did not find any studies with multiple interventions per individual. In two studies, BSFT was adapted to participants' needs as suggested in the BSFT manual.

Multiple time points. Two of the included studies report at the time point coinciding with the termination of treatment (Santisteban et al., 2003; Valdez & Cepeda, 2008). Robbins et al. (2011) report follow-up at 4, 8, and 12 months postbaseline. We used the 8-month postbaseline follow-up in Robbins et al. as equivalent to the end of treatment time points for Santisteban et al. (2003) and Valdez and Cepeda (2008). The motivation for this choice is the fact that this would be close to termination for the majority of participants in Robbins et al. There is no indication in Robbins that the prolonged duration of treatment included more sessions than originally planned. Furthermore, choosing the 4-month postbaseline time point would mean analyzing incomplete treatments for the majority of participants. We decided that the interventions were comparable at the end of treatment for Santisteban et al. and Valdez and Cepeda and at 8 months postbaseline for Robbins et al.

Multiple intervention groups. No studies with multiple intervention groups were found.

Cluster randomized trials. No cluster randomized trials were included in the review.

Dealing with missing data and incomplete data. The reviewers have assessed missing data and recorded attrition rates for the three included studies. None of the included studies reported

any reasons for attrition, however. The reviewers contacted study authors for further details on missing data in November 2011.

Intention-to-treat (ITT) analysis. None of the included studies used ITT methods that could be used in the meta-analysis.

Assessment of heterogeneity. Heterogeneity among primary outcome studies was assessed using χ^2 (Q) test, and the I^2 , and τ^2 statistics (Higgins, Thompson, Deeks, & Altman, 2003).

Assessment of publication bias. Reporting bias refers to both publication bias and selective reporting of outcome data and results. Selective reporting was dealt within the risk of bias assessment. As the opportunities for meta-analysis were few within this review, our plans for funnel plots and related methods were not feasible.

Data Synthesis

None of the included studies were coded at 5 on the Risk of Bias 5 point scale, and all three studies are included in the data synthesis where possible. We did not find any studies comparing BSFT to no treatment or to untreated waitlist controls and we could not therefore draw any conclusions on the absolute effects of BSFT. The analysis of the relative effects of BSFT (vs. other interventions) was conducted on studies that compared BSFT to other interventions and/or to TAU. We were able to group time points at the end of treatment, as described in the Unit of Analysis Issues subsection.

We pooled results from primary studies based on outcomes and performed meta-analysis. All analyses were inverse variance weighted using random effects statistical models that incorporated both the sampling variance and the between-study variance components into the study level weights. Random effects weighted mean effect sizes were calculated using 95% confidence intervals (CI).

A random effects model was chosen to represent the overall effect, as we expected the studies to deal with diverse populations of participants. We have reported the 95% CIs and provided a graphical display (forest plot) of effect sizes in the section Effects of the Interventions subsection.

Moderator analysis/subgroup analysis and investigation of heterogeneity. We did not identify enough studies to conduct any subgroup analysis.

Sensitivity analysis. There were too few studies to conduct sensitivity analysis.

Results

Results of the Search

We ran the main searches in June 2011. We searched 14 international and Nordic bibliographic databases, performed an extensive search for gray literature, and hand searched five core

journals in October 2011. The total number of potential relevant records was 2,100, after excluding duplicates from the database search (database: 265, gray: 1,165, hand search and other: 670). The balance between the search results from the different resources is somewhat different from other reviews. The approved strategy used in the bibliographic databases was simple, precise, and focused in order to locate studies with BSFT, resulting in a relatively low number of records. In comparison, the numbers of results from the gray literature search and from the hand search appear relatively high. All 2,100 records were screened based on title and abstract and 58 records were retrieved and screened in full text. Of these, 52 did not fulfill the screening criteria and were excluded. One article that was identified through contact with the study author (snowball search) was included.

Six articles met the inclusion criteria and were data extracted by the review's authors. Two studies that had been data extracted were later excluded due to irrelevant focus of the studies. A total of three unique studies, reported in four articles, were included in the review. See Lindström et al. (2013) for further details on included and excluded studies.

Description of the Studies

Included studies. Three studies met our inclusion criteria: One study is an RCT on the effects of BSFT on drug-using youths aged 13–17, performed at eight sites across the United States. The study is reported in two articles: Robbins et al. (2011) summarized the trial and reported on outcomes related to drug use and family functioning and was published in the *Journal of Consulting and Clinical Psychology* in December 2011, whereas Horigian, Robbins, Dominguez, Ucha, and Rosa (2010) investigated and reported adverse effects of the Robbins et al. trial and was published in *Clinical Trials*, July 2010. In the following description, we will refer to this first trial as Robbins et al., unless specific results regarding the article by Horigian et al. are mentioned, in which case we will cite Horigian et al.

The second included study is Santisteban et al. (2003), which is an RCT on the effects of BSFT on drug-using Hispanic youths aged 12–18, performed in Miami, Florida. Santisteban et al. reports on the second phase of a two-phase study. The first phase included a pretreatment activity, where participants received an engagement intervention (Santisteban et al., 1996). The current study was published in the *Journal of Family Psychology* in March 2003.

The third study (Valdez & Cepeda, 2008) is an RCT on the effects of BSFT adapted to Mexican American drug-using and gang-affiliated youths aged 12–17, performed in San Antonio, Texas. This study was presented to the American Sociological Association in Boston, Massachusetts, on August 2008.

In the following, we will refer to the second and third included studies as Santisteban et al. (2003) and Valdez and Cepeda (2008), respectively.

