THE DIALOGUE

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Motivational Incentives: Useful Tool in the Improvement of Treatment Outcomes

The issue of transferring research-based evidence into clinical practices is an ongoing effort in the field of substance abuse treatment. As a part of this effort, the Substance Abuse and Mental Health Services Administration (SAMHSA) and the National Institute on Drug Abuse (NIDA) have entered into a cooperative agreement to engage in initiatives that help promote the transfer of evidence-based research into practice. The ATTCs have received funding to assist with the dissemination of certain evidence-based practices from NIDA's National Drug Abuse Treatment Clinical Trials Network (CTN). The featured article in this edition of The Dialogue discusses one such evidence-based practice, Motivational Incentives.

Providing Positive Reinforcement with Motivational Incentives: National Study Explores Impact on Abstinence and Attendance

By Paula Jones

Every parent is aware of the benefits of using rewards to influence their children's behavior, espeially when it comes to encouraging them to do something that may be difficult. Parents know that positive reinforcement can work wonders. The same approach can be used to motivate drug users in outpatient substance abuse treatment to remain in treatment and abstain from drug use. The use of rewards, also referred to as incentives, in treatment is called contingency management (CM). CM interventions are based on behavioral research indicating that reinforcing a behavior can increase its frequency.

The efficacy of CM interventions has been demonstrated in patients dependent on opioids, marijuana, alcohol, and cocaine. Many of the studies of CM interventions have provided vouchers to patients, contingent on them attending treatment and/or abstaining from drugs. Despite the proven effectiveness of vouchers, some issues have hindered the adoption of this strategy in community-based programs. The primary issue is cost—in some studies participants could earn more than $1000 in vouchers. It is unlikely that many local programs could find the funds to support this level of reward.

Researchers at the Johns Hopkins University (JHU) School of Medicine conducted a clinical trial at eight community-based drug treatment sites across the country to explore the effectiveness of intermittent incentives. A chance to win a prize would be used to reinforce behavior instead of a guaranteed prize, the assumption being that a chance of winning was as good as a sure thing. The study is supported by the National Institute of Drug Abuse's (NIDA) National Drug Abuse Treatment Clinical Trials Network (CTN).

In the CTN study, patients earned a chance to draw chips from a container and win prizes of varying magnitudes. The difference between the voucher and the intermittent, prize-based studies is that with vouchers, patients receive a reward every time. In the prize-based study, 50 percent of the chips in the container stated "Good Job" and no prize was received by the participant. In the CTN study, an average of $400 in prizes could be won over three months if a participant submitted urine samples that tested negative for all target drugs (stimulants, opiates, and marijuana) as well as negative breath alcohol tests. This intermittent model is a much more affordable option for community-based providers.

While the study explored the impact of incentives awarded for drug negative urine samples under a particular set of procedures, Maxine L. Stitzer, PhD, principal investigator for the study, emphasizes that with incentives, the most important thing is the principle of positive reinforcement.

The researchers were fully aware of the challenges of sustaining an incentive program, particularly the financial challenges, and used a protocol that could make these programs more feasible for community clinics. Stitzer emphasizes that programs may not have the ability or the interest to implement the study protocol exactly as it was done in the CTN trial.

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"Hopefully programs will adopt the principles of positive reinforcement and tailor the prize draw approach to their own clinical goals and patient needs," she states. "Positive reinforcement should be integrated throughout programs and the successes of clients should be celebrated. Bringing a positive spin to treatment can be great for the morale of both clients and staff."

Clinical Trials Network

The JHU study is part of a unique clinical trials process supported by the National Institute of Drug Abuse's National Drug Abuse Treatment Clinical Trials Network (CTN). The CTN is designed to bridge the gap between clinical research and direct services to substance abusing patients. Through the CTN, research-based drug abuse treatment protocols are tested under real-world treatment conditions by the network's 17 regional research centers, called nodes, in collaboration with community treatment programs.

Participating in research can create challenges for the community treatment programs. Many have never participated in clinical trials before.

"Staff was open to the process but it was different from anything we had done. Research uses different language, requires different training, and has different expectations," relates Patricia Quinn Stabile, Program Director at HARBEL Prevention and Recovery Center in Baltimore, one of the sites in the JHU study. "We had to find common goals and provide training to staff."

To date, 21 studies have been completed or are underway as part of the CTN.

To find out more about the CTN go to www.nida.nih.gov/CTN/index.html.

