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Counselor attitudes toward contingency management for substance use disorder: effectiveness, acceptability, and endorsement of incentives for treatment attendance and abstinence☆

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Abstract

Despite research demonstrating its effectiveness, use of contingency management (CM) in substance use disorder treatment has been limited. Given the vital role that counselors play as arbiters in the use of therapies, examination of their attitudes can provide insight into how further use of CM might be effectively promoted. In this paper, we examine 731 counselors' attitudes toward the effectiveness and acceptability of CM in treatment, as well as their specific attitudes toward both unspecified and tangible incentives for treatment attendance and abstinence. Compared to cognitive behavioral therapy, motivational interviewing, and community reinforcement approach, counselors rated CM as the least effective and least acceptable psychosocial intervention. Exposure through the use of CM in a counselor's employing organization was positively associated with perceptions of acceptability, agreement that incentives have a positive effect on the client–counselor relationship, and endorsement of tangible incentives for abstinence. Endorsement of tangible incentives for treatment attendance was significantly greater among counselors with more years in the treatment field, and counselors who held at least a master's degree. Counselors' adaptability or openness to innovations was also positively associated with attitudes toward CM. Further, female counselors and counsellors with a greater 12-step philosophy were less likely to endorse the use of incentives. A highlight of our study is that it offers the first specific assessment of the impact of "Promoting Awareness of Motivational Incentives" (PAMI), a Web-based tool based on findings of CM protocols tested within the Clinical Trials Network (CTN), on counselors employed outside the CTN. We found that 10% of

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counselors had accessed PAMI, and those who had accessed PAMI were more likely to report a higher degree of perceived effectiveness of CM than those who had not. This study lays the groundwork for vital research on the impact of multiple Web-based educational strategies. Given the barriers to CM adoption, identifying predictors of positive attitudes among counselors can help diffuse CM into routine clinical practice.

Keywords

Contingency management; Motivational incentives; SUD treatment; Counselor attitudes; PAMI; Blending Products; Training

1. Introduction

Contingency management (CM) is a psychosocial treatment for substance use disorders (SUD) with substantial support for its effectiveness. Despite such evidence, adoption of CM in SUD treatment facilities remains limited (Bride, Abraham, & Roman, 2011; Compton et al., 2005; Condon, Miner, Balmer, & Pintello, 2008; Hartzler, Lash, & Roll, 2012; Hartzler & Rabun, 2013; McGovern, Fox, Xie, & Drake, 2004). Given the vital role that counselors play as arbiters in the use of interventions, examination of their attitudes should provide insight into how further use of this evidence-based practice (EBP) might be effectively promoted. In this paper, we examined counselors' attitudes toward CM's effectiveness and acceptability in treatment, as well as their specific attitudes toward both unspecified and tangible incentives for treatment attendance and abstinence.

Referred to also as “motivational incentives,” CM draws on classic behavior modification theories, and is based on providing incentives for performing a target behavior (Petry & Simcic, 2002). The flexible application of CM is indicated by the range of possible behavioral targets, such as negative drug tests, abstinence, group therapy attendance, compliance with rules, and achievement of treatment goals (Bride, Abraham, & Roman, 2010). Incentives can take the form of goods, such as vouchers for food and toiletries, or increased clinic privileges (Bride et al., 2011; Petry & Simcic, 2002; Prendergast, Podus, Finney, Greenwell, & Roll, 2006). Specific examples are permission to take home limited doses of methadone and thus avoid the inconvenience of daily clinic visits, or receiving coupons to purchase fast food after achieving a set number of negative drug tests (Petry & Bohn, 2003). When the rewards are given publicly, personal achievement and self-efficacy can be an intangible award accompanying the incentive (Kellogg et al., 2005).

Research on CM over the past 30 years has demonstrated its effectiveness in promoting abstinence behavior and in increasing treatment attendance and medication adherence (Carpenedo, Kirby, Dugosh, Rosenwasser, & Thompson, 2010; Dutra et al., 2008; Lussier, Heil, Mongeon, Badger, & Higgins, 2006; Prendergast et al., 2006). Deterioration in its effects has been reported shortly after a CM intervention ends and at 6-month follow up (Benishek et al., 2014), but similar declines have also been reported for other behavioral interventions (Prendergast et al., 2006). CM has been shown to be efficacious in the treatment of those dependent on marijuana, methamphetamines, opioids, stimulants, alcohol, and polysubstance use (Carroll et al., 2001; Petry & Alessi, 2010; Petry, Martin, Cooney, &

Kranzler, 2000; Petry et al., 2005; Shoptaw et al., 2005; Stitzer & Petry, 2006), and has also been found effective in treating those with psychiatric comorbidities (Weinstock, Alessi, & Petry, 2007). Its impact on patients with alcohol use disorder is, however, tempered by the difficulty in determining the time at which someone drinks.

