

Offering Financial Incentives to Increase Adherence to Antipsychotic Medication

The Clinician Experience

Elizabeth Highton-Williamson, BSc,*† Kirsten Barnicot, PhD,*‡ Tarrannum Kareem, MD,* and Stefan Priebe, Dr med habil, Dipl-Psych, FRCPsych*

Abstract: Financial incentives for medication adherence in patients with psychotic disorders are controversial. It is not yet known whether fears expressed by clinicians are borne out in reality. We aimed to explore community mental health clinicians' experiences of the consequences of giving patients with psychotic disorders a financial incentive to take their depot medication. We implemented descriptive and thematic analyses of semistructured interviews with the clinicians of patients assigned to receive incentives within a randomized controlled trial. Fifty-nine clinicians were interviewed with regard to the effect of the incentives on 73 of the 78 patients allocated to receive incentives in the trial. Most commonly, the clinicians reported benefits for clinical management including improved adherence, contact, patient monitoring, communication, and trust ($n = 52$). Positive effects on symptoms, insight, or social functioning were reported for some ($n = 33$). Less commonly, problems for patient management were reported ($n = 19$) such as monetarization of the therapeutic relationship or negative consequences for the patient ($n = 15$) such as increased drug and alcohol use. Where requests for increased money occurred, they were rapidly resolved. It seems that, in most cases, the clinicians found that using incentives led to benefits for patient management and for patient health. However, in 33% of cases, some adverse effects were reported. It remains unclear whether certain clinical characteristics are associated with increased risk for adverse effects of financial incentives. The likelihood of benefit versus the smaller risk for adverse effects should be weighed up when deciding whether to offer incentives to individual patients.

Key Words: schizophrenia, antipsychotics, medication adherence, incentives

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Poor adherence to antipsychotic medication is a common issue in the treatment of patients with psychotic disorders^{1–5} that can lead to an increased risk for relapse, hospitalizations, and suicide attempts.⁶ Among others, longer duration of illness,² prevalence of positive symptoms,⁷ medication side effects, or lack of insight have shown to be predictors of poorer medication adherence.^{2,7} In cases of poor adherence, antipsychotic medication may be prescribed as a depot injection, rather than oral medication, with the rationale that the lower frequency of administration (once every 1–6 weeks as opposed to once daily) together with the increased level of medication oversight (the injection must be administered by a nurse rather than relying on patients to remember

to take a pill themselves) would increase adherence.⁸ However, nonadherence remains a substantial problem among those prescribed with depot medication.⁹ A cluster randomized controlled trial (RCT) financial incentives for adherence to treatment (FIAT) was conducted, investigating whether offering financial incentives to patients with a psychotic disorder would affect their adherence to antipsychotic depot medication.¹⁰ The trial recruited patients who received 75% or less of their prescribed depot injections in the 4 months before screening. Adherence to treatment significantly increased in the intervention group (who received a modest financial incentive of £15 for every depot received during a 12-month period) compared with the control group. There were no significant differences in clinician-rated clinical improvements between the 2 groups, but a favorable subjective quality of life was identified in the intervention group. The FIAT trial identified that offering modest financial incentives can be effective in increasing adherence to medication in patients with psychotic disorders.¹⁰

However, the use of financial incentives to improve adherence to antipsychotic medication is considered controversial by many. Although some have made the argument that financial incentives can be viewed as a type of reinforcement^{11,12} and far less coercive than involuntary hospital admission,¹¹ others have expressed concerns about the negative implications of offering financial incentives.^{12–15} Focus groups¹⁶ have helped identify the major concerns of clinicians and other stakeholders. The concerns included whether financial incentives would effectively increase adherence; whether patients actually benefit from taking their depot more regularly; whether the money would be used to buy drugs and alcohol, contributing to worsened mental health; whether the incentives would undermine the therapeutic relationship; whether it would perversely incentivize adherent patients to stop taking their medication; whether it would coerce people into accepting medication against their will; and whether it is fair to offer incentives to nonadherent patients but not adherent patients.¹⁶

The first 2 questions have been addressed by the RCT. In addition, the issue of coercing unwilling patients into taking medication was addressed by including only those who had provided informed consent to take the medication and had already willingly taken it for some time, albeit without full adherence. To determine whether stakeholders' other concerns regarding negative consequences are borne out in reality, we interviewed the clinicians of patients allocated to receive incentives, with a specific interest in the following research questions:

1. What did clinicians report about how patients spent the money?
2. Did clinicians report patients asking for more money or more frequent depot injections?
3. Did clinicians report other patients in the team asking to receive payment for depot injections—or becoming nonadherent to their medication to qualify?
4. How did clinicians experience the effect of financial incentives on their patient's interaction with the team?

