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The Influence of Monetary Compensation on Relapse among Addicted Participants: Empirical vs. Anecdotal Evidence

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Abstract

Although common, the use of cash incentives to compensate drug-addicted participants is controversial. This is particularly true given concerns that cash incentives might precipitate relapse, as is commonly believed. The following investigation examined whether cash versus money order compensation differentially influenced drug use among 34 non-treatment-seeking, cocaine-dependent individuals. Consistent with past evidence, results did not suggest that form of compensation was associated with likelihood of continued cocaine use or dollar amount of cocaine consumed after participation. Findings do not support commonly held concerns that cash incentives increase the risk of relapse following research participation.

INTRODUCTION

The success of clinical research is heavily dependent upon the success of participant recruitment. The ability to recruit an adequate number of participants can be one of the most challenging aspects of clinical research. During the past century, research participants have typically received monetary compensation for their time and effort.¹ Although common, participant reimbursement is not without controversy. One ethical concern has been that the dollar amount may be at a level high enough that the individual is unduly coerced to participate. Despite this concern, there is no standardization in terms of what constitutes a “high” magnitude incentive.^{1–3} There are also specific population concerns, such as with the substance-dependent research participants. That is, does cash compensation increase risk of relapse?

In an attempt to minimize potential negative consequences of cash compensation, participants often receive a modest amount of financial compensation or are given non-cash forms of payment (eg, gift certificates, money orders). Some non-cash forms of compensation, however, can easily be redeemed for their cash value, bringing into question their “protective” value. Further, ascertaining these non-cash compensation items consumes significant research staff time and resources. Clearly, empirical data on the effects of monetary compensation among substance-dependent participants is needed to help guide future research. The potential “harm” from providing cash compensation is clearly a concern, not only among treatment providers, but also researchers and associated institutions.^{4–5} This concern is present despite a lack of scientific evidence linking cash reimbursement to increased risk of relapse. In fact, what little

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evidence does exist on this topic suggests that cash reimbursement does *not* increase risk of relapse, but *does* increase research participation without skewing perception of the study's risk.^{3,6,7} This is particularly notable given the high rate of drop out and no-shows that often plague outpatient addiction studies.

The present investigation attempts to contribute to this ongoing debate and add to the field of addiction research, assessing empirical data on the relationship cash compensation and relapse. Differential effects of cash vs. money order compensation were explored among cocaine-dependent, non-treatment-seeking individuals. Money orders were used, as they serve as a generic one-step barrier to cash. While various gift cards are often used in research, some of them can easily be redeemed for their cash value (eg, purchase item with gift card and return for cash, selling gift card to friend). Several facets of cocaine use were analyzed subsequent to participation in an inpatient research study. Participants were compensated with either cash or a money order in the amount of \$150 to \$300 at the time of discharge, and cocaine use was assessed up to one month following discharge.

METHOD

Participants

Participants were 34 individuals who met criteria for current cocaine dependence.⁸ They were part of a larger, non-treatment study examining the relationship between stress reactivity, HPA axis functioning, and cocaine dependence. Exclusion criteria included psychiatric conditions known to affect HPA axis functioning, pregnancy, obesity, or other major medical disorders that could affect the HPA axis. Participants were recruited via newspaper and other media advertisements. The study was approved by the Medical University of South Carolina (MUSC) Institutional Review Board (IRB).

Procedures

Following baseline assessment, eligible participants were scheduled for two consecutive overnight stays at the MUSC hospital. During this two-day stay, three laboratory stress tasks were conducted: the Trier Social Stress Task,⁹ a pharmacologic challenge (administration of corticotrophin releasing hormone), and a cocaine cue exposure (paraphernalia and video depicting cocaine use). In order to control extraneous variables that may affect stress reactivity (eg, nutrition, caffeine, sleep), participants were admitted to the hospital at approximately 2000h the evening prior to the first day of testing. After the second day of testing, participants were discharged at approximately 1600h and received \$150 to \$300 compensation (determined by amount of participation over the five-year course of the study). Compensation was provided in a money order unless participants were without a valid driver's license, bank account, or laboratory staff were unable to ascertain a money order on discharge day. In all, 19 participants received money orders and 15 received cash upon discharge from the study.

Measures

The Structured Clinical Interview for DSM-IV¹⁰ was used to diagnose cocaine dependence. The Time-Line Follow-Back (TLFB)¹¹ was used to assess the dollar value and frequency of cocaine use during the one month before and after the study. Variables generated from the TLFB include the percent days using and the average dollar value used per day.

Statistical Methods

One-way analyses of variance (ANOVA) and paired-sample *t*-tests were used to analyze continuous variables. Categorical variables were assessed using chi-squared analyses (χ^2). Degrees of freedom varied slightly across analyses, due to participant non-response or lack of

participation at follow-up. For this initial exploratory investigation, family-wise error variance was used, and alpha was set to .05.

RESULTS

Demographics

The majority of participants were female (61.8%) with an average age of 40.1 years ($SD = 12.1$). Approximately half were Caucasian (47.1%), African American (52.9%), and employed (48.5%). Forty-one percent were single, 13% married, and 46% divorced or separated. There were no significant between-group differences in demographic characteristics ($p > .10$).