Despite this range of evidence, implementation of CM in treatment programs is not widespread, and research indicates reluctance by organizational leadership to adopt it. A study examining program leaders employed at licensed outpatient facilities in Pennsylvania found that they did not rate CM as high as they did other EBPs, and were less willing to implement it compared to other interventions (Benishek, Kirby, Dugosh, & Padovano, 2010). A study in California combining responses from management, clinical supervisors, counselors, and others who had direct client contact found that CM was rated the least effective of six psychosocial interventions (Herbeck, Hser, & Teruya, 2008). These attitudes are not uniformly negative, as another study using program staff and leaders from three geographical areas in the United States found that two thirds had positive attitudes regarding the use of tangible incentives, and 54%would be in favor of adding a tangible CM intervention to their treatment program(Kirby, Benishek, Dugosh, & Kerwin, 2006). They did, however, also identify objections to the use of CM, including its cost and that it did not address underlying issues that drive addiction (Kirby et al., 2006). Recent studies have confirmed these concerns (Kirby et al., 2012; Srebnik et al., 2013).

Most prior studies examined the combined attitudes of program staff and leadership. Limited research confirms resistance specifically at the counselor level. A study of a sample of 89 clinicians found that they were more motivated to adopt cognitive behavioral therapy and motivational interviewing, compared to CM (McGovern et al., 2004). McCarty et al. (2007) also found that attitudes toward CM were negative, and that most respondents had concerns regarding the appropriateness of paying patients for attending treatment or of giving prizes for abstinence. These findings suggest that counselors may be more favorable toward CM if the reward is not specified (McCarty et al., 2007) or if the incentives are intangible (e.g. recognition ceremonies or certificates of achievement) (Kirby et al., 2006).

1.1. Exposure to CM

Rogers' (2003) arguments regarding an innovation's “observability” (i.e. the degree to which its results are visible to others) and “trialability” (i.e. the degree to which an innovation may be experimented with on a limited basis) suggest that, through exposure, counselors will have more favorable attitudes when their treatment program provides CM-specific training or uses CM in its treatment. The small number of studies on counselors' attitudes toward CM found that, without formal training or use of CM in the counselor's treatment program, counselors' attitudes tended to be negative. Studies on other EBPs also indicated that a lack of exposure was a barrier to positive attitudes toward them(Ducharme, Knudsen, Abraham, & Roman, 2010; Herbeck et al., 2008; McGovern et al., 2004), while training and exposure were associated with positive attitudes (Abraham, Rieckmann, McNulty, Kovas, & Roman, 2011; Benishek et al., 2010; Bride, Abraham, & Roman, 2010; Rash, DePhilippis, McKay, Drapkin, & Petry, 2013), and with increased uptake of EBPs in treatment programs (Henggeler, Chapman, Rowland, Sheidow, & Cunningham, 2013).

In addition to formal training, counselors can receive exposure to CM through self-directed and computer-based training provided by the readily available package, “Promoting Awareness of Motivational Incentives” (PAMI). This product was released in 2007 and updated in 2011 as part of the Blending Initiative of the National Institute on Drug Abuse (NIDA), and is based on findings of protocols tested within NIDA's Clinical Trials Network (CTN) (Hamilton et al., 2007). The protocols (CTN-0006 and CTN-0007) examined the use of low-cost incentives, in conjunction with urine testing, and found that the use of abstinence-based incentives was effective in increasing treatment retention and abstinence in drug-free clinics (Petry et al., 2005), and in improving abstinence-outcomes in methadone clinics (Peirce et al., 2006). The PAMI product includes a video featuring top SUD researchers and clinicians, introduces the history and core principles of CM, and illustrates the effectiveness of CM in action through a video demonstration. It also addresses frequently asked questions, and includes suggestions for overcoming barriers to implementing CM. The present study includes examination of the relationship of these Web-based training materials on counselors' attitudes toward CM.