Stitzer explains that many clients have received very little positive reinforcement in their lives and it can serve as a strong motivator. In addition, there is a prevailing attitude that clients should not be rewarded for what they should be doing anyway, which does not recognize the benefits that can be gained from reinforcing positive behavior.

The primary hypotheses of the CTN study were that participants receiving the incentives would remain in the study longer, submit more stimulant- and alcohol-free samples, provide a higher percentage of stimulant- and alcohol free samples, and remain abstinent from these drugs for a longer period of time. The researchers also hypothesized that participants receiving incentives would attend more counseling sessions and submit a higher proportion of samples free of opioids and marijuana than participants receiving regular care.

The multi-site study provided a unique opportunity to evaluate the intervention within the context of the care provided at each site. Both the content and intensity of standard therapy were expected to vary across sites, as were usual care outcomes. By studying the intervention across several sites, the researchers could explore whether the intervention had an impact with different patient populations and care practices.

The Study

A total of 415 cocaine or methamphetamine users beginning outpatient substance abuse treatment were enrolled in the study between April 2001 and February 2003. Approximately half the participants received standard care with the opportunity to receive prizes. The other participants received standard care. Standard care usually consisted of group counseling combined with some individual and family counseling.

To determine abstinence from drugs, participants were asked to provide two urine samples per week on nonconsecutive days for at total of 24 samples over the course of the study. The first sample was taken at intake. Participants also provided a breath sample at each visit that was tested for alcohol use.

For participants in the incentive group, when their test results were negative for all the primary target drugs they drew one to 12 chips from the container. Chips were marked with one of four values: good job (50% of chips); small (41.8% of chips); large (8% of chips); and jumbo (0.2% of chips). Draws increased by one for each week in which all the submitted samples were free of the primary target drugs. The number of draws returned to one if the participant had an unexcused absence or submitted a sample positive for a primary target drugs. To offset the lack of reinforcement early in the study when the number of draws was low, a single large prize was awarded after the first two consecutive weeks of abstinence. At each study visit, participants could also earn two bonus draws if their sample was free

Incentives

Good Job	No prize
Small	Toiletries, snacks, bus tokens, fast food gift certificates (approximately $1 in value)
Large	Kitchen objects, telephones, compact disc players, retail store gift certificates (approximately $20 in value)
Jumbo	Televisions, stereos, DVD players (approximately $80 to $100 in value)

of opioids and marijuana. The maximum number of draws a participant could earn during the study was 204, which resulted in an average of approximately $400 in prizes.

Results

Participants receiving incentives while being treated in psychosocial counseling programs remained in treatment longer and attended more counseling sessions than those not receiving incentives. Those receiving incentives were also significantly more likely to achieve 4, 8, and 12 weeks of continuous abstinence. The incentive group had approximately twice as many participants with at least four weeks and at least eight weeks of documented abstinence. The percentage of participants with 12 weeks of abstinences was nearly four times greater in the incentive group.

The study shows that retention, whether it was defined as the number of days between study intake and the last study visit, the proportion of participants who submitted samples each week, or the number of counseling sessions attended, was significantly lengthened when incentives were provided. Use of incentives also improved drug use outcomes. Little drug use was detected while patients remained in treatment. Thus, duration of sustained abstinence was lengthened during longer periods of treatment participation.

What is the Best Way to Use Incentives?

Since the researchers found many patients remained abstinent while participating in psychosocial counseling treatment, is it necessary to reinforce abstinence or should the reinforcement focus on attendance? The researchers suggest that incentives based on attendance may be a more beneficial approach. Focusing on attendance has additional benefits. For one, urinalysis frequency could be reduced, which would reduce the cost of administering the program. For the study, clinics were provided funds to hire a research assistant to conduct the urine testing—probably not a likelihood in the real world. In addition, the researchers suggest that attendance-based incentives might encourage patients who have relapsed to return to treatment rather than feeling they might be unwelcome because of their drug use. However, more research is needed to determine if this is the case.

"When individuals in treatment programs have already stopped using drugs, the main job of the provider is to keep them from relapsing," states Stitzer. "Incentives, by helping people stay in treatment longer, may also give them more of a chance to learn the skills they need to stay off drugs."

In the study, the sites that seemed to benefit most from the intervention were those with relatively low usual care retention rates (e.g., less than 7–8 weeks average retention). This indicates that the use of incentives may be most beneficial in clinics with low retention rates. However, since benefits were identified across all the sites, CM should be considered even when retention rates are relatively high.

