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**Exploration of patients'  
beliefs, acceptability, and  
experience of mobile  
telephone-delivered  
Contingency Management**



## **Society for the Study of Addiction Post-Doctoral Transitional Development Support (2020)**

Jointly funded by the SSA and Maudsley BRC

## **Society for the Study of Addiction PhD Studentship (2017)**

“Mobile telephone-delivered Contingency Management to promote behaviour change in addiction treatment”

# Contingency Management

- ❑ Effective in promoting health-related behaviour change (e.g. abstinence, medication adherence, attendance)
- ❑ Concerns around the practicality of implementing CM: financial resources, staffing, training, ethical and moral concerns
- ❑ Innovations in technology might allow for CM to be implemented with enhanced fidelity and at a lower cost without compromising effectiveness
- ❑ Growing evidence base suggests technology-based CM to be effective



# Mobile telephone-delivered contingency management interventions promoting behaviour change in individuals with substance use disorders: a meta-analysis

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## ABSTRACT

**Background/aims** Contingency management (CM) interventions have gained considerable interest due to their success in the treatment of addiction. However, their implementation can be resource-intensive for clinical staff. Mobile telephone-based systems might offer a low-cost alternative. This approach could facilitate remote monitoring of behaviour and delivery of the reinforcer and minimize issues of staffing and resources. This systematic review and meta-analysis assessed the evidence for the effectiveness of mobile telephone-delivered CM interventions to promote abstinence (from drugs, alcohol and tobacco), medication adherence and treatment engagement among individuals with substance use disorders.

**Design** A systematic search of databases (PsychINFO, CINAHL, MEDLINE PubMed, CENTRAL, Embase) for randomized controlled trials and within-subject design studies (1995–2019). The review was conducted in accordance with the PRISMA statement. The protocol was registered on PROSPERO. **Setting** All included studies originated in the United states. **Participants** Seven studies were found, including 222 participants; two targeted alcohol abstinence among frequent drinkers and four targeted smoking cessation (in homeless veterans and those with post-traumatic stress disorder). One targeted medication adherence. **Measures** The efficacy of CM to increase alcohol and nicotine abstinence was compared with control using several outcomes; percentage of negative samples (PNS), quit rate (QR) and longest duration abstinent (LDA) at the end of the intervention. **Findings** The random-effects meta-analyses produced pooled effect sizes of;

# Research Aim


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Explore patients' beliefs, acceptability, and experience of mobile telephone-delivered Contingency Management (mCM)

1. Survey of patients' beliefs and acceptability towards Contingency Management and the remote delivery of these interventions
2. Qualitative exploration of patients' experience of mobile-telephone Contingency Management (within the context of an existing mCM intervention)

**Survey of patients' beliefs and acceptability towards  
Contingency Management and the remote delivery of  
these interventions**

## Patients' beliefs towards contingency management: Target behaviours, incentives and the remote application of these interventions

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### Abstract

**Introduction.** Contingency management interventions are among the most efficacious psychosocial interventions in promoting abstinence from smoking, alcohol and substance use. The aim of this study was to assess the beliefs and objections towards contingency management among patients in UK-based drug and alcohol services to help understand barriers to uptake and support the development and implementation of these interventions. **Methods.** The Service User Survey of Incentives was developed and implemented among patients (N = 181) at three UK-based drug and alcohol treatment services. Descriptive analyses were conducted to ascertain positive and negative beliefs about contingency management, acceptability of different target behaviours, incentives and delivery mechanisms including delivering incentives remotely using technology devices such as mobile telephones. **Results.** Overall, 81% of participants were in favour of incentive programs, with more than 70% of respondents agreeing with the majority of positive belief statements. With the exception of two survey items, less than a third of participants agreed with negative belief statements. The proportion of participants indicating a neutral response was higher for negative statements (27%) indicating greater levels of ambiguity towards objections and concerns regarding contingency management. **Discussion and Conclusions.** Positive beliefs towards contingency management interventions were found, including high levels of acceptability towards a range of target behaviours, incentives and the use of technology devices to remotely monitor behaviour and deliver incentives. These findings have implications for the development and implementation of remote contingency management interventions within the UK drug treatment services. [Getty C-A, Weaver T, Lynskey