1.2. Treatment ideology

Besides exposure to CM, counselor treatment-related values, reflected by endorsement of a 12-step treatment philosophy, are also associated with familiarity with and attitudes toward treatment approaches (Knudsen, Ducharme, & Roman, 2007; Rash et al., 2012). Past research found that counselors who primarily used a 12-step model as their treatment approach reported less use of CM (McGovern et al., 2004). Further, SUD counselors' attitudes toward EBPs in general have been linked to perceptions of effectiveness and acceptability of specific pharmacological and psychosocial innovations (Abraham, Ducharme, & Roman, 2009; Bride et al., 2010). Positive attitudes toward innovations in general can be linked to adaptability and openness for change, which are further associated with adoption of new technologies (Lehman, Greener, & Simpson, 2002; Simpson, 2002).

1.3. Professional characteristics

Finally, professional credentials, such as advanced education and longer work experience, have been linked to adoption and attitudes toward EBPs, with greater experience and longer tenure generally linked to more favorable attitudes (Bride, Kintzle, Abraham, & Roman, 2012; Damanpour, 1991; Ducharme, Knudsen, Abraham, & Roman, 2010; Fitzgerald & McCarty, 2009; Haug, Shopshire, Tajima, Gruber, & Guydish, 2008; Kirby et al., 2006). Therefore, counselors with more education and more experience in the field are likely to have more positive attitudes toward CM.

In summary, it is expected that counselor attitudes toward CM will be a function of three factors: exposure, counselor philosophy relative to treatment, and professional characteristics. Counselors employed in a program that uses CM, those with more extensive CM-specific training, and counselors with access to PAMI are expected to report more positive CM attitudes. Further, counselors with a lower endorsement of a 12-step orientation, more positive attitudes toward EBPs, higher education and longer tenure in the behavioral health field are expected to have more positive attitudes toward CM.

2. Material and methods

2.1. Sample and study eligibility

Data for this study were collected between June 2009 and January 2012 from counselors working in a nationally representative sample of 307 addiction treatment programs in the United States. Programs were randomly selected using the Substance Abuse and Mental Health Services Administration Substance Abuse Treatment Facility Locator. To be eligible, programs had to be open to the general public and offer, at minimum, structured outpatient level of care as defined by the American Society of Addiction Medicine's placement criteria (Mee-Lee, Shulman, Fishman, Gastfriend, & Griffith, 2001). Individual private practices, transitional living facilities, court-ordered driver education classes, detoxification-only programs, Veterans Health Administration facilities, correctional facilities, and methadone-only treatment programs were excluded. Treatment programs had at least 25% of their patients with primary diagnoses of alcohol dependence. Sixty-eight percent of those in this sample screened as eligible for the study agreed to participate. Programs screened as ineligible were replaced by a random selection of alternate programs in order to sustain the target sample size.

Interviews were conducted face-to-face with the administrator and clinical director of each treatment program. Data about staffing, internal management, and human resources were provided by the administrative director, while information about clinical care and treatment philosophy was provided by the clinical director. At the end of each interview, a list of all SUD counselors employed by the program was obtained from the administrator. Each counselor employed by the participating treatment programs was mailed a packet at their work address that included an invitation letter, consent form, counselor questionnaire, and postage-paid return envelope. There was a $40 incentive for counselors who returned a completed questionnaire. A total of 816 questionnaires were returned from counselors, representing a 66% response rate. The Institutional Review Board of the University of Georgia approved all research procedures.

2.2. Measures

2.2.1. Dependent variables—Acceptability was measured with a question that asked counselors how acceptable CM was to them as a treatment professional. Responses ranged from 1 (completely unacceptable) to 7 (very acceptable). CM effectiveness was measured with a question that asked to what extent counselors considered CM to be effective, based on their knowledge and personal experience (1 = not at all effective, 7 = very effective). These general attitudinal measures have been used in other studies on staff attitudes toward EBPs (Abraham et al., 2009; Herbeck et al., 2008; Rieckmann, Kovas, McFarland, & Abraham, 2011). Although not included as dependent variables, we also provided information on acceptability and effectiveness of other psychosocial approaches (see Table 1).

We also included more specific attitudinal measures toward CM. Counselors were asked to rate their agreement (1= strongly disagree, 7 = strongly agree) with the following statements: “Incentives have a positive effect on the client/counselor relationship;” “It is

okay to pay clients for attending treatment;" and "It is okay for clients to have the opportunity to earn prizes worth as much as $100 for abstinence." The first measure did not specify the type of incentive, while the second and third measures framed incentives in terms of tangible rewards for specific goal behaviors (i.e. treatment attendance and abstinence, respectively). These three itemswere drawn from a CTN study of direct care workers (McCarty et al., 2007).

