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Developing and Implementing a Positive Behavioral Reinforcement Intervention in Prison-Based Drug Treatment: Project BRITE

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Abstract

Within prison settings, the reliance on punishment for controlling inappropriate or non-compliant behavior is self-evident. What is not so evident is the similarity between this reliance on punishment and the use of positive reinforcements to increase desired behaviors. However, seldom do inmates receive positive reinforcement for engaging in prosocial behaviors or, for inmates receiving drug treatment, behaviors that are consistent with or support their recovery. This study provides an overview of the development and implementation of a positive behavioral reinforcement intervention in male and female prison-based drug treatment programs. The active involvement of institutional staff, treatment staff, and inmates enrolled in the treatment programs in the development of the intervention along with the successful branding of the intervention were effective at promoting support and participation. However, these factors may also have ultimately impacted the ability of the randomized design to reliably demonstrate the effectiveness of the intervention.

Keywords

contingency management; positive behavioral reinforcement; prisons; prisoners; substance abuse treatment

As is the case with substance abuse treatment with criminal justice populations in general, participation in prison-based drug treatment programs often involves some level of coercion or, in some cases, is mandated. (The distinction is that coerced treatment allows for some degree of choice on the part of the inmate, whereas mandated treatment does not.) In addition, most in-prison drug treatment programs dispense disciplinary actions against inmates who violate program rules, but place little emphasis on rewarding specific acts of positive behavior. This appears to be primarily an artifact of the organizational reality that finds prison-based drug treatment programs operating within larger bureaucratic correctional systems. Correctional systems possess and promote a fundamentally different philosophy

and set of policies regarding management of behavior and tend to enforce compliance with institutional rules and codes of behavioral conduct through the contingent delivery of punishment to individuals who engage in specified behaviors that violate such rules and codes of conduct (Burdon et al. 2002). As a result, staff in prison-based drug treatment programs are often confronted with clients who have low levels of motivation for treatment and who remain unengaged in the treatment program (Burdon et al. 2002).

When it does occur, positive reinforcement within prison-based drug treatment programs often takes the form of verbal praise from a counselor or a peer (e.g., “push-ups” in the therapeutic community [TC] model of treatment; De Leon 2000). More tangible positive reinforcement may take the form of moving a client to the next phase of the treatment program or conferring additional privileges on him/her. However, these types of reinforcement “tend to be intermittent and, in contrast to sanctions, less specific, not immediately experienced, and based on a subjective evaluation of a client’s progress in treatment” (Burdon et al. 2001: 78). As such, these informal reward systems do not follow established procedures for positive behavioral reinforcement and are thus not likely to have an effect on clients’ behavior.

Project BRITE (Behavioral Reinforcement to Increase Treatment Engagement) was a four-year study that tested the impact of a positive behavioral reinforcement intervention on male and female inmates’ engagement in 12-week intensive outpatient (IOP) prison-based drug treatment programs. Inmates enrolled in these IOP programs received systematic positive behavioral reinforcement contingent upon them attending and participating in regularly scheduled group sessions and completing treatment-related tasks, participating in structured and supervised programs and activities within the institution but separate from the treatment program, and engaging in behaviors that were consistent with and promoted recovery and a healthy prosocial lifestyle. By applying positive reinforcement in a manner that was both timely and systematic, Project BRITE sought to increase inmate engagement in the treatment programs, thereby improving psychosocial functioning over the course of treatment (short-term outcomes) and post-release outcomes (distal outcomes, e.g., increased participation in aftercare, decreased drug use, decreased re-arrests and returns to prison).

The purpose of this article is to describe the development and implementation of the Project BRITE intervention, which was the focus of a randomized clinical trial, as well as the theoretical foundations underlying the intervention and the Project BRITE subject population. It will also provide a foundation reference for future studies that will report on the results of statistical analyses testing hypotheses associated with the primary aim of the study and other areas of inquiry undertaken.

THEORETICAL FOUNDATIONS

Project BRITE employed key aspects of contingency management (CM), a behaviorally based protocol that involves the systematic application of positive reinforcement following demonstration of a desired behavior. Specifically, the delivery of a positively reinforcing “event” contingent upon the performance of a specific behavior results in the increased frequency of the behavior (Stitzer & Petry 2006; Bigelow & Silverman 1999).