From the *Unit of Social and Community Psychiatry, Queen Mary University of London; †Institute of Psychiatry, Psychology and Neuroscience, King's College London; and ‡Centre for Mental Health, Imperial College London, London, UK. Received June 8, 2014; accepted after revision December 10, 2014.

Reprints: Elizabeth Highton-Williamson, BSc, Department of Old Age Psychiatry, Institute of Psychiatry, Psychology and Neuroscience, King's College London, Box P070, De Crespigny Park, London SE5 8AF, UK (e-mail: elizabeth.highton-williamson@kcl.ac.uk).

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5. What direct and indirect effects of financial incentives did clinicians perceive on patients' health outcomes?
6. What were the clinical characteristics of those patients for whom clinicians reported a negative effect of incentives on the interaction with the team and/or health outcomes?

MATERIALS AND METHODS

Study Design

This study used an exploratory mixed-methods qualitative design through analysis of semistructured interviews with clinicians, conducted as part of the FIAT study.¹⁰ Thematic analysis was used by coding clinicians' responses and subsequently identifying and refining a thematic structure. Descriptive data on patients' clinical characteristics were compared between those for whom clinicians reported a negative effect of incentives and those for whom no negative effect was reported.

Sample Participants and Data Collection

The FIAT RCT included, across 73 UK community mental health and assertive outreach teams, 141 patients with a diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder, who were prescribed with long-acting antipsychotic (depot) injections but had received 75% or less of the prescribed injections. For each patient assigned to receive incentives during the RCT ($n = 78$), a care coordinator, a community psychiatric nurse, or a mental health team manager involved in his/her clinical care was contacted at the midpoint (month 6) and then at the endpoint (month 12) of the intervention period and asked to complete a short 15-minute semistructured interview over the telephone or in person. The interviews were a mixture of yes/no questions with room for further unstructured explanations of responses. The interviews explored clinicians' experiences of the effects of offering incentives on the patient's interaction with the team and on his/her health and social outcomes and whether the use of the incentive had caused any problems. These also asked clinicians how they thought the patients were using the money, whether any patients had asked for more money, whether any patients had asked to receive their depot more often to be paid more often, and whether any other patients in the team had asked to be paid.

Data Analysis

All interview answers were recorded by shorthand written documentation by a researcher. The electronic interview transcripts from both time points (months 6 and 12) were then imported using the Nvivo software (version 10) for qualitative data analysis. The data were analyzed using a per-patient as opposed to a per-clinician or a per-interview approach. This was to minimize the possibility of falsely inflating the frequency of theme endorsement. To achieve this, the data on each patient across both time points were collapsed to gain an overall picture of clinician experiences with each patient.

The yes/no responses were descriptively analyzed, whereas the more qualitative unstructured responses were thematically coded within Nvivo (version 10). Because the interview questions were formatted with the anticipation of yes/no responses, these were required to be topic specific (ie, "Did offering financial incentives influence the quality of the therapeutic relationship?" and "Did offering financial incentives have any other influence on treatment of the patient, eg, attending of the day hospital, contacts with the GP, etc?"). Therefore, the analysis of the detailed responses was inductively driven, with themes arising directly from

the very nature of the question (eg, "therapeutic relationship" or "other management"). During the original stages of coding, the research team worked together to discuss the application of a preliminary coding framework to each interview. Once a coding framework had been provisionally developed, the first and second authors independently coded the interviews. The authors then collaborated further to refine the emergent coding framework, by either collapsing or expanding codes to encompass emergent themes. Once the second-stage framework had been agreed upon, the researchers continued to code independently. This was completed until the authors believed the themes to be internally homogenous and externally heterogeneous. Interrater reliability was established by the researchers working together on the refinement of the coding framework at the 2 collaborative stages.

Finally, descriptive data on patients' clinical characteristics (diagnosis, adherence, medication type, dose and treatment cycle, and hospitalization) were compared between those for whom clinicians reported a negative effect of incentives and those for whom no negative effect was reported. The study was designed as a qualitative study, and thus, the sample size was not powered for statistical analysis of differences. Therefore, comparisons were descriptive only.