Location. All studies were performed in the United States. Robbins et al. (2011) took place at multiple community

treatment facilities: Tucson, Arizona; Cincinnati, Ohio; Miami, Florida; Jacksonville, Florida; Bayamon, Puerto Rico; Salisbury, North Carolina; Tarzana, California; and Denver, Colorado. Santisteban et al. (2003) was performed at the Spanish Family Guidance Center, Miami, Florida. Valdez and Cepeda (2008) was performed in collaboration between the Office of Drug and Social Policy Research, University of Houston and a community-based treatment center in San Antonio, Texas.

Design. All included studies were described by the investigators as RCTs. Robbins et al. (2011) and Valdez and Cepeda (2008) were randomized by family. Santisteban et al. (2003) did not report a unit of randomization. All three studies were two armed studies (Robbins et al., 2011; Santisteban et al., 2003; Valdez & Cepeda, 2008).

Sample size. Robbins et al. (2011) randomized 480 participants. Santisteban et al. (2003) randomized 126 participants. Valdez and Cepeda (2008) randomized 200 participants. These numbers reflect the sample sizes at the point of randomization (not at recruitment or completion).

Participants. Participants in the included studies were aged between 12 and 18 years. The majority of participants included within the review were males, ranging from 59 to 78% of the study population. Family composition for participants in Robbins et al. (2011) and Valdez and Cepeda (2008) was 47% and 58% single parent households, respectively, and was 70% two parent households in Santisteban et al. (2003). Participants were mainly Hispanic. The main drug used by participants across all studies was cannabis (Table 1).

Inclusion criteria in included studies. Inclusion criteria in Robbins et al. (2011) were that participants needed to be of age 13–17 and have self-reported use of illicit drugs or be referred from an institution (e.g., detention and residential treatment) for drug use treatment. Participants also had to be living with a family (defined to include any parental/adult guardian, except foster) in the geographical area of the treatment facility.

Inclusion criteria in Santisteban et al. (2003) were that participants needed to be self-referred or referred by a school counselor and be exposed to parental or school complaints of externalizing behavior problems (e.g., drug use, violent or disruptive behavior, and trouble with police). Although the inclusion criteria in Santisteban et al. imply that the study did not exclusively recruit participants with a significant drug use problem, the report on the first phase of this study regarding engagement enhancement by Santisteban et al. (1996) described the participants as “... [eds.] ‘Hispanic families of adolescents who were suspected of, or at risk for, drug abuse. These adolescents were identified using a revised version of the Drug Abuse Syndrome Check List’ (Santisteban et al., 1996, p. 36). We chose to include the study based on this information.

Inclusion criteria in Valdez and Cepeda (2008) were that participants needed to be Mexican American adolescents between the ages 12 and 17 who had used one or more illicit substances or alcohol during the month prior to assessment or who had used illicit substances or alcohol on at least six

occasions in the past year. Participants had to be gang-affiliated and not already undergoing treatment. The inclusion criteria in Valdez and Cepeda make it difficult to assess the proportion of participants with significant drug use problem. However, data from the youths’ self-reported alcohol and/or drug use (past 30 days) reveal that 55% had consumed alcohol and 77% had consumed marijuana. We chose to include the study based on these data.

Exclusion criteria. Robbins et al. (2011) excluded adolescents with current (at time of recruitment) or pending severe criminal offences that would likely result in incarceration in order to ensure availability for follow-up interviews. Santisteban et al. (2003) did not report any exclusion criteria. In Valdez and Cepeda (2008), exclusion criteria were chronic illness, developmental delay, parents in residential treatment for psychiatric or substance abuse disorders, youths diagnosed to be in active phase psychosis, and youths who were wards of the court.

Experimental interventions in included studies. In Robbins et al. (2011), participants were allocated to manual-based BSFT, and for some families, booster sessions were added within the BSFT program. The booster sessions were given based on an assessment and addressed other systems either as content within the planned BSFT sessions or as extra sessions (e.g., parents were coached on how to communicate with school personnel or probation officers). Participation in generally available agency-based ancillary services (such as case management or Alcoholics Anonymous [AA]) was permitted with 97% of sessions classified as family therapy. The BSFT sessions included the youth in question and one family member in 22% of sessions, two family members in 24% of sessions, and three or more family members in 54% of sessions. Duration of therapy was planned to be 12–16 weekly, 1-hr sessions over 4 months; however, treatment lasted much longer than expected. Data on the mean number of sessions were not available, although the median month of last treatment session for those participants who remained in treatment was the eighth month.

Santisteban et al. (2003) allocated participants to manual-based BSFT for experimental intervention although some participants had been exposed to engagement enhancement interventions in an earlier stage of the study (Santisteban et al., 1996). In Santisteban et al., all family members who lived in the household or were significantly involved in child rearing were asked to participate in the therapy, although detailed information on therapy participants was not provided. Duration of BSFT treatment in Santisteban et al. was 4–20 weekly, 1-hr sessions of therapy; the mean number of sessions was 11.2 (*SD* 3.8).

Valdez and Cepeda (2008) allocated participants to manual-based BSFT adapted to the specific needs of the included population (gang-affiliated Mexican American youths), with education on sexually transmitted disease/HIV reduction and gang enhancement added to the intervention. Detailed information on therapy participants was not provided, although it seems likely that only one parent or family caregiver participated in the treatment and that siblings or other family members were not included. Data on the mean number of sessions were not

Table 1. Participant Characteristics.

	Robbins et al. (2011)	Santisteban et al. (2003)	Valdez and Cepeda (2008)
Age range (Mean)	13–17 (15.5)	12–18 (15.6)	12–17 (15)
Gender, males	78%	75%	59%
Family composition, single-parent households	47%	—	58%
Family composition, two-parent households	—	70%	—
Ethnicity, White	31%	—	—
Ethnicity, Hispanic	44%	100%	100%
Ethnicity, Black	23%	—	—
Ethnicity, Other	2%	—	—
Main drug used	Cannabis	Cannabis	Cannabis

available, although therapy duration was reported as 8–16 weekly sessions.