2.2.2. Independent variables—Three variables were used to measure counselor exposure to CM. A dichotomous variable indicating whether counselors were employed in a treatment program that currently used CM was included. This program measure was drawn from the on-site interview with the clinical director. A second exposure variable asked counselors to what extent their treatment program provided them with CM-specific training. Responses ranged from 1 (no training received) to 7 (extensive training received). Finally, counselors were asked whether they were familiar with NIDA educational materials and whether they had specifically accessed the PAMI product. Only counselors who stated they were familiar with CTN Blending Products were asked if they had accessed PAMI. Counselors who had accessed PAMI were assigned a value of 1 on the dichotomous variable. Twelve-step orientation was measured as the mean of three items (α = .82) developed by Kasarabada et al. (2001). The three items measured counselors' agreement with the following items: "clients need to accept a lack of control over their addiction while placing faith in a higher power;" "clients need to reach out to recovering addicts;" and "the primary goal of treatment should be to encourage clients to work the 12 steps" (1 = strongly disagree, 7 = strongly agree). Counselor adaptability was measured as the mean of the following 4 items (α = .85), ranging from 1 (strongly disagree) to 7 (strongly agree): "I like to use new types of therapy/interventions to help my clients;" "I am willing to try new types of therapy/interventions even if I have to follow a treatment manual;" "I am willing to use new and different types of therapy/interventions developed by researchers;" and "I would try a new therapy/intervention even if it were very different from what I am used to doing." Professional characteristics of the counselors included education (1 = master's degree or higher, 0 = bachelor's degree or below) and the number of years worked in the substance use treatment field. We also included measures of counselors' gender (1 = female, 0 = male) and race (1=White, non-Hispanic, 0 = other).

Structural factors of the home treatment organization have been found to be a salient factor in the use of CM, so we controlled for them. Numerous studies have found a positive association between organizational size and innovations (Abraham & Roman, 2010; Damanpour, 1991; Friedmann, Taxman, & Henderson, 2007; Knudsen & Roman, 2004), so we included a measure of size using the number of full-time equivalent employees (FTEs); the measure was logged to adjust for positive skew. Dichotomous measures of profit status (1 = for-profit, 0 = non-profit) and hospital status (1 = hospital-based, 0 = program not based in a hospital) were also included in the models.

2.3. Analytic strategy

First, we provided descriptive statistics for all study variables and compared counselors' attitudes toward CM and other psychosocial interventions. Second, we conducted two

ordinary least squares (OLS) regressions to examine counselor acceptability and perceived effectiveness of CM. Finally, we conducted three OLS regressions using the specific attitudinal measures toward CM. Tests showed no evidence of multicollinearity among the independent variables. Aggregate data reported on staff composition (e.g. gender, race, education) by the administrator revealed that counselors who completed and returned a questionnaire did not differ significantly from the population of counselors employed by the treatment programs. Counselors working in the same treatment program have non-independent observations on the organizational-level variables; to account for this, the multivariate regression analyses were conducted using the survey ("svy") set of commands available in Stata 13,which produces robust standard errors, with the treatment programas the primary sampling unit. This accounts for the effect of clustering in survey samples when calculating the variance, standard errors and confidence intervals (Kohler & Kreuter, 2005). Little's MCAR test (Little, 1988) indicated that missing values were missing completely at random. After accounting for missing data on any of the measures, the sample for this analysis was 731 counselors.

3. Results

3.1. Descriptive statistics

Table 1 presents the descriptive statistics for the sample of substance abuse counselors. First, we examined counselor attitudes toward several psychosocial interventions to see how CM ratings compared to mean ratings of other therapies. Past research found that CM was rated the lowest among the psychosocial interventions (Herbeck et al., 2008). Besides CM, counselors in our study rated cognitive behavioral therapy (CBT), motivational interviewing (MI), and community reinforcement approach (CRA). On a scale of 1–7, counselors gave CM a mean rating of 5.82 (SD=1.40) on acceptability and 5.39 (SD=1.40) on effectiveness. Mean ratings for perceived acceptability and effectiveness of CM were the lowest among the four psychosocial interventions, and significantly lower than the means for CBT and for MI ($p < .001$).Mean ratings of acceptability and effectiveness for CRA were also significantly lower than those for CBT and MI ($p < .001$), although the differences between the two lowest mean ratings (between CM and CRA) were not statistically significant. In terms of acceptability, 44% of counselors gave the highest rating for CM, 63% chose the highest rating for CBT, 64% for MI, and 46% for CRA. Similarly, just 24% of counselors reported the highest effectiveness for CM, compared to 40% for CBT, 41% for MI, and 32% for CRA. There were no significant differences in the means between CBT and MI. Further, we did not find evidence of counselors consistently providing high or low ratings for all interventions. For example, just 9.5% of counselors provided the highest rating for all four interventions, 4% provided ratings of 4 or 5 on all approaches, and 0.2% provided the lowest rating for the four interventions. These results, provided in the larger context of several psychosocial interventions, supported the need to examine attitude formation process regarding CM.