The use of reinforcement for increasing desired behaviors, also known as operant conditioning, has a long tradition of application in the behavioral literature (Bandura 1969; Ullman & Krasner 1965), and contingency management techniques have been widely used within the context of treating drug-dependent individuals to provide reinforcement “that can effectively compete with drug reinforcement to promote drug abstinence and alternative nondrug-related behaviors” (Stitzer & Petry 2006: 412). CM approaches have solid empirical support in the experimental literature for promoting behavior change in substance

users. Meta-analyses and systematic reviews of the experimental literature have consistently concluded that CM techniques are effective at sustaining drug abstinence (Dutra et al. 2008; Lussier et al. 2006; Prendergast et al. 2006; Stitzer & Petry 2006; Higgins, Heil & Lussier 2004; Griffith et al. 2000), with meta-analyses consistently finding large treatment effects (Lussier et al. 2006; Prendergast et al. 2006; Griffith et al. 2000).

Despite its success in reducing illicit drug use among clients in clinically or community-based drug treatment programs, positive behavioral reinforcement has been little used with substance-abusing incarcerated populations. However, more recent studies that have tested CM techniques with nonincarcerated drug-involved offender populations have not shown it to be particularly effective (Hall et al. 2009; Marlowe et al. 2008; Prendergast et al. 2008). These studies were conducted within the context of drug court or treatment-in-lieu-of-incarceration settings, so it is possible that the results may have been impacted by ceiling effects resulting from the influence of the drug court judges, standard drug court reinforcements, and standard forms of positive and negative reinforcement inherent in the criminal justice settings within which the study subjects were receiving treatment (Hall et al. 2009; Marlowe et al. 2008; Prendergast et al. 2008).

Within a prison setting, no such ceiling effects exist and, as previously stated, prison-based drug treatment programs are often characterized by low levels of motivation and engagement on the part of the inmates enrolled in them. As such, an appropriate role for positive behavioral reinforcement within the context of prison-based treatment would be to facilitate change in clients' cognitive processes (the goal of most treatment programs) by promoting clients' involvement in a full range of program activities and behaviors that promote or are designed to effect this change. This was the primary objective of Project BRITE—to attenuate resistance to and resentment of the treatment milieu and increase client engagement in treatment, thereby facilitating the improvement of psychosocial functioning over the course of treatment and, ultimately, posttreatment and post-release outcomes as measured by increased participation and retention in community aftercare, decreased drug use, and decreased criminal behavior (i.e., re-arrests and returns to custody; see Figure 1).

The development and implementation of Project BRITE was based on the conceptual logic model of community-based participatory research (CBPR; see Wallerstein & Duran 2003). CBPR has its roots in Kurt Lewin's "action research," which was developed as a means of blending research and social action to produce social change (Holkup et al. 2004). CBPR has been described as a post-positivist approach to conducting research that departs from the tradition of researchers maintaining arms-length objective relationships with study participants and instead actively involves community members (often active or potential study participants) in the research process (Shalowitz et al. 2009; Wallerstein & Duran 2003). By doing so, CBPR addresses many of the challenges confronted by researchers in effectively implementing evidenced-based practices in diverse and unique real-world settings by moving away from the typical researcher-centered power and control of the research process. Specifically, actively involving community stakeholders in the research process facilitates adaptation of the evidenced-based practice (EBP) to the targeted environment through the recognition and assimilation of organizational and cultural norms, values, practices, and beliefs. This occurs via a bidirectional learning and collective decision-making process, which further promotes trust and collaboration between researchers and communities and increases the chances of implementation success and sustainability (Wallerstein & Duran 2003).

Prisons represent a highly unique environment for attempting to implement an EBP such as Project BRITE. As stated above, correctional systems and treatment programs possess fundamentally different philosophies and follow different approaches regarding the

treatment of drug-dependent individuals. Along with this, the inmate subculture of most prison environments poses additional challenges and obstacles to researchers seeking to effectively implement a positive behavioral reinforcement intervention that seeks, as part of a randomized empirical study, to provide rewards to certain inmates and not to others. As such, prison-based substance abuse treatment settings represent a unique and previously untested opportunity for using CBPR to implement an evidenced-based intervention.