The Research Team

The design and implementation of the FIAT trial were devised by S.P. and the original FIAT research team. Interviews were conducted by FIAT research assistants throughout the trial. Data from the clinician interviews were collated, coded, and analyzed by 2 psychologists and a psychiatrist, with regular supervisory oversight from the principal investigator and psychiatrist, S.P.

Ethical Approval

Written informed consent for participation in the study was obtained from all patients for whom clinicians were interviewed. The study design was approved by the National Research Ethics Service Ealing and West London Research Ethics Committee (reference: 09/H0710/35)

RESULTS

Fifty-nine clinicians were interviewed with regard to the effect of the incentives on 73 of the 78 patients allocated to receive incentives during the FIAT trial. For the remaining 5 patients, a clinician interview could not be obtained because of clinician non-availability. Twenty clinicians were interviewed about more than 1 patient—and for 19 patients, a different clinician was interviewed at each time point. The number of clinicians interviewed and the number of patients for whom interviews were obtained at each time point are presented in Table 1. It should be noted that as research assistants were writing down clinician responses, the following interview excerpts are not verbatim transcribed quotes.

What Did Clinicians Report About How Patients Spent the Money?

The most common ways in which clinicians reported patients spent the money were on food ($n = 24$ patients), alcohol ($n = 21$), illicit drugs ($n = 17$), household goods ($n = 11$), hobbies ($n = 10$), and tobacco ($n = 10$).

Did Clinicians Report Patients Asking for More Money or More Frequent Depot Injections?

Clinicians reported 6 patients across 5 teams having asked for the incentive to be increased to more than £15, but the clinicians said that this was resolved quickly and did not cause problems

TABLE 1. Total Number of Clinician Interviews at Each Time Point

	Clinicians*			Total No. Interviews	Patients No. for Whom a Clinician Interview Was Obtained
	No. Team Managers Interviewed	No. Care Coordinators Interviewed	No. Community Psychiatric Nurses Interviewed		
Midpoint (6 mo)	4	26	16	46	73
Endpoint (12 mo)	3	27	16	46	68

*For each patient assigned to receive a financial incentive, a clinician assigned to his/her care was contacted (including care coordinators, community psychiatric nurses, and mental health team managers) to complete a short semistructured interview. Clinician interviews were obtained at 2 time points of the intervention period: midpoint (month 6) and endpoint (month 12).

for the remainder of the trial. Six patients were reported to have asked to receive their depot more frequently; an additional 12 patients were reported to have requested to have their depot days in advance of the due date or to have turned up for it a few days early. The clinicians stated that, when these requests (sometimes delivered in a “joking” manner) were refused, there were no implications for the patient's treatment.

Did Clinicians Report Other Patients in the Team Asking to Receive Payment for Depot Injections—or Becoming Nonadherent to Their Medication to Qualify?

Twenty-two patients not in the trial across 10 teams were reported as asking to be paid for their depot and/or asking why they were not being paid. Two patients were reported to have missed their depot as a consequence, whereas another patient was reported to have threatened not to take his depot. These problems were reported as being short lived and rapidly resolved, by clinicians thoroughly explaining the role of the incentives as part of a separate research trial, distinguishable from the team's everyday clinical practice.

How Did Clinicians Experience the Effect of Financial Incentives on Their Patient's Interaction With the Team?

The clinicians of 65 patients reported qualitative information on how incentives had positively or negatively influenced the interaction with the team. Clinicians for the remaining 8 patients reported no effect of the incentives on patients' interaction with the team.

Positive Effects on Clinical Management and Relationships

Positive Effects on Clinical Management

For 53 patients, clinicians reported that the financial incentives had led to improvements in their ability to effectively manage their patient's care. The most obvious benefit, reported in the case of 47 patients, was that their attendance of depot appointments improved:

The patient has become compliant and turns up for their medication religiously. (Patient 1, clinician 1)

It made a lot of difference to this patient—he is wavering, and the only thing keeping him on depot is the money (Patient 2, clinician 2)

Twelve patients were reported as making extra efforts to ensure that they received the depot on time (and hence received the incentive):

He will call up to speak to the team and check his depot due date, when before involvement in the study he would never use a phone. (Patient 11, clinician 3)