Among the specific attitudinal measures toward CM, the highest rating was reported when the type of incentive was not specified (mean=4.44, SD=1.89, on a scale of 1–7). Counselors had less favorable attitudes toward tangible incentives that included paying clients for

attending treatment (mean 1.98, SD = 1.61), and earning prizes worth as much as $100 for abstinence (mean = 2.54, SD = 1.87, $p < .001$). In the measure about the role of unspecificed incentives on the relationship between the client and counselor, 10% of counselors chose the most negative response option and 14% chose the most positive response option. For the measure that specified the $100 incentive, just 5% of counselors chose the most positive response, while 41% chose the most negative response. Finally, only 3% of counselors stated they strongly agreed that it is okay to pay clients for attending treatment, while 57% of counselor strongly disagreed with doing so.

Turning to our other study measures, we found that around 43% of counselors worked in a program that reported using CM. On a scale of 1–7, the mean rating for CM-specific training was 4.58 (SD = 2.05). Just 10.1% of the sample accessed PAMI. Additional data revealed that counselors working in programs that used CM reported receiving more extensive CM-specific training than counselors working in programs that had not adopted CM (not shown, $p < .05$). Furthermore, 17.9% of counselors reported receiving extensive CM-specific training but had never accessed the PAMI product, while 3.4% of counselors reported both receiving extensive training and accessing PAMI (results not shown).

Almost half of the sample (47.6%) had earned a master's degree or higher, while 26.5% had earned a bachelor's degree. A total of 65.9% of counselors were female and the average number of years working in the behavioral health field was just under 9 years (mean = 8.83, SD = 7.74). The mode was 6 years, while the longest reported tenure was 40 years. Further, 76.3% of counselors were White non-Hispanic, 7.4% were Hispanic, and 9.8% were African American. Finally, 14.2% of counselors were employed in a for-profit organization and 13.4% worked in a hospital-based program.

3.2. Counselor acceptability of CM

OLS regression results measuring the acceptability of CM are presented in Table 2, columns 2–3. Exposure through the use of CM in the program in which a counselor was employed had a positive association with perceived CM acceptability ($p < .05$). CM-specific training was also positively associated with perceptions of acceptability ($p < .001$). Counselors who had received more extensive training on CM in their treatment programs had significantly more favorable attitudes toward CM. Counselors with a greater 12-step orientation were less likely to rate CM as acceptable ($p < .01$). Finally, adaptability was strongly associated with acceptability ($p < .001$). Counselors with higher scores on adaptability reported greater acceptability of CM. Access to PAMI was not significant and neither were the remaining counselor or organizational characteristics.

3.3. Perceived effectiveness of CM

OLS regression results examining counselors' perceived effectiveness of CM are presented in Table 2, columns 4–5. If counselors did not know enough about CM to rate its effectiveness, they were provided with the option of selecting “don't know” to the effectiveness question. Just over a fifth of counselors (21.6%) reported that they did not know enough about CM to be able to rate its effectiveness, so they were excluded from this analysis. As a result, a total of 573 counselors were included in the analysis on perceived

effectiveness. CM-specific training and access to the PAMI product were both positively associated with perceptions of effectiveness ($p < .001$ and $p < .05$, respectively). Whereas exposure through the use of CM in the treatment program in which the counselor was employed was positively associated with acceptability of CM, it was not significantly associated with perceptions of effectiveness. Similarly, even though a 12-step orientation was negatively associated with acceptability of CM, it was not significant in the model examining perceptions of CM's effectiveness. Finally, counselors with higher scores on adaptability reported a higher degree of perceived effectiveness of CM ($p < .001$).

Table 3 presents the results of the OLS regression models examining the three specific attitudinal measures.