DEVELOPMENT OF THE PROJECT BRITE INTERVENTION

The Project BRITE intervention was conducted at two 12-week intensive outpatient (IOP) substance abuse treatment programs located at a medium-security male prison and a minimum-security female prison. The male study site housed approximately 1,600 medium-security inmates. The IOP treatment program at this site had 48 treatment slots. The female study site housed approximately 175 minimum-security inmates. The IOP treatment program at this site had 24 treatment slots. The 12-week IOP treatment curriculum was standardized across both study sites and consisted of 72 hours of cognitive behavioral treatment delivered over a period of 12 weeks (three two-hour group sessions per week).

The objective of the development and implementation effort was to create an intervention that increased inmates' engagement in prison-based drug treatment by providing positive behavioral reinforcement to inmates for participating in treatment and exhibiting behaviors that were consistent with and supported their recovery. Increased engagement in treatment was expected to further facilitate positive change in clients' cognitive processes (i.e., psychosocial functioning—the goal of most treatment programs) and improve post-release outcomes (e.g., decreased drug use, reincarceration).

The development of Project BRITE followed a three-step process that started with a one-day educational seminar at each study site, followed by a series of planning work groups that included representatives from institutional administration and custody staff, treatment counselors, and inmates enrolled in the treatment programs. The product of these planning workgroups was then used to develop and test an automated record-keeping and data-collection system for the intervention that was designed to minimize staff workload and facilitate implementation and the ongoing operation of the intervention. Each of these steps is described in detail below.

Educational Seminars

Development of the Project BRITE intervention began with an educational seminar, which was conducted at both study sites. Participants in these educational seminars consisted of institutional management and custody staff, treatment staff, and three or four inmates selected by treatment staff from the treatment programs. The purpose of the Educational Seminars was to provide the participants with a foundational knowledge base in behavioral reinforcement theory and procedures that, when combined with their current knowledge of substance abuse treatment, prison environments, inmate behavior, and institutional rules and regulations, would enable them to offer informative feedback and suggestions on how to successfully develop and integrate the behavioral reinforcement intervention into a prison-based treatment environment. At both seminars, an expert in the field provided a detailed overview of behavioral reinforcement theory and contingency management research, which provided the foundation to participants for understanding the project.

The study principal investigator (PI) then provided an overview of the experimental intervention, which consisted only of the aims of the intervention and a broad outline of how it should be structured. More specifically, the seminar attendees were told that the primary objective of the intervention was to increase engagement in the treatment program by

providing positive behavioral reinforcement to inmates for participating in treatment and exhibiting behaviors that were consistent with and supported their recovery. Furthermore, it was stated that, for logistical reasons relating to the environment within which the intervention was being conducted (i.e., a prison), positive behavioral reinforcement would be provided in the form of Motivational Incentive (MI) points that inmates could save and subsequently redeem for tangible or intangible items. Also, the attendees were told that, because this was an experimental intervention, inmates who agreed to participate in the study would be randomly assigned to an experimental group or a control group. The experimental group would be referred to as the Behavioral Reinforcement (BR) group. This group would receive treatment and earn MI points in accordance with the procedures decided upon by the planning workgroups. The control group would be referred to as the Standard Treatment (ST) group. This group would receive treatment but not earn MI points. However, this group would receive (i.e., be given) MI points noncontingently based on the average number of points earned by participants in the BR group. This yoked control feature of the study design was deemed necessary to minimize resentment that inmates in the control group might have and exhibit over not being able to receive and redeem MI points for tangible or intangible items. Such resentment was deemed a very real possibility given where the intervention was being conducted and that it might undermine our ability to successfully conduct the experimental intervention. Finally, it was suggested that, as an alternative to redeeming points, inmates might also opt to donate their MI points to a community charity as a measure of altruistic behavior. Beyond these broad outlines, the details of how the intervention would be structured were decided upon in a series of four or five planning workgroups conducted at each study site.

Planning Workgroups

The planning workgroups were facilitated by the PI and a research assistant and included the same participants who attended the educational seminars. These planning workgroups were charged with determining details within five task areas of the intervention:

1. *Earning Motivational Incentive (MI) Points:* Decide what activities, tasks, and other behaviors would be reinforced, and how many MI points would be awarded for each targeted behavior.
2. *Verification and Documentation:* Decide how to verify and document the behavior so that MI points earned could be accurately computed and distributed to BR and ST participants.
3. *Redeeming MI Points:* Decide what types of tangible and intangible items study participants would be allowed to redeem their MI points for.
4. *Assigning Point Values:* Assign MI point values to targeted behaviors identified in task #1, and then assign point values to the tangible and intangible items identified in task #3.
5. *Defining the Community Charity:* Decide whether to pursue the idea of a “community charity” option and, if so, how it would be structured.