The clinicians of 32 patients reported that the incentives had had knock-on effects in terms of other aspects of clinical management. These benefits included allowing the clinicians to spend less time chasing the patient (7 patients); increased contact, facilitating monitoring of the patient's health (17 patients); increased engagement with the team (16 patients); and increased attendance of other meetings such as with the psychiatrist, drug and alcohol services, or Care Programme Approach reviews (10 patients):

The incentives have made it easier for me to know where he is—I used to have to chase and he wouldn't answer his phone... The financial incentive ensured the client would be there for his appointment. (Patient 4, clinician 5)

Care coordinators need to have contact to be aware of issues with the client. The financial incentive eased this process as the client was forthcoming for their depot; therefore, we were having face-to-face contact regularly. (Patient 5, clinician 6)

...Since the study and during it, he has been happily involved with the service, whereas his involvement fluctuated before. (Patient 6, clinician 7)

He is a lot more proactive about coming to the center and engaging with the team than he used to be... he has agreed to see a psychiatrist for the first time in a couple of years. (Patient 8, clinician 9)

He is engaging well with the substance misuse team. (Patient 9, clinician 10)

Positive Effects on Relationships

For 21 patients, clinicians linked the incentive to improvements in their relationships with their patients. These improvements included increased trust and communication:

Before the start of this trial, the patient was very suspicious of the team and very guarded. This has dramatically changed since being involved in the study. The patient has come to trust the team more. (Patient 10, clinician 3)

Some clinicians linked the improved relationship to the increased contact that the incentive had generated:

The involvement in the study has given the team more access to patient. He engages a lot more with the team, and the relationship has built up hugely. (Patient 11, clinician 3)

Others linked this to the positive effect of depot medication on the patient's presentation:

He is very pleasant to work with because he is taking his regular depot—I have more positive contact with him. He is friendlier, more appropriate, and there is more noncrisis contact than there had been before.... (Patient 12, clinician 11)

...I think the relationship would have grown anyway as the level of trust increased; however, the incentive may have helped with this development as it meant that the client was getting the depot on a regular basis and his symptoms subsided, which allowed our relationship to be given a chance. (Patient 4, clinician 5)

Some emphasized that the improvement in their relationship made clinical management easier by facilitating constructive communication with the client:

The patient comes to the CMHT more often—before I couldn't talk to her, but now I get to talk more with her about her plans for the future. (Patient 14, clinician 12)

The linking with other services has increased. For example, the patient now asks for the team to be present when meeting his probation officer and lets the team know more about what is going on with the other services the patient is involved with. (Patient 10, clinician 3)

Negative Effects on Clinical Management and Relationships

The clinicians of 19 patients reported negative effects of the incentives on the patient's interaction with the team.

Negative Effects on Clinical Management

The clinicians of 5 patients reported negative effects on their ability to manage their patient's care. In 2 cases, this was because they find that the time and effort involved in providing the incentive were problematic:

I felt a bit of extra pressure—I don't expect to be the banker... Sometimes I'd go to administer a depot and forget the money—but because the client expected it, I would have to return with the money, taking more time out of my day. (Patient 16, clinician 14)

In another 3 cases, this was because the patients disengaged with treatment, which the clinicians attributed to spending the incentive on drugs and alcohol:

The patient has been spending the money—presumably—on drugs and has consequently been discharged from the CMHT due to lack of engagement. (Patient 17, clinician 15)

Negative Effects on the Therapeutic Relationship

The clinicians of 17 patients reported a negative effect of incentives on the therapeutic relationship. The most commonly reported type of negative impact (reported for 10 patients) was a monetarization of the relationship:

The patient viewed receiving the depot as his 'payday,' and there is no longer a rapport between myself and the patient.... (Patient 18, clinician 16)

The relationship has become generally more focused on money, not the interaction.... I feel he is only interested in the money, not actually in interacting with staff.... (Patient 19, clinician 17)

In 5 cases, patients were reported to have become aggressive if the money was not delivered promptly:

The patient would get angry if the money wasn't there and would become slightly threatening if he did not receive it. (Patient 20, clinician 18)

For 1 patient, management of this aggression required increased staff manpower:

The study used up more manpower, as a second person had to come to give the financial incentive to the patient because of the aggression experienced by the CPN. (Patient 21, clinician 19)

What Direct and Indirect Effects of Financial Incentives Did Clinicians Perceive on Patients' Health Outcomes?

The clinicians of 42 patients reported qualitative information on how they perceived the effects of financial incentives on patients' outcomes. This incorporated health and social outcomes such as symptoms, well-being, social functioning, insight, and relationships with friends and family. The clinicians of the remaining 31 patients did not report any effect.