Control conditions for included studies. The control condition in Robbins et al. (2011) is TAU, which was the standard agency service provided at the included facilities. TAU in Community Treatment Programs included individual and/or group therapy, parent training groups, nonmanual family therapy, and case management. Participation in generally available agency-based ancillary sessions (such as case management or AA) was typical. Booster sessions were a common aspect of clinical practice. To allow both BSFT and TAU to be approximately parallel in sessions allowed, both conditions permitted booster sessions. During the study, 6% (i.e., 32 in total, distributed as 17 in BSFT; 15 in TAU) of young people/families received a booster session. The study was designed to ensure that participants in TAU received at least as many sessions as participants in BSFT. All agencies were expected to provide at least 12–16 scheduled sessions over 3–4 months. However, treatment lasted much longer than expected. The median month of last treatment session for those participants who retained in treatment was the eighth month.

In Santisteban et al. (2003), the control condition is group treatment, which was a participatory learning group for young people only. The participatory learning groups consisted of four to eight young people. The sessions were led by a facilitator and the young people were encouraged to discuss and solve problems among themselves. The number of sessions received by any given group participant ranged between 6 and 16 weekly sessions ($M = 8.8$, $SD = 2.6$).

The control condition in Valdez and Cepeda (2008) is described as minimum contact, although some participants received 12-step intervention. The condition is not described further in the article, and the small amount of information provided raises concerns as to whether the control condition is a no treatment or an alternative treatment. We have chosen to categorize the intervention as an alternative intervention due to the fact that at least a proportion of the young people in the control group received 12-step intervention. Information regarding the control condition has been requested from the study author; unfortunately, we have yet to receive a response.

Time points for measurements. Robbins et al. (2011) provided assessments at baseline and at 4, 8, and 12 months post

randomization. The median length of treatment in BSFT and the control condition was 8 months, and 15% of youths were still enrolled in treatment at 12 months postrandomization. Santisteban et al. (2003) reported measurements at baseline and at end of treatment. Valdez and Cepeda (2008) provided measurements at baseline and end of treatment. Valdez and Cepeda and Santisteban et al. (2003) did not report any details of the timing of the end-of-treatment measurements. Furthermore, Valdez and Cepeda planned a follow-up measurement at 6 months but did not report the results from this measurement (Table 2).

Primary outcome

Youth drug use. Abstinence or reduction of drug use was measured by drug use frequency. Robbins et al. (2011) administered the TLFB which measures self-reported drug use, and a decrease in the number of days using drugs indicates a reduction in drug use. Robbins et al. also administered urine drug screens immediately prior to all monthly TLFB assessments using SureStep Drug Screen Card 10A and urine cups and administered the Diagnostic Interview Schedule for Children to diagnose drug abuse or dependence.

Santisteban et al. (2003) used an interview-based measure of drug use, the Addiction Severity Index (ASI), to assess use of alcohol and marijuana and concurrent psychopathology. In ASI, items measure the number of days using a variety of drugs during the month prior to assessment. A decrease in the number of days using drugs again indicates a reduction in drug use. Santisteban et al. additionally used urine drug screens to substantiate self-reported marijuana use.

Valdez and Cepeda (2008) used the SAMSHA Center for Substance Abuse Treatment Government Performance and Results Act (CSAT GPRA) measure to assess change in drug use, based on interviews revealing days of drug use during the 30 days prior to assessment. The CSAT GPRA incorporates self-reported items that have been selected from widely used data collection instruments (e.g., the Addiction Severity Index). Outcome measures include substance use, criminal activity, mental and physical health, family and living conditions, education/employment status, and social connectedness.

Secondary outcomes

Family functioning. Family functioning was measured using the cohesion and conflict scales from the Family Environment

Table 2. Duration of Treatment (BSFT and Control Conditions) and Time Points for Measurement.

	BSFT Duration (Months)	Control Condition Duration (Months)	Time Points for Measurement (Months Postbaseline)
Robbins et al. (2011) and Horigian, Robbins, Dominguez, Ucha, and Rosa (2010)	Average 8 (planned 4)	Average 8 (planned 3–4)	4, 8, and 12
Santisteban et al. (2003)	2–6	2–4	Treatment termination
Valdez and Cepeda (2008)	2–4	NR	Treatment exit

Note. BSFT = Brief strategic family therapy; NR = not reported.

Scale (FES) in Robbins et al. (2011) and Santisteban et al. (2003). The cohesion scale measured the extent to which the parent or youth viewed the family as harmonious and close. Increased ratings on the cohesion scale indicate better family functioning. The conflict scale measured the extent to which the youth or parent viewed the family as characterized by frequent quarrels and disagreements. An increased rating on the conflict scale indicates poorer family functioning. Additionally, Robbins et al. used the Parenting Practices Questionnaire (PPQ) to measure parenting practices. PPQ is an inventory of four factors, indicating (1) positive parenting, for example, rewards and encouraging appropriate behavior, (2) discipline effectiveness, (3) avoidance of discipline, and (4) monitoring. In PPQ, higher scores indicate better parenting.

Santisteban et al. (2003) used Structural Family Systems Rating (SFSR) to measure the family's organizational system and flow of communication; the family's closeness, distance, and boundaries between family members; the age appropriateness of family members' behavior; the extent to which a single family member, usually the youth, is labeled as the family's "problem"; and the degree to which the family is able to communicate, discuss, and resolve differences of opinion. In SFSR, higher scores indicate better family functioning.

Valdez and Cepeda (2008) used the Family Adaptability and Cohesion Evaluation Scale (FACES) to measure family functioning. FACES contain three scales: cohesion, adaptability, and social desirability.

Education or vocational involvement. No study reported these outcomes.