Participants in the planning workgroups were asked to adopt the mantra of: “Keep it simple. Keep it cheap.” However, consistent with key characteristics of the effective application of contingency management procedures (Petry 2000), participants were instructed that the product of the first four tasks should ensure that MI points earned by inmates were linked to a specific behavior, were delivered as soon as possible after the behavior was exhibited, and were of sufficient intrinsic value to the inmates participating in the study to make them effective.

Emphasis was placed on “easy” verification of task and activity completion. Objectivity was stressed, but where subjectivity was unavoidable, responsibility for making subjective judgments was generally given to one or a few individuals (e.g., the treatment counselors). Subjectivity in decision-making was further minimized through the development of simple but comprehensive written criteria. Finally, with their consent, responsibility and accountability was placed on inmate participants where possible. The consensus of the planning workgroups was that any procedure that resulted in an excessive increased workload on institutional staff and/or the counselors would likely result in the procedure not being followed consistently, and thus should be discouraged.

The scheduling of the workgroups between the two study sites was such that they alternated somewhat between the two locations. This allowed us to take decisions that were made by the planning workgroup at one study site and present them to the planning workgroup at the other study site for review and possible adoption. This dynamic worked very well and enabled us to get through the tasks on an accelerated schedule. The result was that both study sites produced similar outcomes/decisions, while maintaining some level of individuality that was necessitated by the fact that one site was a male study site and one site was a female study site.

Participation in all of the planning workgroups was excellent. Everyone provided relevant and valuable input, and there was no evidence or sense of a power differential in the workgroups—institutional and treatment staff worked side by side with the inmate representatives. The inmate representatives from both groups also volunteered to take on assignments in between scheduled group sessions; they sought feedback from other inmates in the treatment programs and developed proposed lists of activities and tasks to be targeted for reinforcement as well as lists of suggested tangible and intangible items for point redemption. These were presented to the workgroups for further review and discussion before final decisions were made. The product of the planning workgroups, as it related to the task areas they were charged with completing, is summarized below.

Earning Motivational Incentive Points

Offenders assigned to the BR groups earned Motivational Incentive (MI) points by attending and participating in regularly scheduled group sessions and completing treatment-related tasks (treatment points), by participating in structured and supervised programs and activities (programming & activity points), and by engaging in behaviors that were consistent with and promoted recovery and a healthy prosocial lifestyle (behavior points).

Treatment—MI points were earned for attending and participating in regularly scheduled group sessions (three two-hour sessions per week), completing a weekly self-evaluation of participation and progress in treatment, and completing weekly homework assignments. They were also earned for participating in other treatment-related activities with the treatment counselor (i.e., developing a treatment plan, etc.).

Programs & activities—MI points were earned for having no unexcused absences from job assignments, education classes, and vocational classes. They were also earned for voluntarily attending 12-Step meetings and/or religious services and for participating in organized sporting events or other activities approved and supervised by institutional staff.

Other Behaviors—MI points were earned for drug-free urine tests, doing “good deeds” for others, remaining free from disciplinary actions, and for achieving treatment plan goals.

Table 1 summarizes the specific activities and behaviors for which participants were able to earn MI points and the amount of MI points they were eligible to earn for each activity or behavior.

Verification and Documentation

Treatment counselors documented participation in treatment activities and completion of treatment-related tasks. Participation in programs and activities and engagement in behaviors that were consistent with and promoted personal recovery were documented on activity sheets that BR participants had stamped by designated custody staff throughout the institution. Multicolored “BRITE” stamps were distributed to designated custody and institutional staff, who were instructed on when and how to stamp the activity sheets. For example, custody officers at the prison industries building used a red BRITE stamp to confirm that a BR participant had no unexcused absences from job assignments, housing unit officers used a blue stamp to verify that participants were disciplinary-action free for the week, institutional staff in the chapel used green stamps to verify attendance at religious services, and 12-Step meeting facilitators used brown stamps to verify attendance at 12-Step meetings. The use of multicolored stamps prevented fraudulent stamping of the activity sheets and assured that verification of the designated activity or behavior was done by appropriate institutional staff.