3.4. Endorsement of unspecified incentives on the client–counselor relationship

The first model in Table 3 examines the measure regarding the effect of unspecified incentives on the relationship between a client and his/her counselor. As in the models on effectiveness and overall acceptability, training ($p < .001$) and adaptability ($p < .01$) were positively associated with viewing incentives as having a positive impact on the client–counselor relationship. Exposure via program use was also significant ($p < .001$). Female counselors were less likely to endorse this attitudinal measures ($p < .05$).

3.5. Endorsement of tangible incentives for treatment attendance

The second model in Table 3 examines the model for endorsement of paying clients for treatment attendance. Endorsement was significantly greater among counselors with higher levels of adaptability ($p < .01$), more years in the treatment field ($p < .001$), and counselors who held at least a Master's degree ($p < .05$). A 12-step orientation was negatively associated with endorsement of tangible incentives for attending treatment ($p < .01$).

3.6. Endorsement of tangible incentives for abstinence

The last model in Table 3 examines the model for endorsement of tangible incentives worth as much as $100 for abstinence. Counselors who were female ($p < .05$) and who had a greater 12-step treatment orientation ($p < .001$) were less likely to endorse tangible incentives for abstinence. Endorsement was significantly greater among counselors who worked in an organization that used CM($p < .05$) and among counselors with higher levels of adaptability ($p < .01$). Education was also positively associated with this attitude, yet it did not reach standard level significance ($p < .1$).

4. Discussion

In this study, we used a representative sample of SUD treatment programs in the United States to examine counselors' attitudes toward CM. We found that less than half (43%) of counselors reported working in a facility currently using CM. Placed in a different context, this suggests that many of the nation's treatment centers open to the general public may not be providing access to this EBP. Further, a fifth of counselors reported they did not know enough about CM to be able to express an opinion on its effectiveness in SUD treatment.

Consistent with past studies (e.g. Herbeck et al., 2008), we found that counselors rated CM as being less effective and acceptable than other psychosocial treatment approaches. Counselors had more negative reactions to tangible rewards, particularly in exchange for treatment attendance, compared to the statement about incentives having a positive effect on the client–counselor relationship, in which the incentive was not specified. Providing incentives for abstinence was also met with negative reactions. While our study did not examine social incentives, such as recognition ceremonies, future research should address attitudes and possible barriers to their adoption.

Consistent with past research (Kirby et al., 2012; McCarty et al., 2007) and with diffusion theory (Rogers, 2003), exposure to CM within one's employing organization was positively related to counselors' acceptability of CM and to endorsement of tangible incentives for abstinence. Nevertheless, program use of CM was not significantly associated with perceptions of effectiveness. More extensive CM-specific training was positively associated with perceived effectiveness, acceptability, and agreement that unspecified incentives have a positive effect on the client–counselor relationship. The association was net of whether the treatment program used CM, suggesting that training could play a role in influencing perceptions, even in treatment programs that have not yet adopted the practice. This finding is consistent with studies on attitudes toward the use of medication-assisted treatment (Abraham et al., 2011).

The extent of Web-based exposure to PAMI in this sample was relatively low, given the availability of this tool through the Addiction Treatment Technology Centers charged with aiding diffusion of research results generated by the CTN. Nonetheless, counselors who had accessed the PAMI product were more likely to report a higher degree of perceived effectiveness of CM than those who had not. Past research suggests that knowledge gained from sources external to the treatment program can play a vital role in the extent of use of EBPs (Herbeck et al., 2008). This is the first specific assessment of the use of PAMI in a national sample of SUD treatment programs. It appears that the use of PAMI and Web-based dissemination efforts could be making promising, albeit slow, progress toward the goal of dissemination of CM in programs not affiliated with the CTN. Since additional electronic products are now available (“Motivational Incentives: Positive Reinforcers to Enhance Successful Treatment [MI:PRESTO]” and “Motivational Incentives Implementation Software [MIIS]”), future studies may elucidate and specify the impacts of multiple Web-based educational strategies.

Implementing training programs in SUD treatment facilities can help to dissipate counselors' misconceptions regarding CM, and can more effectively promote the diffusion of CM into routine practice. For example, a recent study found that training was linked to an increase in adoption readiness among trained staff in an opioid treatment program, and to positive managerial perspectives of intervention cost, feasibility, and sustainability (Hartzler, Jackson, Jones, Beadnell, & Calsyn, 2014). Another recent article describing the implementation of CM in the Veterans Administration reported that trainers, clinicians, and patients considered the training and implementation to have a positive effect on attitudes and on treatment outcomes (Petry, DePhilippis, Rash, Drapkin, & McKay, 2014).

