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The Check Effect Reconsidered

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Abstract

Aims—The "check effect" refers to the use of disability payments to purchase illegal drugs or alcohol. This article describes subsequent research concerning three interrelated issues: the check effect, whether receipt of disability payments is associated with more overall substance use, and potential policy responses to misuse of disability payments for substances.

Methods—Review and synthesis of published articles.

Results—Increased substance use at the beginning of the month has been described in a variety of settings. The tendency to purchase substances at the beginning of the month is impacted by household wealth, the tendency to discount future rewards, and cyclical economic activity. However, in naturalistic observational cohort studies, beneficiaries who receive disability payments had no greater substance use than those without disability payments. Potential policy responses to misspending of disability checks include financial counseling that discourages spending on drugs, and the assignment of a representative payee to prevent misuse of benefits for substances. Assignment of a representative payee *per se* has not been associated with reduced substance use but payeeship administered by agencies that integrate payee practice into treatment has been.

Conclusion—Disability payments impact the timing of substance use, but receipt of disability payments is not associated with more overall substance use than unalleviated poverty. Money management-based clinical interventions, which may involve assignment of a representative payee, can minimize the purchase of substances with disability payments.

In a 1995 article in the New England Journal of Medicine, Andrew Shaner and colleagues described a cohort of veterans whose cocaine use and psychiatric symptomatology peaked the first week of the month (1). The cycle of substance use early in the month came to be known as the "check effect" because it was surmised that the veterans were spending their monthly disability checks to purchase cocaine. An accompanying editorial by Sally Satel was titled, "When disability benefits make patients sicker" (2). The editorial referred to the "social iatrogenesis" of disability-funded substance use, implying a causal link between disability payments and substance use. Dr. Satel recommended more assignment of payees to beneficiaries who misspent Social Security or Veterans Administration disability benefits to purchase drugs of abuse.

Since 1995, the relationship between disability payments and substance use has been subject to extensive research. This research has modified our initial understanding of the misspending of disability benefits to purchase drugs and the feasibility of addressing this problem by simply assigning representative payees to disability recipients. This review will describe first, follow-up studies concerning the extent and generalizability of the check effect and second, the literature concerning whether disability payments precipitate

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substance use. Then, potential policy approaches to mitigate the misspending of disability payments on illicit drugs will be outlined.

METHODS

Selection of articles for this review occurred in a two-step process. First, the author selected articles for this review from his prior work in this field. Second, to check that the author's referencing for this article had not been selective, source articles were identified in a structured way. The key word "check effect" was searched in the OVID Medline and Psych Info databases, yielding three relevant articles. Articles that had either cited these three articles (n=4), or the seminal New England of Journal Medicine papers (1,3) (n=10) were identified. The search strategy to identify research concerning the relationship between disability payments and substance use was to identify articles with any of several keywords related to disability payment (SSI, SSDI, disability payments, Supplemental Security Income, Social Security Disability Insurance) AND (substance abuse). This strategy identified an additional eight relevant articles. Five of the twenty-five relevant articles were not included in the review, three that had methodological limitations and two that overlapped other cited studies.

RESULTS

Substance Use at the Beginning of the Month

Among people with a history of substance use, cash is a frequent antecedent (4) and cue (5) to relapse. The finding of more substance abuse and comorbidity around the beginning of the month has been replicated in several other populations: among veterans using emergency room services (6), people using public psychiatric emergency rooms (7,8,9), people hospitalized for substance abuse treatment (10) and pregnant women receiving welfare payments (11). Originally described in people who use cocaine, the effect has been described among people using primarily alcohol (12); the relative increase in deaths at the beginning of the month is roughly equivalent for deaths related to drugs and deaths related to alcohol (3).

Other studies have demonstrated a temporal link between receipt of funds and discontinuing substance abuse treatment. Patients on a methadone maintenance program who had received initial Social Security payments attended significantly fewer methadone clinic appointments after receiving the payments than they had before receiving them (13). Patients in residential substance abuse treatment who received large lump sum payments, mostly accumulated payments from pending disability claims, were more likely than control patients to leave treatment after receiving the payments (14).

Other Expenditures at the Beginning of the Month

Among people who are poor, the monthly check cycles impact spending on things other than drugs. Households participating in the United Kingdom's Family Expenditures Survey reported spending approximately 14% more money when their paycheck arrived at the beginning of the month than in the weeks after it arrived (15). This spending cycle was not accounted for by monthly bills. Interestingly, the effect was concentrated among households that had limited cash—wealthy households showed much less pronounced cyclical spending.