Redeeming Motivational Incentive Points

Once received, MI points could be accumulated (saved) or redeemed for tangible items from the prison commissary or for increased privileges. They could also be donated to a Community Charity fund, which resulted in a cash donation on behalf of the inmate to an approved charitable organization.

Tangible items—Study participants could redeem MI points for most of the tangible items that were on the prison commissary list, with the exception of snack foods and soda. MI points could also be redeemed toward the purchase of any item from an approved vendor catalog or for other tangible items such as gift cards that could be sent to family members (e.g., spouses, children). MI points redeemed for tangible items had a value of \$0.10 per point.

Privileges—Study participants could redeem MI points for selected privileges. These privileges were approved by Department of Corrections headquarters and institutional management. MI points redeemed for privileges did not have a dollar value attached to them, but there was an opportunity cost in that every point redeemed for a privilege was a MI point (\$0.10) that could not be redeemed for a tangible item or donated to a community charity. Privileges were classified as low value (five to ten MI points; e.g., getting an extra sack lunch at meal time), medium value (20 to 30 MI points; e.g., getting an extra blanket for 30 days), high value (50 to 75 MI points; e.g., increased family visits), or very high value (over 100 MI points; e.g., cell movements (changing cells) within or between housing units. For some privileges (e.g., coffee and donuts at group sessions), study participants (regardless of study group) were allowed to pool their MI points and redeem them to obtain the privilege.

Charitable donations—Study participants could donate their MI points to a community charity. MI points donated to the Community Charity fund were converted to a cash donation that was made on behalf of the inmate to an approved charitable organization. Checks were issued periodically by the institutions and sent to the charitable organization(s), along with a letter explaining the source of the donation. MI points donated to the

Community Charity fund had a value of \$0.50 per point (i.e., five times the value of MI points that were redeemed for tangible items).

Inmates desiring to redeem MI points for tangible items or privileges or donate them to the Community Charity fund filled out a MI Point Redemption Form. These were turned in weekly to the counselor, who inputted the request into a Participant Tracking Database (PTDB; see below).

Participant Tracking Database

A Participant Tracking Database (PTDB) was developed using Microsoft Access software. The purpose of the PTDB was to simplify the process, and thus the workload, associated with monitoring and tracking MI points received, accumulated, and redeemed by study participants. This task fell largely on the treatment counselors. The intervention was designed in such a way as to minimize research staff involvement and mirror as closely as possible how the intervention would operate if it was fully integrated into the treatment programs' normal operations. As with most prison-based substance abuse treatment programs, clinical data is largely paper-based, and maintaining clinical files is very labor intensive. Every effort was made to minimize the additional workload that was placed on counselors, who now also were tasked with monitoring and tracking MI points. As with the development of the intervention itself, the objective was to build a database that was as user friendly as possible. Input screens on the PTDB mirrored forms to simplify the input of data.

Specifically, the PTDB was programmed to perform the following functions: (1) track which experimental group (BR or ST) each participant was in, (2) calculate the number and type of MI points earned by each BR participant (i.e., attendance/participation points, task completion points), (3) compute the number of points to be given to each ST participant each week (i.e., the mean number of points earned by BR participants that week), and (4) track how many MI points participants in both the BT and ST groups earned, accumulated, and redeemed or donated to the Community Charity fund.

Each week, the PTDB printed a MI point statement that detailed MI points earned or received for the previous week, MI points redeemed or donated, and the current MI point balance. For MI Point Redemption Forms submitted, the PTDB also generated MI point vouchers that the inmates presented to the commissary to pay for selected commissary items, or to designated custody staff to obtain selected privileges. Vouchers documenting charity donations were forwarded to institutional accounting. MI point statements and vouchers were printed on color printers located in secured offices, and they contained the colored Project BRITE logo on them. As with the multicolored stamps, this prevented vouchers from being fraudulently duplicated.