Positive Effect on Patient Outcomes

A positive effect was reported for 33 patients. This theme was further broken down into 3 subthemes: improved mental well-being, insight, and improved social function.

Improved Mental Well-being

The clinicians of 15 patients reported that the incentives had had a positive effect on their patient's well-being, including an improvement in mental health and reduction in symptoms (11 patients) and a reduction in drug and alcohol use (3 patients):

His mental health and presentation is better, and he is less psychotic. (Patient 22, clinician 20)

He has been stepped down from CPA because he is doing well. (Patient 23, clinician 21)

He has had a major illness due to alcohol but has now stopped drinking. (Patient 24, clinician 22)

The clinicians of 5 patients specifically linked the improvement in mental health to increased depot adherence:

He's a long-term drug user..., but his depot reduces the psychotic effects of these drugs, and now he is coming for his depot on time; in the last 6 months we are noticing an improvement in his mental state. (Patient 9, clinician 10)

...Patient now attends regularly for their depot, has had fewer DNAs and no relapses which has helped the team. (Patient 25, clinician 23)

Improved Insight

Relatedly, the clinicians of 12 patients reported that their patients had improved insight into their illness and into the beneficial effects of medication on their mental health:

The patient is gaining more of an insight into his illness and is recognizing his symptoms; his dialogue has improved, and he is more involved with his treatment plan. He says he is 'hoping to move forward.' (Patient 10, clinician 3)

The client has acknowledged his year of stability as a result of taking his medication regularly—he sees the benefit of the medication and being well is the incentive to take it. The financial incentive has helped with this but is not the main driver. (Patient 6, clinician 7)

Improved Social Functioning

The clinicians of 16 patients reported a positive effect of the incentives on the patient's social functioning. The most common improvements were reported as the regular medication and contact having a stabilizing effect on the patient's lifestyle and improved family relationships:

He leads a very chaotic life, and the money is providing him with more of a routine. He is including the money in his budget now. (Patient 28, clinician 27)

He uses less illicit substances, as he was treated better, and the team had less contact from the police. He now has a less chaotic lifestyle... there are less problems with his family and the police. (Patient 29, clinician 28)

Being on the study has helped because the regular contact and medication has given him stability and a sense of satisfaction

with his lifestyle, and his relationships are more stable. (Patient 6, clinician 7)

The patient has a new relationship with a partner, and getting more regular medication has helped a lot. I believe this is due to the FIAT money. (Patient 25, clinician 29)

Other reported improvements included a more stable housing situation, finding a job, improved budgeting ability, and improved self-care:

The money motivated him to attend his depot injection... His self-care and hygiene has improved massively.... He continues to engage well with the home office about immigration and helps out at the hostel/accommodation in cooking. (Patient 30, clinician 31)

He is now working as a waiter and talking about moving out of parents' home and getting a place for himself. (Patient 31, clinician 8)

Negative Effects on Patient Outcomes

The clinicians of 15 patients reported a negative effect of incentives on patient outcomes. These experiences all concerned negative effects of the payment itself and were subdivided into 2 subthemes: increased drug and alcohol use as well as other adverse effects of payment.

Increased Drug and Alcohol Use

The clinicians of 8 patients said that the incentive was used to pay for drugs or alcohol and therefore led to patients increasing their substance misuse:

The patient was in hospital twice since I took over. The financial incentive has helped improve our relationship but has also meant he can spend money on drugs. (Patient 32, clinician 33)

The financial incentives have been beneficial with regard to adherence. However, in terms of impact on his lifestyle, the incentives are not beneficial as this has not improved. There is generally no change in his lifestyle, just increased substance misuse.... He has increased his alcohol and drug (crack) use.... (Participant 33, clinician 4)

He already had a lot of money due to Disability Living Allowance and income support, so the FIAT money was pocket money for alcohol... he became less cooperative with the depot during the trial due to an increase in the use of alcohol.... (Participant 34, clinician 46)

He was hospitalized due to an increase in alcohol use. I believe that FIAT was a contributing factor in his hospitalization due to the extra cash that he had. However, I understand that the

patient would probably have got access to alcohol somehow, regardless of the FIAT study. (Participant 35, clinician 45)