The pattern of spending when funds are received early in the month extends to buying and consuming food. Food stamp recipients consume more calories immediately after check receipt than later in the month (16). The monthly cycles of calorie consumption were more marked among recipients whose choice in a hypothetical situation was for an immediate lower payment instead of a larger cash payment four weeks later (16). It is noteworthy that

this preference for a smaller immediate reward to a larger reward, a phenomenon known as delay discounting (17), has been shown to be more pronounced in people using a variety of substances of abuse than in controls (18,19), as well as being more pronounced in people prone to beginning-of-the-month purchases. The check effect was initially understood to reflect classical conditioning in which check receipt came to be a cue that was associated with drug use. An alternative explanation is that the check effect reflects delay discounting of future rewards (15).

Monthly Cyclicity in Large Population Studies

Studies with statewide and nationwide databases indicate monthly cycles of substance use at the population level. In a study of patients admitted to California hospitals over a six year period, admissions increased approximately 23% for the first five days of the month, an increase that was largely accounted for by recipients of Social Security disability payments (20). The effect was much weaker among people who did not receive disability payments.

A review of death certificates in the entire U.S. population described one percent more deaths in the first week of the month than during the preceding week across the entire American population when the death certificate indicated natural causes and no substance abuse problem (3). However, when the death certificate indicated a cause related to substance abuse, there were five percent more deaths related to substance abuse during the first week of the month than in the preceding week. Deaths related to substance abuse from external causes such as motor vehicle accidents were a remarkable 14% more likely to occur during the first week of the month.

The substantial increase in substance abuse-related deaths at the beginning of the month in the entire United States cannot plausibly be explained by receipt of Social Security disability benefits because the great majority of the population do not receive disability payments. One explanation for the nationwide data is that income other than disability benefits is spent at the beginning of each month to purchase drugs or alcohol (7). It is also possible that stresses unrelated to drug use that occur at the beginning of the month, such as the need to pay rent, contribute to increased mortality at the beginning of the month (21,22). Finally, the tendency for more economic activity at the beginning of the month may contribute to the increased mortality via substance abuse or other routes.

Taken together, the cited studies provide convincing evidence that there is a population of people for whom there is a true check effect, in that they receive disability payments and use more illicit drugs and alcohol at the beginning of the month. However, findings of substance use and morbidity at the beginning of the month in population studies are not entirely accounted for by indigent people and those receiving disability checks.

Do disability payments cause substance use? Or just alter the timing?

Patients cannot be prospectively randomized to receive or not receive disability benefits, but cross-sectional and longitudinal analyses have addressed the question of whether disability payments increase overall substance use. A cross-sectional analysis of 2474 veterans assessed in an outreach program found no greater substance use among those receiving disability payments than among those not receiving them (23). A much smaller study of veterans suggested that higher levels of non-disability income, but not disability income, were associated with more substance use (23,24).

Two longitudinal quasi-experimental studies (25,26) and a smaller study in veterans (27) suggested that disability benefits do not substantially increase overall substance use and that disability benefits are associated with salutary effects such as improved housing. One of the analyses in which cash payments did not precipitate substance use was conducted by our

group (25). In this multi-site observational cohort study, 1204 homeless mentally ill people who newly acquired Social Security disability benefits showed no spike or even measurable subsequent increase in their substance use compared to people (n=3259) who did not receive Social Security benefits. Although there was no spike in substance use among people who newly acquired Social Security disability benefits, people who had longstanding Social Security benefits that antedated the study used slightly more drugs over time than people not receiving disability. All the participants in this longitudinal study were offered Assertive Community Treatment, and it is possible that treatment minimized misspending of funds for substances.

The type of disability benefits received and whether the benefits are paired with effective treatment also appear to impact whether financial payments affect substance use. Several studies have shown that patients offered cash equivalents in the form of housing vouchers (28) do not appear to increase their substance use and such funds may even be associated with reduced substance use (29). Even direct cash payments, in a structured setting, do not consistently trigger substance use among recovering addicts. In a study evaluating whether people who abuse illicit drugs are at risk for relapse when paid for research study participation, entrants into an intensive outpatient treatment program were assigned to receive payments between $70 and $160 on each of eight payment days (30). Participants submitted toxicology tests three days after each payment day to determine if participants given larger payments were more likely to submit a positive toxicology screen---they were not.