Monthly Implementation Feedback Meetings

Throughout the intervention, monthly implementation feedback meetings were held to discuss the study's overall progress and to identify problems that needed to be addressed or modifications that needed to be made to the intervention to strengthen its effectiveness and chances for long-term sustainability. Attendees included three to four study participants, treatment counselors, selected classification and custody staff, institutional management, and research staff. In addition, throughout the intervention, staff at both study sites were frequently invited to attend custody staff "muster" meetings to keep commanding officers and line custody staff updated on Project BRITE. Research staff also met regularly with treatment staff on an informal basis and sometimes appeared briefly at treatment group sessions to gain feedback and address participant questions about intervention procedures.

The remainder of this article presents an overview of the study procedures, a description of the Project BRITE study participants, a summary of MI points earned and redeemed by the study participants, and a discussion of potential limitations that may have impacted the ability of the randomized design to reliably demonstrate the effectiveness of the intervention.

STUDY PROCEDURES

After recruitment and administration of informed consent, subjects were administered a two-part comprehensive baseline assessment. The main assessment (Part 1) was administered face-to-face and collected data in eight domains: (1) sociodemographic background, (2) family background and relations, (3) peer relations, (4) criminal history, (5) health and psychological status, (6) drug and treatment history, (7) gambling, and (8) HIV/AIDS risk behaviors. Part 2 of the baseline assessment consisted of self-administered validated measures of dynamic psychosocial functioning. These included the Brief Symptom Inventory (BSI; Derogatis & Melisaratos 1983) and the Texas Christian University (TCU) Criminal Thinking Scale (CTS; Knight et al. 2006).

In addition to these assessments, study participants were assessed for comorbid clinical diagnoses, psychopathy, and emotional intelligence via administration of the Structural Clinical Interview for the DSM-IV (SCID; First et al. 2002), the Psychopathy Checklist-Revised (PCL-R, Hare 2003), and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Mayer et al. 2003). Due to the length of time required to conduct these interviews as well as the static nature of these measures, participants were administered these assessments within 30 days of being enrolled in the study.

Part 2 of the baseline assessment (self-administered measures of dynamic psychosocial functioning) was administered again at the conclusion of the 12-week IOP program (posttreatment). In addition, at posttreatment, self-reported measures of treatment participation, treatment progress, and treatment satisfaction were captured.

Records-based data on community supervision violations (including the results of tests for illicit drug use performed while under community supervision), participation in publicly funded community-based treatment, arrests, and returns to custody were collected for the nine-month period following release from prison.

Following the completion of the two-part baseline assessment, participants were randomly assigned to receive IOP treatment as part of the Behavioral Reinforcement (treatment) or Standard Treatment (control) groups.

STUDY PARTICIPANTS

The final BRITE participant population consisted of 187 males (BR = 95, ST = 92) and 143 females (BR = 73, ST = 70) enrolled in the 12-week IOP treatment programs at the two study sites. Selected descriptive statistics for the male and female BRITE participants appear in Table 2.

Among females, there were no significant differences between BR and ST participants on any of these descriptive measures. Among males, a significantly greater percentage of BR participants reported previous substance abuse treatment compared to ST subjects (72.8% vs. 55.8%).

POINTS EARNED AND REDEEMED

Table 3 documents where MI points were earned by BR study participants and how all study participants (BR and ST) redeemed their MI points. At the male study site, the largest proportion of MI points were treatment points (69.2%), whereas at the female study site, BR participants earned a relatively equal number of treatment points and program & activities points (41.5% and 42.0%, respectively).

With respect to what MI points were redeemed for, at both study sites, study participants (BR and ST) redeemed most of their MI points for tangible items from the prisons' commissaries. The redeeming of MI points for increased privileges was less than expected. Feedback from the monthly implementation feedback meetings indicated that this was due to the inability of inmates to realize the privileges immediately (many of the privileges require coordination and time on the part of the institution to produce) and also due to the lack of popularity of most of the privileges among the inmates, even though most of the available privileges were proposed by the inmates themselves. At the male study site, a small percentage of MI points were donated to charity. General practice at the female study site was for inmates to donate remaining MI points to charity at the end of their participation in the intervention, which explains the higher percentage of MI points donated to charity as well as why all MI points were redeemed or donated.