Treatment retention. Treatment retention was reported as failure to remain in treatment in Robbins et al. (2011) and as drop-out rates in Santisteban et al. (2003). Valdez and Cepeda (2008) did not report the rate of treatment retention.

Risk Behavior. Robbins et al. (2011) did not report risk behavior, although this was reported by Horigian et al. (2010) as measured by a series of undesirable events, including arrests, absconding, being thrown out of the home, school suspension, and violence. A greater number of events indicates a poorer outcome.

Santisteban et al. (2003) reported the Socialized Aggression subscale from the Revised Behavior Problem Checklist (RBPC), assessing the degree to which parents report youth delinquency in the company of peers. An increased score on the Socialized Aggression scale of RBPC indicates more delinquent activity.

Other adverse effects. Horigian et al. (2010) reported suicidal behavior, homicidal behavior, hospitalization for psychiatric or drug-related reasons, and death as serious adverse effects.

General description of included studies. Overall, the included studies vary on a number of core items. The participants were all young people, mainly suffering from a number of behavioral problems in addition to their drug use. There is a contrast between participants in Robbins et al. (2011), where youth with pending criminal offences were excluded, and in Valdez and Cepeda (2008), where all participants were gang affiliated.

Interventions given to participants were all variations of BSFT. Robbins et al. (2011) adapted BSFT by giving booster sessions to some families. Santisteban et al. (2003) had given some participants engagement enhancement treatment in an earlier stage of the study. Valdez and Cepeda (2008) adapted BSFT to gang-affiliated youth and gave extra education within sessions or as added sessions.

In each case, the control condition was a less structured intervention than the BSFT model implemented in the experimental condition, and for Valdez and Cepeda, the control condition was minimum contact.

Time points for measurements varied across studies. Robbins et al. (2011) does not define the end of treatment and reported measurements at 4, 8, and 12 months postrandomization. Santisteban et al. (2003) reported at the end of treatment without specification of the timing and with no follow-up. Valdez and Cepeda (2008) provided baseline and end-of-treatment measures without specification of the timing. A planned 6 months follow-up was not reported. For further details on included studies, see Lindstrøm et al. (2013).

Studies awaiting classification. Jungkuntz (2007) is a dissertation which proposes an approach to the treatment of comorbid youths and which incorporates three strategies for engaging this population (BSFT, multiple family group therapy, and cognitive behavioral/motivational enhancement therapy) combined into one multimodal program. We are still awaiting access to this dissertation.

Risk of Bias in Included Studies

Our judgments on risk of bias varied between the three studies. Robbins et al. (2011) is a robust RCT judged as low risk of bias on all assessed items. Santisteban et al. (2003) is an RCT with

Table 3. Risk of Bias Across Included Studies.

	Robbins et al. (2011)	Santisteban et al. (2003)	Valdez and Cepeda (2008)
Sequence generation	Low	Unclear	Unclear
Allocation concealment	Low	Unclear	Unclear
Blinding	1	2	Unclear
Incomplete outcome data	1	1	Unclear
Free of selective reporting	1	1	4
Free of other bias	1	Unclear	1
A priori protocol	Yes	Unclear	Unclear
A priori analysis plan	Yes	Unclear	Unclear
Confounding	NA	NA	NA

Note. NA = Not applicable.

some uncertainty regarding core risk of bias items (e.g., method of randomization and allocation concealment). Valdez and Cepeda (2008) is an RCT with many uncertainties regarding the core risk of bias items (e.g., sequence generation, allocation concealment, and blinding) and some obvious deficiencies (e.g., selective reporting; Table 3).

Study authors have been contacted for details on any uncertainties in relation to risk of bias assessment items. Unfortunately, we have not received any response from investigators.

The ratings of each study in relation to the nine domains in the risk of bias tool are as follows:

Sequence generation. All studies were described by investigators as randomized, and two of the three studies reported that they were randomized on a family level (Robbins et al., 2011; Santisteban et al., 2003). Robbins et al. (2011) reported the procedure for randomization and was judged as having a low risk of bias for sequence generation. Santisteban et al. (2003) and Valdez and Cepeda (2008) did not report the randomization procedure and were therefore judged as having an unclear risk of bias for sequence generation.

Allocation concealment. Only Robbins et al. (2011) reported procedure for allocation concealment and was judged as having a low risk of allocation concealment bias. Santisteban et al. (2003) and Valdez and Cepeda (2008) did not report how allocation was handled, and both were therefore judged as having unclear risks of allocation concealment bias.

Confounders. This item is only relevant for nonrandomized studies and consequently was not judged.

Blinding. As is common in social intervention, especially when outcomes are self-reported, there is inherent bias, given the impossibility of blinding participants or those delivering the interventions. We rated Robbins et al. (2011) with a bias of 1 on the 5-point scale, as this study reported blinding procedures. The TLFB was administered by research assistants who were blind to the treatment condition. Research assistants were requested to indicate whether the blind was broken at each of the 12 follow-up assessments. Only in 1.2% of participants did research assistants note that

the blind was broken (Robbins et al., 2011). Santisteban et al. (2003) was rated 2 on the 5-point scale, as this study reported that data were collected in a standardized manner by trained associates. Valdez and Cepeda (2008) was rated unclear for blinding due to a lack of reporting of data collection and blinding procedures.

Incomplete outcome data. Drop-out rates were reported in Robbins et al. (2011) and Santisteban et al. (2003), and both studies performed analysis for any imbalance in attrition. Robbins et al. and Santisteban et al. (2003) were rated 1 for attrition bias. Valdez and Cepeda (2008) did not report treatment retention or analysis of attrition imbalance and is rated unclear for attrition bias.