Other findings in which disability payments were *not* associated with substance use were obtained in a multivariate analysis of data from 740 people who had *lost* disability benefits when the Social Security disability program for substance users was discontinued. Addicts who went on to re-enroll on Social Security had no more substance abuse than those who remained without benefits (26). Other studies of people whose benefits were discontinued also suggested that benefits were associated with no more substance use than unalleviated poverty (31-34).

Overall, the data do not suggest that awarding poor people disability benefits causes them to use substantially more drugs or alcohol. Rather, the check effect more likely represents a shift in the timing of substance use. The one study (25) suggesting marginally more substance use among people with disability benefits enrolled arguably the highest risk group (homeless people with severe mental illness), and other studies in a wide variety of settings showed no more substance use among beneficiaries than among those without benefits.

Policy Responses to Spending Disability Money to Purchase Drugs

Even if disability payments do not increase the overall likelihood of substance use, the fact that some disability recipients spend a large proportion of their limited income on drugs and alcohol is troubling. The average disabled veteran in the 1995 article describing the check effect was spending 38% of his total income to purchase illegal drugs (1), and people with limited incomes who purchase drugs with their money are at high risk of losing their housing. Several studies suggest that relapse to substance use is the most important individual-level factor accounting for housed people with psychiatric illness becoming homeless (35,36). Several potential approaches to minimize the use of disability payments for substances are reviewed below, starting with the least invasive interventions.

Varying the Timing of Disability Payments—It is likely that varying the timing of disability disbursements would have the benefit of less concentrated harm and use of hospital resources at the beginning of the month. In a naturalistic experiment in which check disbursement was delayed and spread out over a ten day period in some locales, the increase

in hospitalizations early in the month was correspondingly delayed (20). However, altering the receipt of benefit checks might have the unintended consequence of making it more difficult for beneficiaries to maintain their savings until the monthly rent bill is paid.

Informal Money Management Arrangements—One approach to preventing beneficiaries from buying drugs and alcohol is to have someone informally manages clients' money. The rates of such informal money management arrangements were 11.1% in a survey of outpatients (37) and 31% among hospitalized inpatients at a CMHC in another survey (38). However, there is no evidence that such arrangements are helpful. Among the inpatients, patients with non-payee third parties managing their funds were eight times more likely than those with payees to report not having had enough money for housing. The authors speculated that informal arrangements might expose vulnerable clients to greater risk than formal money management arrangements because informal money managers receive no instruction, maintain no documentation, and are not accountable to any outside agency. Indigent beneficiaries are frequently victimized by people who pressure them for loans or simply take their money (39), victimization that may not be prevented without more forceful intervention.

Advisor-Teller Money Manager (ATM)—A substance abuse treatment based on managing beneficiaries' funds called Advisor Teller Money Manager (ATM), has shown promise in two clinical trials. ATM is a *voluntary* payee-type arrangement in which a money manager stores patients' funds and works with patients to make budgets so that they will budget their money for planned non-drug expenditures. Such budgets can alter spending behavior. There is considerable evidence from Behavioral Economics that although money is fungible from one account to another, human beings' mental accounting considers money as existing in separate mental accounts, and people resist overspending in a particular mental account (40,41).

A low intensity version of ATM in which checkbooks, not patient funds, were stored was tested in a randomized clinical trial among 85 veterans with recent substance use. ATM was well-accepted; three-quarters of veterans assigned to ATM at some point voluntarily turned a checkbook or ATM card over to the study therapist to store. Although rates of abstinence from cocaine were over 90% in both ATM and control groups and did not differ, ASI-rated drug use severity was significantly lower over time among ATM participants than controls (42). In a second clinical trial among 90 patients at a CMHC, 46% of patients assigned to ATM gave the money manager funds to store and an additional 35% gave the money manager their checkbook to store (63). Participants assigned to ATM used significantly less cocaine over time than those in the control group. Evidence that ATM fosters the more general ability to plan and value future rewards is the finding that over time, ATM participants were more likely to prefer a larger delayed reward to a smaller, immediate one (43) in a forced choice exercise (44).

Assigning a Representative Payee to Prevent Substance Abuse—SSA mandates the assignment of a payee to beneficiaries who are "mentally incapable of managing benefit payments." The assignment of a payee based on substance use is problematic because an addict's incapacity may resolve when the addict is abstinent. Nevertheless, the assignment of a payee when clients are harmed by spending for drugs is consistent with the legislative history of assigning payees to addicts receiving disability payments based on a substance abuse disorder, payee assignment statutes in the Federal Register, and state statutes that consider substance abuse a mental disorder for the purpose of determining competency (45). Clinical guidelines for who needs a payee, developed by discussing payee assignment with a focus group of case managers and reviewing the results with an expert panel, identified substance abuse as one reason payee assignment would be indicated (46). The substance

abuse rationale for payee assignment was also given by other groups of case managers for referral to payee programs (47). In two multi-site studies, substance abuse was associated with assignment of representative payees (48,49).