The researchers had planned to explore the long-term impact of the CM intervention but were unable to follow up with a sufficient number of participants to draw any meaningful conclusions. Additional research is necessary to address the conditions under which CM can have a long-term impact in community-based settings.

Barriers to the Use of Incentives

Despite ample evidence that incentives can enhance treatment, there are still barriers to incorporating their use in community programs. As stated previously, cost is a major factor. However, as more emphasis is places on evidence-based practices, funding agencies may be more inclined to provide resources for incentives. Clinics that operate under contracts where they are paid for units of service provided could increase their income by using incentives to motivate regular attendance at scheduled sessions. Some public sector funders are agreeing to support incentives when they are included by grantees as a line item in their budgets.

"Since the study we have done several small, limited projects that have used incentives," relates Quinn Stabile of HARBEL Prevention and Recovery Center. "We haven't been able to continue to use them as we did in the study but we are working to bring them back."

Another barrier is training. While the intervention may seem relatively easy to implement, staff need training on how to incorporate incentives into

the overall program. Not only do attitudes need to be changed but new skills are also necessary. Ideally, training should be an ongoing process with regular feedback provided to staff.

Closely related to the training issue is the challenge of implementing a new process into the existing treatment protocol.

"It was more complicated to implement the use of incentives than we had anticipated," states Quinn Stabile. "We needed to track the use of incentives and make sure that they were provided in a fair way."

Perhaps the greatest remaining barrier is attitudes. From administrators to frontline staff, there needs to be an acceptance of rewarding clients' positive behavior.

"The take home message is the idea of celebrating success by applying positive reinforcement in the clinic," states Stitzer. "Each clinic can look at its own situation and decide what is important to it and their clients in terms of incentives."

While attitude is a barrier, it is not insurmountable. "Some staff were resistant but others immediately understood the use of incentives. We emphasized in training that most businesses, as well as other models, reward people," states Quinn Stabile. "With training, staff understood the use of incentives."

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Getting the Word Out

Closely linked to the work of the CTN is an initiative developed in 2001 by NIDA and the Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Treatment (CSAT). **The NIDA/SAMHSA-ATTC Blending Initiative** is designed to meld science and practice together to improve drug abuse and addiction treatment. The initiative encourages the use of current evidence-based treatment interventions by professionals in the drug abuse treatment field. "Blending Teams," comprised of staff from CSAT's Addiction Technology Transfer Center (ATTC) Network and NIDA researchers, are charged with the dissemination of research results for adoption and implementation into practice.

The Blending Team focusing on motivational incentives, headed by Lonnetta Albright, Director of the Great Lakes ATTC along with Anne-Helene Skinstad, Director of the Prairieland ATTC and Amy Shanahan of the Northeast ATTC, is designing an awareness campaign, Promoting Awareness of Motivational Incentives (PAMI) that will educate policymakers, administrators, and clinicians about motivational incentives. The campaign will use a variety of vehicles, such as PowerPoint slide sets and videos. Information to be covered by the campaign includes: definitions; history of theory and use of motivational incentives; core principles; past and current research, and clinical applications. A toolkit is being developed that will include articles, an annotated bibliography, testimonials, sample letters to policymakers, FAQs, and other resources to help programs learn more about motivational incentives and promote the idea in their community. The campaign will also focus on how to operationalize lower-cost incentive interventions, such as the intermittent reward approach used in Dr. Stitzer's study.

"Because of the perceptions relating to the cost of supporting incentive programs and the need to change mindsets about the use of rewards, we first must build awareness and educate the field," states Albright. "We want to get the word out and motivate people to want to know more. The ultimate goal is that they learn how to implement these approaches."

As part of the Blending Team's process, focus groups were conducted with policymakers, researchers, clinicians, and single-state agencies to identify significant considerations and implications for the addiction treatment field. Important questions were considered such as are the benefits of motivational incentives worth the expense, does use of incentives support treatment outcomes, is use of incentives fair, and does the use of incentives promote gambling.

The Blending Team anticipates launching the awareness campaign later this year. Materials developed as part of the campaign will be distributed via the ATTC network. Materials wi ll be posted on the national ATTC website at www.nattc.org, the Great Lakes ATTC website at www.glattc.org, and other regional ATTC sites.

For more information about this and other upcoming blending initiatives, please contact the National ATTC at www.nattc.org.