POTENTIAL LIMITATIONS

Study Branding

A conscious effort was made to promote buy-in and ongoing support for the study among correctional staff and inmates by "branding" the study. The "BRITE" acronym was created, and the intervention was presented to all inmates and staff as "Project BRITE" from the first day it was introduced. As a result, throughout the study, research staff were only known and referred to as Project BRITE staff. A Project BRITE logo and Project BRITE banner were professionally designed and produced. The banners were hung in group treatment rooms and in counselors' offices, as well as in prison administration offices and other areas of the institutions. Treatment and non-uniformed prison administration staff, as well as on-site research staff, were given and frequently wore polo shirts and fleece jackets that contained the BRITE logo. All inmates who agreed to participate in the study were given an institutionally approved drinking mug that contained the BRITE logo, a Project BRITE study information booklet, and a Project BRITE folder to use for holding study- and treatment-related documents. As noted above, to document completion of tasks and earn MI Points, BR study participants were required to get activity sheets stamped by designated staff using different colored BRITE stamps. All study participants received weekly MI point statements and vouchers for MI points redeemed that contained the Project BRITE logo.

At both study sites, feedback from the monthly implementation feedback meetings suggested that study participants commonly referred to themselves as "STs" and "BRs," and that participants in both study groups may have associated being in the treatment program with receiving MI points as part of Project BRITE. This may have negated the intended effect of the yoked control procedure, which was designed to isolate the effect of the *contingent* delivery of MI points to participants in the BR groups. The successful use of a yoked control procedure depends on study subjects in the yoked control condition not perceiving that the delivery of the reinforcer (e.g., MI points) is contingent on the occurrence of a specific behavior. Due to the overly successful branding of the study, it is possible that ST participants failed to fully perceive the receipt of MI points as separate from and unrelated to their participation in treatment and/or the other activities and behaviors for which BR participants had to engage in to earn MI points.

Random Assignment

While this study employed random assignment, it was not possible to make group assignment blind to the study participants. Early efforts to keep BR and ST participants separate within the context of the treatment programs were not successful. Male and female inmates enrolling in treatment at the two study sites were required to attend either morning or afternoon group treatment sessions. Originally, these treatment groups were randomly selected to treat only BR or only ST participants. However, the separation of BR and ST study participants into these separate treatment groups quickly proved unsustainable due to the treatment provider's need to immediately fill vacant treatment group slots as they became available. As such, both morning and afternoon treatment groups contained BR and ST participants, and most study participants knew the group assignment of other study participants within their group. Furthermore, ST participants quickly discovered that the number of MI points that they received each week under the yoked control procedure was tied to the number of points that BR participants earned. As a result, at both study sites, it became common practice for some ST participants to actively encourage BR participants to engage in activities and behaviors that would earn them points, which in turn would translate into more MI points being received by ST participants.

As with the successful branding of the study and its possible impact on study participants' perceptions regarding participation in treatment and the receipt of MI points, the inability to keep participants blind to other participants' study group membership and/or to keep them segregated from each other during the study may also have impacted the ability to detect significant differences between the two groups.

SUMMARY

Project BRITE represented the first empirical test of contingency management in a real-world correctional setting. Due to the organizational reality of correctional settings and overall correctional philosophy, the use of positive behavioral reinforcement in prisons to shape or change inmate behavior is rare. Contingency management is an evidence-based practice that has consistent empirical support with individuals suffering from substance use disorders. As such, prison-based substance abuse treatment settings were an appropriate environment to empirically test this intervention.

From the beginning, a conscious effort was made to promote buy-in and support for the study among correctional staff and inmates and to minimize research staff involvement. This was accomplished by utilizing the conceptual logic model of community-based participatory research (CBPR; Wallerstein & Duran 2003) to develop and implement the intervention. Through educational seminars, a series of planning workgroups, and monthly implementation feedback meetings held throughout the intervention, institutional management, line custody staff, and inmates in the treatment programs actively participated in the development and implementation of the intervention. This was done within broadly defined parameters that were established to maintain overall study integrity. In addition, the study was actively promoted by forming the study acronym (Project BRITE), developing a professional logo, and then disseminating banners, shirts, inmate mugs, and study-related supplies and materials that displayed the Project BRITE logo.