Other Adverse Effects of Payment

Other adverse effects of payment were reported by the clinicians of 8 patients. These included becoming dependent on the money, becoming secretive about the money, and being vulnerable to being taken advantage of by others because of the money:

He came every 2 weeks, and there was never any need to remind him to appear; in fact, he would often come 1 or 2 hours early. Because of this, I believe he is desperate for the money and has become dependent on it. (Patient 36, clinician 45)

The money is hidden from his family and spent on beer... He makes a point of hiding it from his wife... However, this has not increased his drinking. (Patient 37, clinician 30)

He started getting 'hangers on,' that is, people who took advantage of him and started camping out and drinking in his flat. They turned up when he got his incentive. (Patient 34, clinician 46)

Link Between Themes

Clinicians endorsed different combinations of themes for each patient, as depicted in Table 2. This shows that, overall, for 77% of patients, a positive effect on management and/or outcomes was reported, whereas for 33%, a negative effect on management and/or outcomes was reported. These figures overlap because, for some patients, both positive and negative effects were reported.

What Were the Clinical Characteristics of Those Patients for Whom Clinicians Reported a Negative Effect of Incentives on the Interaction With the Team and/or Health Outcomes?

To better understand whether negative clinician-reported experiences were linked to any particular patient characteristics, descriptive data on patients' clinical characteristics (diagnosis, adherence, medication type, dose, treatment cycle, and hospitalization) were compared between those for whom clinicians reported a negative effect of incentives and those for whom no negative effect was reported. The findings are shown in Table 3. Patients for whom clinicians reported adverse effects were on a lower dose of medication at baseline but a higher dose during the intervention, were less likely to be prescribed with oral medication during the baseline and/or intervention periods, and were more likely to be hospitalized during the baseline and/or intervention periods. There were no clear differences in adherence at

TABLE 2. Interlinking of Themes

		Effects on Patient Interaction With the Team				Total
		Only Positive Effect Reported	Only Negative Effect Reported	Both Positive and Negative Effects Reported	No Effect Reported	
		n	n	n	n	
Effects on patient health and social outcomes	Only positive effect reported, n	23	2	1	1	27
	Only negative effect reported, n	1	5	3	0	9
	Both positive and negative effects reported, n	4	0	2	0	6
	No effect reported, n	18	5	1	7	31
Total		46	12	7	8	73

TABLE 3. Patient Characteristics and Clinician-Reported Outcomes

	Baseline Period		Intervention Period	
	Clinician-Reported Negative Effect on Interaction With Team and/or Outcomes (n = 24)	No Negative Effects Reported (n = 49)	Clinician-Reported Negative Effect on Interaction With Team and/or Outcomes (n = 24)	No Negative Effects Reported (n = 49)
	n (%) or Mean (SD)	n (%) or Mean (SD)	n (%) or Mean (SD)	n (%) or Mean (SD)
Primary diagnosis				
Schizophrenia	19 (80%)	39 (80%)	19 (80%)	39 (80%)
Schizoaffective disorder	2 (8%)	5 (10%)	2 (8%)	5 (10%)
Bipolar affective disorder	3 (12.5%)	3 (6%)	3 (12.5%)	3 (6%)
Other psychotic disorder	0 (0%)	2 (4%)	0 (0%)	2 (4%)
Secondary diagnosis				
Alcohol or substance dependence	4 (17%)	7 (14%)	4 (17%)	7 (14%)
Adherence, mean (SD), %	69.6 (13.3)	67.7 (16.4)	84.3 (13.9)	86.5 (15.0)
Type of depot medication				
Fluphenazine decanoate (Modecate)	2 (8.5%)	4 (8%)	2 (8.5%)	4 (8%)
Flupenthixol decanoate (Depixol)	7 (29%)	16 (33%)	6 (25%)	17 (36%)
Haloperidol decanoate	0 (0%)	1 (2%)	0 (0%)	1 (2%)
Pipotiazine palmitate (Piportil)	2 (8.5%)	7 (14%)	3 (12.5%)	6 (13%)
Risperidone (Risperdal Consta)	7 (29%)	14 (29%)	7 (29%)	13 (28%)
Zuclopenthixol acetate (Acuphase)	0 (0%)	1 (2%)	0 (0%)	1 (2%)
Zuclopenthixol decanoate (Clopixol)	6 (25%)	6 (12%)	6 (25%)	5 (11%)
Dose of depot medication, mean (SD), mg	97.0 (107.2)	114.1 (148.1)	133.3 (146.4)	98.6 (138.9)
Modal treatment cycle at which depot was administered				
Every week	1 (4%)	3 (6.5%)	1 (4%)	2 (4%)
Every 2 wk	18 (78%)	30 (65%)	18 (75.5%)	34 (70%)
Every 3 wk	2 (9%)	3 (6.5%)	1 (4%)	4 (8%)
Every 4 wk	2 (9%)	10 (22%)	3 (12.5%)	9 (18%)
Prescribed with oral medication	5 (21%)	32 (65%)	5 (21%)	28 (57%)
Hospitalized at least once	6 (25%)	6 (12%)	8 (33%)	7 (14%)