Selective reporting. The original trial protocol was available for Robbins et al. (2011), and data for all planned outcomes have either been reported or are under publication and the study was rated 1 for selective reporting bias. Data for all reasonable outcomes have been reported in Santisteban et al. (2003), and the study was rated 1 for selective reporting bias. Valdez and Cepeda (2008) failed to report a planned 6-month follow-up assessment and was therefore rated 4 for selective reporting bias.

Other potential sources of bias. As previously noted, Santisteban et al. (2003) reported on the second phase of a two-phased study with a possible risk of carryover effect from the pretreatment activity conducted in the first phase, where participants received an engagement intervention. Therefore, Santisteban et al. (2003) was rated unclear for other potential sources of bias.

A priori protocol. Explicitly stating a priori hypotheses and methods without prior knowledge of results minimizes bias. Only Robbins et al. (2011) stated that an a priori protocol had been complied with. Santisteban et al. (2003) and Valdez and Cepeda (2008) did not report whether an a priori protocol was produced and if so, whether it was followed.

A priori analysis plan. Only Robbins et al. (2011) stated it had complied with an a priori analysis. Santisteban et al. (2003) and Valdez and Cepeda (2008) did not report whether an a priori analysis plan was produced and, if so, whether it was followed.

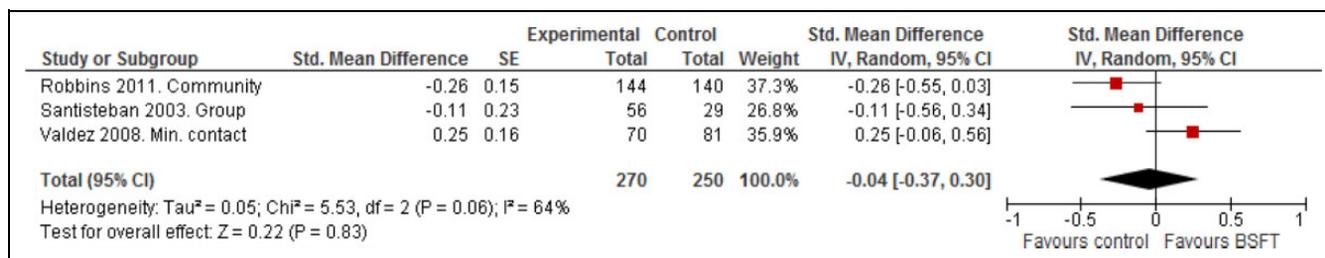


Figure 1. Drug use frequency, forest plot.

Effects of the Interventions

In the protocol for this review, the following comparisons/analysis were planned:

Absolute effects, comparing BSFT to no treatment and untreated waitlist controls;

Relative effects, comparing BSFT to other interventions and/or TAU.

The experimental interventions given to participants are all manual-based BSFT. However, Robbins et al. (2011) adapted BSFT by providing booster sessions for some participants, while Valdez and Cepeda (2008) adapted BSFT to gang-affiliated Mexican American youths by including a gang dimension component and educational enhancement with sessions on STD/HIV reduction. We are unable to comment on the absolute effects of BSFT since the available comparisons were all against other interventions.

Meta-analysis was not feasible for risk behavior outcomes due to differences in outcome measures. Education and vocational involvement were not reported in any of the included studies and adverse effects were reported only in one study.

The outcomes were reported at varying time points. We grouped the outcomes at the end of treatment, estimating the eighth-month outcome measure time point in Robbins et al. (2011) to be equivalent to the end-of-treatment outcome measure time points in Santisteban et al. (2003) and Valdez and Cepeda (2008). The end-of-treatment measure in Robbins et al. was originally planned to be at 4 months postrandomization. However, treatment duration in Robbins et al. was prolonged and the median month for end of treatment for those who remained in treatment was the eighth month.

Primary outcome results. Drug use reduction is measured by drug use frequency. The three studies provided data that enabled calculation of effect estimates on drug use frequency at the end of treatment. Robbins et al. (2011) reported no significant effect of BSFT on drug use frequency. Santisteban et al. (2003) and Valdez and Cepeda (2008) reported results that indicate a positive effect of BSFT on drug use frequency. Robbins reported the TLFB data on drug use frequency as medians at the 25th and 75th percentiles which could not be transformed to allow generation of an SMD and used in the meta-analysis. However, Robbins did report percentage of

positive urine drug screens, which has been transformed as described in the Measures of Treatment Effect subsection.

The meta-analysis was performed based on drug use frequency measured as positive urine drug screens from Robbins et al. (2011), ASI from Santisteban et al. (2003), and CSAT GPRA from Valdez and Cepeda (2008). Pooled results do not reveal a statistically significant effect of BSFT on drug use frequency. The pooled estimate SMD is -0.04 (95% CI $[-0.37, 0.30]$), with statistically significant heterogeneity between studies ($p = .06$); Figure 1. In conclusion, the meta-analysis shows no statistically significant effect of BSFT for drug use frequency compared to community treatment programs, group treatment, and minimum contact comparison.

Secondary Outcomes

Family functioning. Three studies provided data on family functioning as reported by parents, and two studies report family functioning as reported by the young drug users. Robbins et al. (2011) and Santisteban et al. (2003) reported improved family functioning, indicating a positive effect of BSFT on family functioning. No significant effect on family functioning was found in Valdez and Cepeda (2008). Meta-analysis of parent-reported family functioning is performed on the composite family functioning outcome in Robbins et al., the FES cohesion scale in Santisteban et al., and the FACES in Valdez and Cepeda. Pooled results show no statistically significant effects of BSFT on family functioning reported by parents, SMD = 0.06 (95% CI $[-0.13, 0.25]$), with no statistically significant heterogeneity between studies ($p = .29$); Figure 2.