Despite substance use being one criterion for assigning a payee, it has been noted that payeeship has not been mandated for many SSA beneficiaries with comorbid substance abuse disorders (50) and in practice, payee assignment is inconsistently applied (48,51,52). In one study of veterans hospitalized on inpatient psychiatry units, 13% met criteria for being assigned a representative payee, primarily based on substance use, but had not been assigned one (53). In fact, 11% of veterans who did not have a payee were identified by their clinicians as needing one, and those identified as needing a representative payee were those with more severe substance abuse problems (54).

Assignment of a representative payee to prevent substance abuse is predicated on the assumption that the payee is going to reduce the substance abuse or the associated morbidity. However, the two largest naturalistic observational cohort studies did not shown any effects of payee assignment on substance abuse or any other clinical outcome (26,48). The only identified benefit from payeeship was that Social Security recipients newly assigned representative payees made more use of psychiatric services than those not assigned new payees (48). These negative findings may be explained by the fact that a payee's specific charge is limited to establishing a separate account for the beneficiary's check, seeing that the beneficiary's rent is paid, and making a financial report to the Social Security Administration. Beyond these basic fiduciary duties, a representative payee's responsibilities are loosely defined, and some payees fulfill their fiduciary responsibilities with only minimal contact with their clients (55). The lack of efficacy is concerning because payeeship is not without its drawbacks. Patients assigned representative payees lose the autonomy to manage their own funds, and typically feel coerced to accept a payee arrangement (56). Beneficiaries often become angry at their payees, and may even assault them (57,58).

Assignment of Representative Payees Based at Treatment Agencies—

Programs in which CMHCs (community mental health centers) serve as representative payees *have* generated promising results, with findings that such programs reduce hospitalizations (47), foster adherence to outpatient treatment (59) and appear to reduce the purchase of substances of abuse. Our group and others have described high proportions of patients participating in payee programs who report that program participation reduced their substance use (60,61). CMHC-based representative payee programs typically involve coordination between the treating clinicians and the money managers (50).

There has only been one randomized controlled trial of payee assignment. In that study, veterans at two VA centers who all had been determined to need a payee were randomly assigned to referral to community-based agency that provided payee services or to treatment-as-usual in which the recommended payee assignment was rarely implemented (62). Beneficiaries assigned to the payee intervention used substances on fewer months and rated their money management and quality of life as better than beneficiaries in the control group. They also were more likely to maintain treatment with a clinician throughout the 12-month study. A limitation of the study's generalizability is that the active intervention included referral to extensive case management services in addition to payee assignment, making it impossible to disentangle the effects of the payee and the case management components.

In summary, the proposal made years ago to aggressively assign representative payees to beneficiaries who spend disability payments to use drugs is consistent with legal statutes and

has been partially incorporated into clinical practice. This practice is justified when patients are assigned to *agency-based* payee programs, in that data suggest that such programs are associated with less substance use. Payee assignment *per se* has been associated with more attendance at psychiatric treatment but not with reduced substance use.

Conclusion

People vulnerable to substance abuse are more likely to use drugs and/or alcohol around the time they receive funds, especially people whose expenditures are limited by poverty. While check receipt often alters the timing of substance abuse, receipt of disability checks does not *cause* substance abuse. Receipt of disability checks is not associated with substantially more substance use than unabated poverty. Clinicians have recourse, when treating patients who spend their disability checks to purchase drugs, to several options. A voluntary intervention that integrates budgeting advice and substance abuse treatment, ATM, has shown promise as an alternative approach to prevent misspending of benefit payments for substances of abuse. Published clinical guidelines justify clinicians recommending that a beneficiary be assigned a representative payee if a substance abuse problem renders the beneficiary incapable of managing disability funds. However, mere assignment of a representative payee is not an effective intervention. Only representative payee programs associated with treatment agencies have been associated with reduced substance use and other clinical benefits in controlled studies.

Beneficiaries are harmed when funds are misspent on drugs that could be used to improve quality of life. The fact that some disability income is misspent undermines public support for vital programs that provide for disabled people. Fortunately, there are a range of interventions to address the substance abuse that are feasible and often effective.

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