baseline or during the intervention period, in the type or treatment cycle of depot medication received, or in primary diagnosis. Finally, patients for whom adverse effects were reported were no more likely to have a secondary diagnosis of substance or alcohol misuse.

DISCUSSION

Main Results

Clinician interviews were obtained for almost all of the patients allocated to receive incentives in the trial. The concerns of focus groups with regard to how patients would spend the money were to some extent borne out in the data, with clinicians frequently speculating that the money was spent on drugs and alcohol—but only in a minority of cases was this reported to have led to an increase in the patient's drug/alcohol use or worsened physical or mental health. The fear that the money would perversely incentivize patients was in general not supported by the data. However, 8% of patients did ask for additional money or to be paid more often, and some otherwise adherent patients in

the teams asked to be paid or deliberately became nonadherent. For approximately three quarters of patients (73%), clinicians reported that financial incentives for adherence to depot medication led to better patient and treatment management, including increased patient contact, improved monitoring of patient health, increased patient engagement, and increased trust and communication. In addition, for nearly half of the patients (45%), clinicians reported improved health and social outcomes, and this was often explicitly linked to the benefits of increased medication adherence. Overall, for 77% of patients, a positive impact of the incentives on patient management and/or outcomes was reported. However, negative consequences including aggression and monetarization of the therapeutic relationship and/or worsening of patient health due to increased drug and alcohol use were reported in 33% of cases. These patients were more likely to have been on a lower dose of medication at baseline and a higher dose during the intervention, were less likely to be prescribed with oral medication, and more likely to be hospitalized during both baseline and intervention periods.

Strengths and Limitations

The data were collected as part of a larger RCT that allowed for the systematic collection of clinician and patient data. Our analysis allowed for the empirical investigation of the qualitative experience of clinicians' offering financial incentives, which was beyond the scope of the primary outcome data (adherence level). This type of experiential data allows for a better understanding of how financial incentives may affect clinical management and patient health in practice and significantly contributes to the wider debate surrounding the possible negative consequences of offering financial incentives to people with psychotic disorders.

However, there are several limitations that should be considered when interpreting our findings.

First, shorthand written documentation of clinicians' responses by researchers limited the detail and richness of data collected.

Second, the way in which the interview questions were structured may have biased the way in which the data were interpreted. For example, there was little opportunity for further explanation when a clinician answered no to an interview question, meaning that, in the absence of any change in behavior, there was little room to give a detailed response as to perhaps why. This may have biased the resulting interviews to be more receptive to exploration of changes in behavior during the intervention period.

Third, it should be noted that the same clinician (clinician 17) reported identical experiences of the interaction becoming focused on money for 5 patients within their team. Therefore, it is possible that the clinician conflated their experiences with multiple patients, thus exaggerating the number of patients for whom monetarization of the relationship was reported.

Fourth, it is important to note that clinicians' reports of how patients spent the money were, in many cases, openly identified as speculative. Furthermore, the links between the incentive and changes in patient management and health were reported on the basis of the subjective view of clinicians, which may not necessarily have reflected reality, and making causal attributions on the basis of such reports is not possible. Indeed, several clinicians highlighted that they could not be sure whether reported changes in patient management or health were really attributable to the incentive and that other changes in the patients' circumstances or just natural progression over time may also have played a role.

Finally, the study was designed as a qualitative study, and thus, the sample size was not powered for statistical analysis of differences. It was therefore, only possible to compare descriptively the clinical characteristics between those for whom a negative effect of the incentive was reported and those for whom no negative effect was reported. Although we cannot rule out whether the differences we report are greater than those expected to occur by chance, the findings of this comparison could yield hypotheses for future quantitative testing.