Meta-analysis of youth reported family functioning is performed on the composite family functioning outcome in Robbins et al. (2011) and the FES cohesion scale in Santisteban et al. (2003). Pooled results show no statistically significant effects of BSFT on family functioning reported by youth SMD = 0.16 (95% CI $[-0.19, 0.51]$), with no statistically significant heterogeneity between studies ($p = .15$); Figure 3.

In conclusion, the meta-analysis shows no statistically significant effect of BSFT on family functioning reported by parents or youth compared to community treatment programs, group treatment, and minimum contact comparison.

Education or vocational involvement. No study reported this outcome.

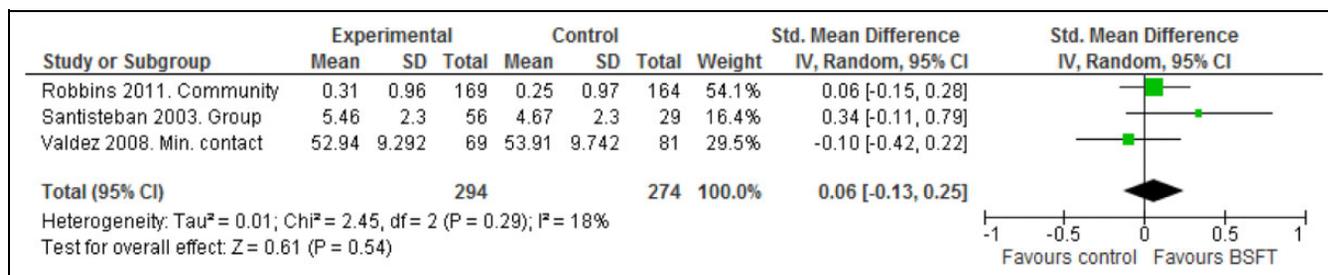


Figure 2. Family functioning, parent report, forest plot.

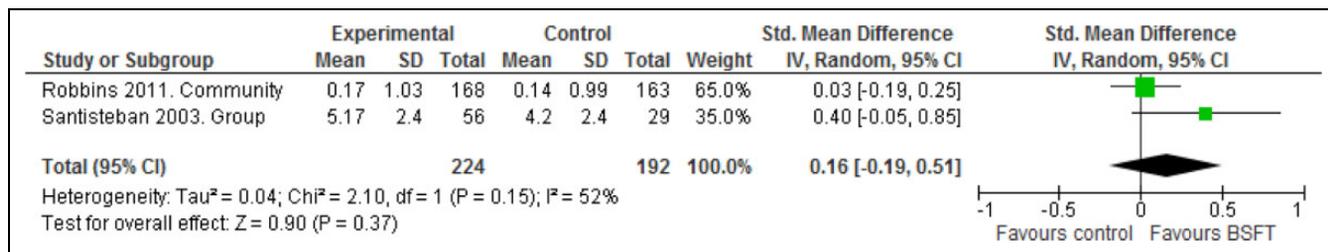


Figure 3. Family functioning, youth report, forest plot.

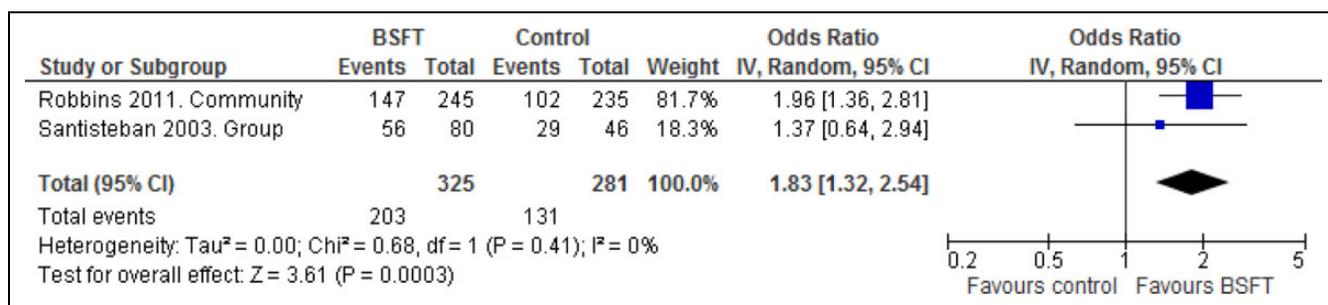


Figure 4. Treatment retention, forest plot.

Treatment retention. Robbins et al. (2011) and Santisteban et al. (2003) reported data that enabled calculation of effect estimates on treatment retention. Robbins et al. reported lower levels of failure to remain in BSFT. Santisteban et al. did not reveal any significant difference between conditions. Pooled results show a statistically significant effect of BSFT for treatment retention, OR = 1.83 (95% CI [1.32, 2.54]), with no statistically significant heterogeneity between studies ($p = .41$); Figure 4. In summary, the meta-analysis shows a statistically significant effect of BSFT for treatment retention compared to community treatment programs, group treatment, and minimum contact comparison.

Risk behavior. Meta-analysis was not feasible for risk behavior due to differences in outcome measures collected in the individual studies. Horigian et al. (2010) did not report significant effects on risk behavior. Santisteban et al. (2003) used the socialized aggression scale of RBPC and reported that youth in BSFT intervention showed greater reduction in peer-based delinquency. The random effects SMD at end of treatment was -0.27 (95% CI $[-0.72, 0.18]$).

Other adverse effects. Only Horigian et al. (2010) reported adverse effects, noting that more than 50% of the youths in the study experienced risk behavior or other adverse events during the trial. The most common adverse event experienced by the youths was arrest, followed by suspension/dropout from school and absconding from home. However, the distribution of events in BSFT and control conditions does not indicate clear differences between BSFT and control environments.