Largely as a result of these efforts, the intervention was strongly supported and well-received among prison administration, custody staff, and the inmates in the drug treatment programs. However, based on feedback from the monthly implementation feedback meetings, the successful branding of the study may have ultimately had the unintended consequence of blurring the distinction among study participants participating in the BR (experimental) groups and those in the ST (control) groups. This, in turn, may have

attenuated the intended effect of the yoked control procedure to isolate the effect of the *contingent* delivery of MI points; as this was intended only for the BR participants, ST participants may have perceived the noncontingent receipt of MI points as related to their participation in treatment and/or other activities and behaviors for which BR participants had to engage in to earn MI points. Similarly, the inability to ultimately keep BR and ST study participants segregated from each other or blind to each other's group assignments may also have impacted the ability to detect significant differences between the two groups.

Planned analyses will test the primary hypotheses of this study by examining differences between the BR and ST participants on changes in psychosocial functioning over the course of time in treatment and exposure to the intervention. These include measures of psychological functioning (e.g., depression, anxiety, hostility) as well as measures of criminal thinking (e.g., justification, entitlement, and criminal rationalization). We will also examine differences between BR and ST participants on post-release measures of illicit drug use, participation in publicly-funded community-based treatment, and re-arrests and return-to custody based on records-based data. Finally, we plan to assess the impact that psychopathy, SCID diagnoses, and emotional intelligence had on participation in treatment and the intervention and on the dependent outcome measures outlined above. Results from these analyses will provide direction and recommendations for additional future research in this area and may have potential implications relating to the treatment of drug-involved offenders in correctional settings.

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FIGURE 1.
Project BRITE Conceptual Model

Targeted Activities and Behaviors and Associated MI Points

TABLE 1

Treatment	Programs & Activities		Other Behaviors	
Group Session I	0-6	Education	1-5	Clean Drug Test
Group Session II	0-6	Job Assignment	1-5	Good Deed
Group Session III	0-6	Vocation	1-5	Disciplinary-Action Free
Self-Evaluation	1-5	Other Programs	1-5	Achieve Treatment Goal
Weekly Homework	1-5	12-Step Meetings	3 ea	Complete Treatment Plan
Make-up Sessions	0-6	Religious Services	3 ea	Activity Sheet on Time
Individual Sessions	1-5	Sports Activity	2	
Completion of Step 1 *	1-5	Other Activities	2	
Develop Treatment Plan	1-5			

* Step 1 refers to Step 1 of the 12-Steps.

TABLE 2

Descriptive Statistics of Project BRITE Subjects

Variables	Males (N = 187)		Females (N = 143)	
	% or M (SD)	BR vs. ST	% or M (SD)	BR vs. ST
Age	34.4 (10.5)	n.s.	33.5 (9.2)	n.s.
Ethnicity		n.s.		n.s.
White	59.9%		69.9%	
Black	10.7%		8.4%	
Latino	12.3%		7.0%	
Other	17.1%		14.7%	
Marital Status		n.s.		n.s.
Never Married	51.3%		49.0%	
Married/Live Together	17.1%		12.6%	
Widowed/Separated/Divorced	31.6%		38.5%	
Employment		n.s.		n.s.
Full/Part Time	46.0%		23.2%	
Other	54.0%		76.8%	
Criminal Background				
Age of First Arrest	15.9 (4.3)	n.s.	19.6 (5.7)	n.s.
History of Violent Crime	81.8%	n.s.	58.7%	n.s.
Lifetime Years Incarcerated	8.2 (10.4)	n.s.	4.4 (11.9)	n.s.
Drug Use & Treatment History				
Age of First Drug use	11.3 (3.5)	n.s.	12.6 (3.5)	n.s.
Previous Substance Abuse Treatment	64.2%	$p < .05^*$	65.0%	n.s.

* A significantly greater percentage of male BR subjects reported previous substance abuse treatment compared to male ST subjects (72.8% vs. 55.8%).

TABLE 3

Distribution of Project BRITE Motivational Incentive (MI) Points Earned and Redeemed

	Males		Females	
	BR	ST	BR	ST
MI Points Earned				
Treatment	69.2%	N/A	41.5%	N/A
Program & Activities	20.4%	N/A	42.0%	N/A
Other Behaviors	10.3%	N/A	16.5%	N/A
MI Points Redeemed/Donated				
Tangible Items	88.0%	83.9%	82.1%	79.6%
Privileges	5.4%	5.6%	5.8%	6.0%
Community Charity	1.8%	2.7%	12.1%	14.4%
Not Redeemed/Donated	4.8%	7.8%	0.0%	0.0%