Implications

It seems that, contrary to the hypothetical concerns predicted in focus groups and surveys of clinicians^{12,14–16} for the majority of patients, clinicians reported positive influences of financial incentives, both in the domains of clinical management and patient health and social outcomes. The positive consequences of financial incentives were predominately around, but by no means restricted to, increased depot adherence. For some, financial incentives may facilitate a positive view of treatment and one's clinician, encouraging more constructive communication between the patient and the clinician—quite the opposite of the negative influence on the therapeutic relationship identified as a concern in previous research.^{12,14–16} For others, the incentive to increase medication adherence may lead to improved health and social

outcomes—although, overall, in the main trial, there was no significant difference in ratings of clinical improvement between the incentive and control groups (although the trial may have been underpowered to detect such a difference).¹⁰ Reports of improved insight in some patients may be demonstrative of the cyclical nature of medication noncompliance and poorer insight as previously identified in the literature.^{2,7} These positive effects may help to explain why patients in the incentives group reported higher subjective quality of life than the control group at the end of the intervention period.¹⁰ Of course, for some, no noticeable benefit or cost of offering financial incentives was identified.

However, it should be noted that, for 33% of patients, clinicians reported a negative impact of financial incentives on their relationship with their patients and/or on the patient's well-being. The possibility of financial incentives having a negative influence on someone's relationship with his/her clinician or leading to increased substance abuse is a serious concern, regardless of these events occurring only in a minority of cases.

Therefore, it seems that the likelihood of benefit versus the smaller risk for adverse effects should be weighed up when deciding whether to offer incentives to individual patients. It is possible that, for most patients, the risk is relatively low and easily manageable, but for some, the risk for negative consequences as a result of financial incentives may be more likely and more difficult to handle. The descriptive differences suggest that patients who are more treatment resistant (ie, those on a higher dosage of depot medication, less likely to be prescribed with oral medication, and more likely to be hospitalized) may be at a higher risk for negative outcomes. It is not possible to attribute causation here because these most highly treatment-resistant patients may have experienced a decline in their interaction with the team and/or worsened health and social functioning, with or without the incentives. However, contradicting this link to treatment resistance, there were no clear differences in medication adherence (between patients for whom negative effects of financial incentives were and were not reported) during the baseline or intervention periods. In addition, the clinician experiences may indicate that people with substance dependence problems could pose a small but not insignificant risk for increased substance use contributing to poor mental health, as a possible consequence of being offered financial incentives. However, this was not reflected in the descriptive data.

Because this was designed as a qualitative study and was not powered for statistical analysis, we cannot rule out whether the differences we report are greater than those expected to occur by chance. However, the findings of this comparison could yield hypotheses for future quantitative testing.

One need also consider what the practical implications of initiating financial incentives as part of clinical practice would be. For example, although patients who were denied financial incentives (because of not being a participant on the trial) throughout the intervention were relatively understanding as to why, it is unclear whether this would be more problematic when financial incentives were denied to some for reasons beyond that of it being a research project.

Further Investigation

We have endeavored to identify from the clinician perspective what happened between the clinician and the patient when financial incentives were offered in exchange for medication compliance. Further research should investigate whether any positive effects remain once the incentives end. It has been argued that incentives can be motivating in the short-term but damaging to intrinsic motivation in the long-term because these devalue the

behavior being rewarded and potentially “crowd out” any motivating effect¹⁷ (p. 192). Similarly, increased engagement and adherence may be due to overvaluation of immediate reward,¹⁸ which may not persist when financial incentives are discontinued. Although any positive effect on mental health might be presumed to be rewarding in itself, this is a less immediate and tangible reward than immediate reinforcement with an incentive. Alternatively, better adherence while receiving the money could conceivably lead to symptom relief and increased insight, as the clinicians we interviewed reported for some of their patients, which could strengthen patients' intrinsic motivation once the incentive is removed.¹⁷ We are currently evaluating the effect of incentive discontinuation on adherence and clinical outcomes in the trial participants and are also interviewing patients to understand their perspective on any benefits or adverse effects of payment. Ongoing cost-effectiveness analysis will also further elucidate on the practicality and potential sustainability of offering financial incentives in clinical practice.

In addition, it would be useful to identify whether and how setting the payment greater than or less than £15 affects practice, particularly should the incentives continue for more than 1 year, and whether experiences of offering financial incentives differ in the context of everyday clinical practice rather than during a relatively high-profile RCT.

AUTHOR DISCLOSURE INFORMATION

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