Discussion

Summary of the Main Results

Our main objective was to evaluate the current evidence on the effect of BSFT on drug use reduction for young people in treatment for nonopioid drug use. To summarize, we found the following results:

Abstinence or reduction of drug use. Meta-analysis of data from the three included studies (Robbins et al., 2011; Santisteban et al., 2003; Valdez & Cepeda, 2008) does

not show a statistically significant relative effect of BSFT for reduction of youth drug use frequency at the end of treatment. The available data do not therefore support the hypothesis that there is a drug use reduction effect from using BSFT with young drug users compared to community treatment programs, group treatment, and minimum contact comparison (control conditions in the included studies include individual and group therapy, parent training groups, nonmanualized family therapy, case management, participatory learning group intervention, minimum contact group, and 12-step program).

Family functioning. Meta-analysis of the three included studies (Robbins et al., 2011; Santisteban et al., 2003; Valdez & Cepeda, 2008) does not show a statistically significant effect for BSFT on family functioning reported by parents at the end of treatment compared to community treatment programs, group treatment, and minimum contact comparison. Meta-analysis of the effects of BSFT on family functioning reported by youths at the end of treatment in two studies (Robbins et al., 2011; Santisteban et al., 2003) did not show any statistically significant effect for BSFT compared to community treatment programs, group treatment, and minimum contact comparison.

Treatment retention. Two studies (Robbins et al., 2011; Santisteban et al., 2003) reported on treatment retention. Here, meta-analysis favors BSFT for treatment retention of participants. The comparisons for the two studies were TAU, which was the standard agency service provided at the included facilities (Robbins et al., 2011), and group treatment, which was a participatory learning group for young people only (Santisteban et al., 2003). Treatment retention may be positively affected by structured BSFT treatment compared to community treatment programs, group treatment, and minimum contact comparison (control conditions in the included studies include individual and group therapy, parent training groups, nonmanualized family therapy, case management, participatory learning group intervention, minimum contact group, and 12-step program). These results should be interpreted with great caution due to the very limited number of studies.

Opportunities for meta-analysis were limited for risk behavior due to differences in outcome measures in the included studies. Horigian et al. (2010) did not report significant effects on risk behavior. Santisteban et al. (2003) used the socialized aggression scale of RBPC and reported that youth in BSFT intervention showed greater reduction in peer-based delinquency. The random effects SMD at end of treatment was -0.27 (95% CI $[-0.72, 0.18]$).

Only Horigian et al. (2010) reported on adverse effects, noting that more than 50% of the youths included in the study experienced risk behavior or other adverse events during the trial. The most common adverse event was arrest, followed by suspension from/dropping out of school and absconding

from home. However, the distribution of events in BSFT and control conditions does not indicate clear differences between BSFT and control environments.

No studies reported on education or vocational involvement. In addition, it was not possible to assess the second review objective concerned with moderators of drug use reduction effects and whether BSFT works better for particular types of participants.

We found that the methodological rigor and the adequacy of reporting in the included studies were generally insufficient to allow confident assessment of the effects of BSFT for young drug users. Two of the three included studies did not provide adequate information on core issues to allow us to assess the risk of bias (e.g., methods of sequence generation, allocation concealment, and completeness of outcome data). This methodological weakness makes us question the validity of the two studies.

In short, the primary result of this review is that there is currently insufficient good quality evidence for conclusions to be drawn. The small number of available studies and design deficiencies for two of the most relevant studies preclude any conclusions concerning effectiveness and ineffectiveness or potential damage of BSFT for young people in treatment for nonopioid drug use.

Overall Completeness and Applicability of Evidence

We found very few trials that examined whether BSFT reduced youth drug use, and the included studies implemented different adaptations of BSFT on different populations. All studies were performed in the United States, and all lacked postintervention follow-up which would have allowed for documentation of accumulated or longer term effects. There is therefore the possibility that follow-up time was not long enough to detect significant changes.

Quality of the Evidence

The review found that the methodological rigor and the adequacy of reporting in the included studies were generally insufficient to allow confident assessment of the effects of BSFT for young drug users. Two of the three included studies did not provide adequate information on core issues to allow us to assess the risk of bias (e.g., methods of sequence generation, allocation concealment, and completeness of outcome data), despite genuine efforts to contact authors. This methodological weakness makes us question the validity of the two studies.

Potential biases/limitations in the Review Process

The narrow search strategy performed in this review may limit the likelihood of identifying all relevant studies. However, we attempted to minimize the risk of missing relevant studies by conducting an extensive search for gray literature, by extensive hand searching, and by contacting international experts within the field of BSFT. Indeed, the large number of gray literature