Pre-Study

Examination of the frequency (ie, percent day used) of cocaine use during the month prior to study entry revealed that participants used cocaine 39.2% ($SD = 27.0\%$) of the days, with no compensation-type group differences [money order group = 42.4% vs. cash group = 34.7%; $F(1,32) = 0.69, p = .41$]. Examination of the average amount spent on cocaine per day in the month prior to study entry revealed no significant differences [money order group = \$20.42 ($SD = \17.59) vs. cash group = \$34.46 ($SD = \50.94); $F(1, 32) = 1.26, p = .27$].

Post-Study

Following discharge from the study, participants' substance use was assessed for approximately one month. Overall, the percent days using cocaine was 23.0% ($SD = 23.4\%$). This was significantly less than the percent days using during the month prior to study entry (39.0%), paired- $t(29) = 2.36, p = .03$. No significant group differences were found for percent days using post-study [money order group = 24.9% ($SD = 27.9\%$) vs. cash group = 20.6% ($SD = 16.8\%$); $F(1, 28) = .24, p = .63$].

For the sample as a whole, the average dollar amount of cocaine used per day also significantly decreased from pre-to post-study participation [$t(29) = 2.71, p = .01$]. No significant difference was found in the dollar amount used per day during the month following the study [money order group = \$8.36 ($SD = \11.23) vs. cash group = \$11.10 ($SD = \12.30); $F(1, 28) = .404, p = .53$].

Of great importance to the current investigation, the likelihood that a participant used cocaine *the day of* discharge from the hospital revealed no significant group differences, Pearson $\chi^2(1) = .607, p = .44$. Overall, 20.6% of the sample reportedly used cocaine the day they were discharged, with 8.8% of the money order group and 11.8% of the cash group reporting use. For those participants who used cocaine on the day of discharge, the dollar value of cocaine used did not differ by group [money order group = \$8.42 ($SD = \20.07) vs. cash group = \$11.67 ($SD = \22.01); $F(1, 32) = .201, p = .66$].

Examination of the likelihood that a participant used cocaine *the day after* discharge also showed no group differences, Pearson $\chi^2(1) = 0.01, p = .94$. Specifically, 27.3% of the sample reportedly used cocaine on the day after discharge, 27.8% for the money order group and 26.7% for the cash group. Compensation groups did not differ in the dollar value of cocaine used the day after discharge [money order group = \$8.33 ($SD = \16.54) vs. cash group = \$15.33 ($SD = \30.44); $F(1, 32) = .705, p = .41$].

Amount of Compensation

Participants received \$150 to \$300 for their participation. Bivariate correlations were used to examine the relationship between the amount of compensation paid and the dollar value of cocaine used the *day of* discharge and the *day after* discharge; the findings were not significant

[$r(34) = .11, p = .54$; $r(33) = .06, p = .74$, respectively]. Tests of these same relationships were run using partial correlation analyses controlling for compensation type, and again no significant relationships were observed [$r(30) = .09, p = .62$; $r(30) = .06, p = .74$, respectively].

DISCUSSION

The current investigation builds on previous research by examining whether the method and amount of monetary compensation influences drug use following study participation. The findings did not support the commonly held belief that cash compensation may be deleterious to the sobriety of substance-dependent research participants. The form of compensation (eg, cash or money order) was not significantly associated with increased cocaine use following discharge. In fact, the sample as a whole significantly decreased cocaine use (both frequency and amount) from pre- to post-participation in the study, despite the fact that it was a non-treatment, laboratory study.

The present findings call into question the validity of the commonly held belief that compensating substance-dependent participants with cash is detrimental to their sobriety.^{4,5} While some Institutional Review Boards encourage or mandate the use of non-cash incentives, the findings from the current and previous investigations do not support that concern. In fact, empirical evidence suggests cash reimbursement does not significantly increase the risk of relapse or alter participants' perception of the risk involved in participation, but it does increase attendance and research participation.^{3,6,7} Further, this supports participant self-report that cash compensation does not encourage further substance use.¹²

It is unclear as to why empirical evidence has yet to overturn practice based on inaccurate anecdotal evidence. However, this may have implications for treatment in addition to research. In contingency management addiction treatment, cash rewards increase cessation rates.¹³ Further, not only do patients prefer cash rewards,¹⁴ but the majority of cash is reportedly spent on daily living expenses.^{4,15} Thus, it is an inconvenience for researchers (and their study participants) who are mandated to use non-cash incentives, and in some cases it may negatively affect treatment success.

Several limitations warrant consideration. Participants in the current investigation were not randomly assigned to receive money orders or cash. However, the determining factors related to compensation type reflect what typically occurs in real-world research practice and, therefore, may provide more clinically valid data. The sample size is small, and replication with larger samples is needed. However, the results are consistent with previous investigations.^{3,7} The particular method of investigation should also be considered, as other commonly used components in addictions research may influence results (eg, ongoing counseling, payment schedule, length of study). Finally, the assessment of cocaine use was based on self-report and may be subject to bias. Nevertheless, the current investigation addresses an important issue that applies to nearly all clinical research studies, particularly addiction research and research with other "hard to reach" populations, in which participant recruitment and retention constitutes a large portion of the research staff's efforts.

In summary, the findings from this investigation confirm previous findings demonstrating that the form of monetary compensation received (ie, cash or money order) is not associated with increased risk of drug use following research participation. Additional empirical studies with larger samples are needed to help confirm the findings and guide future participant compensation practices. In particular, it would be helpful to identify predictors of relapse with cash compensation. Furthermore, additional studies are needed to help promote the empirical evidence that cash reimbursement is likely to be helpful and unlikely to be detrimental in addiction research and treatment.

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