In terms of the type of training most likely to be effective, Benishek et al. (2010) found that a one-page primer detailing the empirical support for several interventions was effective in shifting providers' opinions in favor of EBPs, including CM. Nevertheless they also found that providers were less willing to implement CM compared to other approaches, including a 12-step approach, suggesting that a simple primer may not have as great an effect in actual adoption behavior. The authors also found that 41% of treatment providers believed EBPs could be implemented without specific training. This could be problematic for the fidelity with which an intervention is being utilized, a measurement that was beyond the data collection scope of the present study. Other research suggests that one-time workshops are not very effective in helping counselors adopt new treatment approaches (Miller, Sorensen, Selzer, & Brigham, 2006) and that the quality of training materials has an influence on adoption (Simpson & Flynn, 2007). Petry et al. (2014) highlighted the need for in-person trainings and for CM experts to oversee the design of CM initiatives, as they found that many providers strayed and used features that were not consistent with CM principles, even though a standard template was provided to them. Additional research comparing the impact of several different CM-specific training formats (e.g. Web-based, manual-only, day workshops etc.) on attitudes as well as on adoption behavior is warranted.

Beyond exposure, a 12-step philosophy was significantly, yet negatively, associated with acceptability and with the idea of providing tangible incentives for treatment attendance and abstinence. Concerns about the philosophy of CM, which could be at odds with that of other treatment approaches, have been identified in past studies (Kellogg et al., 2005; Rash et al., 2012; Willenbring et al., 2004). Nonetheless, a 12-step orientation was not significantly associated with perceived effectiveness of CM, suggesting that counselors with this orientation are less likely to believe that CM is an acceptable treatment, but not necessarily less likely to believe that it is an effective treatment for SUD.

Counselors' adaptability or openness to innovations was positively associated with CM attitudes. Adaptability is similar to the concept of adoption readiness highlighted in implementation research (Damschroder & Hagedorn, 2011; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004), suggesting that counselors high on adaptability are likely to be more open to learning about the effectiveness and acceptability of an EBP. These counselors could be targeted as change agents in the adoption process (Rogers, 2003).

Finally, highly educated counselors were more likely to be receptive to the idea of paying clients for attending treatment, a finding consistent with past studies (Kirby et al., 2012; McCarty et al., 2007). Counselors with more experience in the behavioral health field were also more likely to be receptive to tangible rewards. Female counselors, on the other hand, were less likely to agree with paying clients for abstinence or with the notion that incentives have a positive effect on the relationship between a client and his/her counselor.

4.1. Limitations

Several limitations of the current study should be noted. First, the data are self-reported by counselors and are subject to response bias. Although some counselors could have responded in a way that appears to be supportive of EBPs, our results indicate that counselors did not tend to routinely give high (or low) ratings for interventions. While

aggregate counselor data that were compared to data reported by program administrators did not significantly differ in terms of sociodemographic characteristics, we could not determine whether nonrespondents differed from respondents with regard to attitudes toward CM or other interventions. Second, the nature of the cross-sectional data limits our ability to determine causality. Our measure of training reported by the counselors did not address the format and duration of the training received. Finally, as discussed in the methods section, our sampling frame excluded counselors working in programs not open to the general public, such as Veterans Health Administration facilities and correctional facilities.

4.2. Conclusion

The effectiveness of SUD treatment will be enhanced by the breadth of the menu of treatment offerings that are offered by providers, assuming appropriate fidelity to the design of these interventions. Given the barriers to CM adoption, identifying predictors of positive CM attitudes among counselors can help diffuse CM into routine clinical practice. Exposure is important in ensuring proper delivery of such treatment (Glasner-Edwards & Rawson, 2010), and training could help decrease the reluctance of paying individuals for treatment attendance or abstinence. More research is needed to examine why the diffusion and adoption of CM has remained low over the past several decades. Although the cost of implementing CM is a barrier to its use (Benishek et al., 2010; Kirby et al., 2006; Petry & Simcic, 2002; Rash et al., 2012; Walker et al., 2010), programs could provide increased privileges as incentives at little cost (Kirby, Amass, & McLellan, 1999; Petry et al., 2000). Future research should focus upon differential effectiveness of different educational strategies, consider the attitudes of patients themselves, and explore the orientations toward practices such as CM among third-party payers.