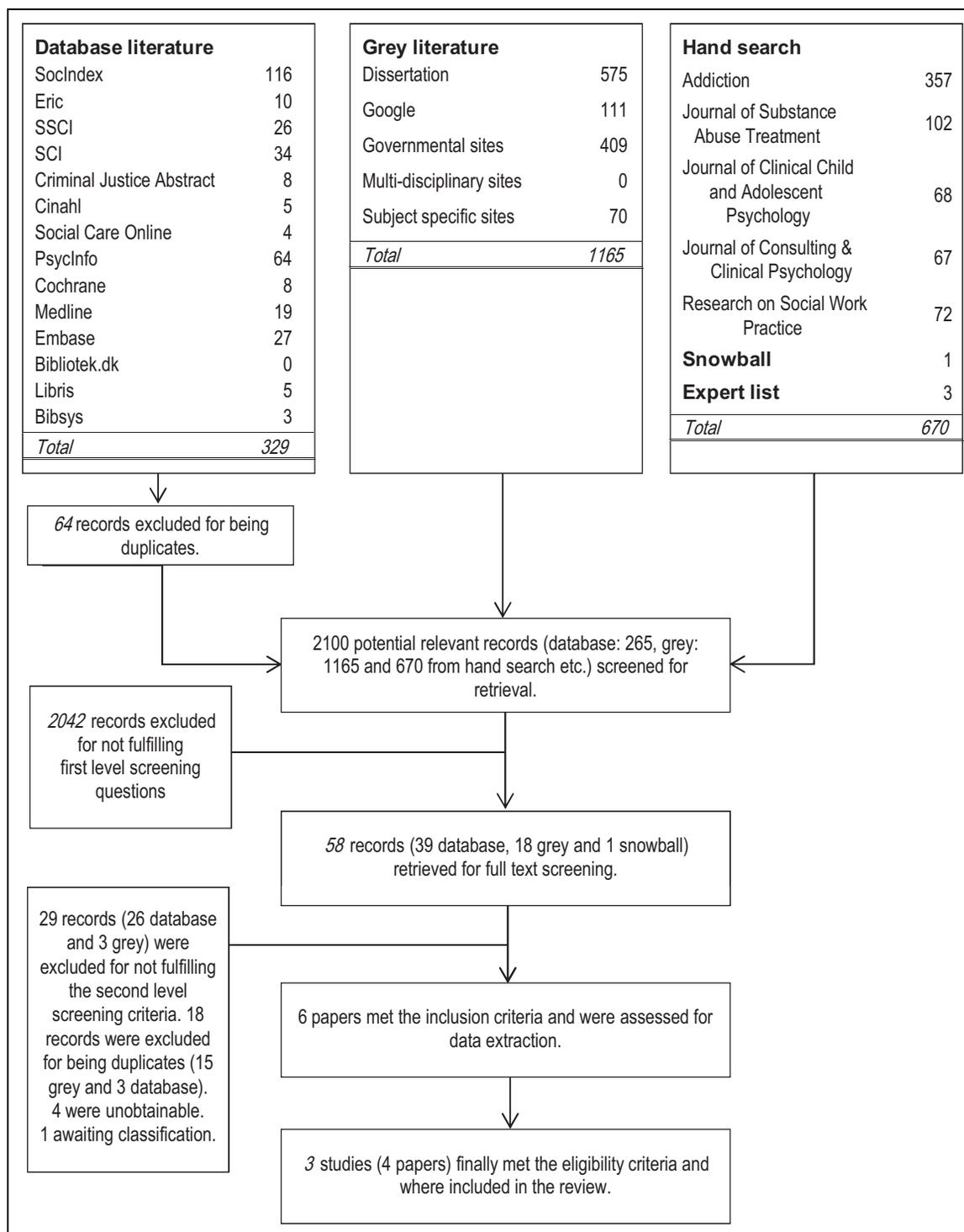


Figure 5. Flowchart for literature search.

and hand searched literature that has been assessed for relevance attest to this effort.

Agreements and Disagreements with Other Reviews

The identified narrative reviews (Austin et al., 2005; Briones, Robbins, & Szapocznik, 2008; Cannon & Levy, 2008; Santisteban, Suarez, Robbins, & Szapocznik, 2006; Szapocznik &

Williams, 2000; Szapocznik, Lopez, Prado, Schwartz, & Pantin, 2006; Thompson, Pomeroy, & Gober, 2005) report a general pattern of positive effect of BSFT treatment for drug-using youth. Consistent with our findings, the narrative reviews also report that more research is desired.

Of the two identified quantitative reviews (Vaughn & Howard, 2004; Waldron & Turner, 2008), Vaughn and Howard (2004) include data on BSFT from Santisteban et al. (2003) in a

meta-analysis of various program modalities, and as a result classify BSFT under the category: “Evidence of indeterminate effect, mixed or incomplete findings.” Waldron and Turner (2008) include data on BSFT from Santisteban et al. in a meta-analysis of various program modalities, and as a result classify BSFT among other family therapy models as “probably efficacious.” These findings are not consistent with the findings of the current review for two main reasons: (1) the current review uses the final values in Santisteban et al. in the meta-analysis, as final values provide the best comparability across studies, whereas Santisteban et al. and the reviewers above use change scores; and (2) The current review includes two additional studies on BSFT in the meta-analysis. Consistent with our expectations, the apparent statement from the two reviews is that more research is needed, not least with regard to moderators and identification of which particular subgroups of young people may be more likely to respond to specific interventions and how treatments can be adapted or tailored to the individual needs of youth to improve drug use outcomes. These issues are similar to those we planned to assess in our review. However, the lack of empirical evidence has prevented the possibility of assessing moderators of effect and effects on subgroups.

Authors' Conclusion

Although reliable conclusions about the effectiveness of BSFT are lacking, some observations are worth mentioning.

Implications for Practice

The current landscape of family therapy approaches for treatment of youth drug use shows that many initiatives have been tried. A certain inconsistency seems to be developing: While existing BSFT programs have not yet been evaluated properly, new BSFT interventions continue to surface. This is not only costly, it is also risky, as initiatives backed only by unclear research could ultimately be damaging. It is therefore crucial to know more about the effectiveness of treatments to understand where money should be spent and to understand exactly what kind of support young drug users can benefit from.

Implications for Research

First, it is important to address the need for more research in the field. A small body of evidence exists in relation to the treatment of young drug users, with only a very modest number of controlled evaluations of treatments for this group. Most of the few available studies of effectiveness have methodological problems, such as small sample sizes and varied methods of assessing drug use; such problems make definitive conclusions difficult, if not impossible. Well-designed, randomized controlled trials within this population are needed and should be reported clearly in accordance with the principles of the CONSORT 2010 statement. Second, it is also important to consider the possibility of adverse effects of these interventions.

The popular belief is that BSFT, as well as other family therapy approaches, is harmless, but there has actually been very little research made that focuses on the potential harms of such family therapy approaches.

The review authors take full responsibility for the content of this publication.

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Authors' Note

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