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Table 1

Descriptive statistics of counselor characteristics and attitudes (N = 731).

	%or *M*	**(*n*)or (SD)**	***T*-test results**
Perceived acceptability			
Contingency management (CM)	**5.82**	**(1.40)**	
Cognitive behavioral therapy	6.37	(1.08)	***
Motivational interviewing	6.40	(0.99)	***
Community reinforcement approach	5.83	(1.41)	
Perceived effectiveness			
Contingency management	**5.39**	**(1.41)**	
Cognitive behavioral therapy	5.99	(1.10)	***
Motivational interviewing	6.03	(1.12)	***
Community reinforcement approach	5.53	(1.38)	
Incentives have a positive effect on the client/counselor relationship	4.44	(1.89)	
It is okay to pay clients for attending treatment	1.98	(1.61)	
It is okay for client to have the opportunity to earn prizes worth as much as $100 for abstinence	2.54	(1.87)	
Employed in program that uses CM	43.1%	(315)	
CM-specific training	4.58	(2.05)	
Accessed the blending product PAMI	10.1%	(74)	
12-Step orientation	4.06	(1.74)	
Adaptability	5.43	(1.12)	
Master's degree or higher	47.6%	(348)	
Tenure	8.83	(7.74)	
Female	65.9%	(482)	
White non-Hispanic	76.3%	(558)	
Organization size (logged)	3.22	(1.18)	
For-profit program	14.2%	(104)	
Hospital-based program	13.4%	(98)	

*** $p < .001$ (t-tests comparing means between CM and other psychosocial approaches).

Table 2

Ordinary least squares regression results examining perceived acceptability and effectiveness of contingency management (CM).

	CM acceptability		CM effectiveness	
	b	**(SE)**	***b***	**(SE)**
Employed in program that uses CM	0.20	(0.09)*	0.02	(0.10)
CM-specific training	0.23	(0.03)***	0.25	(0.03)***
Accessed the blending product PAMI	−0.12	(0.17)	0.33	(0.16)*
12-step orientation	−0.09	(0.03)**	0.02	(0.03)
Adaptability	0.21	(0.05)***	0.25	(0.06)***
Master's degree or higher	0.12	(0.10)	0.03	(0.10)
Tenure	−0.01	(0.01)	−0.01	(0.01)
Female	0.08	(0.11)	0.03	(0.11)
White non-Hispanic	−0.11	(0.10)	−0.19	(0.12)
Organization size (logged)	−0.02	(0.04)	−0.01	(0.04)
For-profit program	−0.01	(0.15)	−0.20	(0.15)
Hospital-based program	0.20	(0.13)	−0.20	(0.13)

* p<.05;

** p<.01;

*** p<.001.

Table 3

Ordinary least squares regression results examining specific attitudes toward contingency management (CM).

	Incentives have a positive effect on the client/counselor relationship		It is okay to pay clients for attending treatment		It is okay for client to have the opportunity to earn prizes worth as much as $100 for abstinence	
	b	**(SE)**	***b***	**(SE)**	***b***	**(SE)**
Employed in program that uses CM	0.60	(0.15)***	0.12	(0.13)	0.34	(0.16)*
CM-specific training	0.18	(0.04)***	0.04	(0.03)	0.06	(0.04)
Accessed the blending product PAMI	−0.07	(0.25)	0.03	(0.20)	0.01	(0.25)
12-Step orientation	−0.03	(0.05)	−0.14	(0.04)**	−0.17	(0.05)***
Adaptability	0.27	(0.08)**	0.13	(0.05)**	0.21	(0.07)**
Master's degree or higher	0.11	(0.14)	0.28	(0.13)*	0.28	(0.14)
Tenure	−0.01	(0.01)	0.03	(0.01)***	0.01	(0.01)
Female	−0.28	(0.14)*	−0.17	(0.12)	−0.31	(0.15)*
White non-Hispanic	−0.15	(0.18)	−0.09	(0.15)	0.11	(0.17)
Organization size (logged)	−0.08	(0.05)	−0.01	(0.05)	0.08	(0.06)
For-profit program	−0.26	(0.23)	−0.18	(0.20)	0.13	(0.20)
Hospital-based program	0.15	(0.21)	0.17	(0.21)	0.10	(0.20)

*$p < .05$.

**$p < .01$.

***$p < .001$.