# Patients' Beliefs towards Contingency Management

Among patients in treatment for SUD, explore:

- beliefs and objections towards CM
- acceptability of social and tangible rewards
- acceptability of targeting different behaviours
- acceptability of using technology to monitor target behaviours and remotely deliver incentives





# Service User Survey of Incentives (SUSI)

## **SUSI**

- 18-items: positive and negative statements
- Items regarding acceptability: incentives, target behaviours, remote technologies

## **Participants**

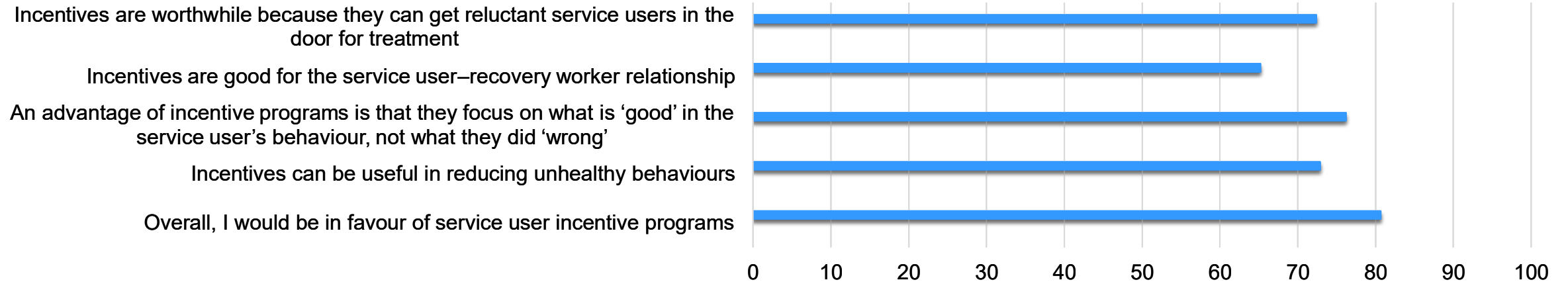
- Patients (N=181): 63% male, 74% white, mean age of 45
- Receiving treatment for SUD: heroin (54.4%) and alcohol (39.4%) at 3 SLaM drug and alcohol treatment clinics

## **Analyses**

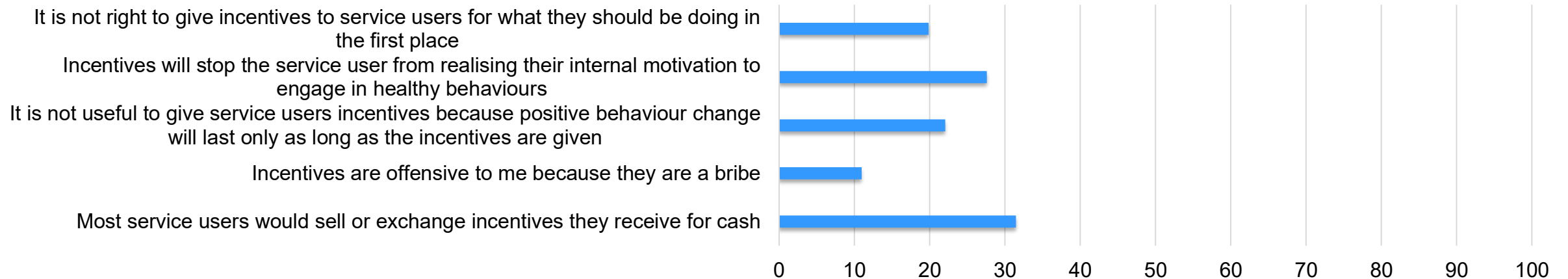
- Summary scores across positive & negative items
- Cronbach's alpha to measure reliability
- Pearson chi-square to examine associations between participant characteristics and SUSI sub-scores

# FINDINGS: SUSI items

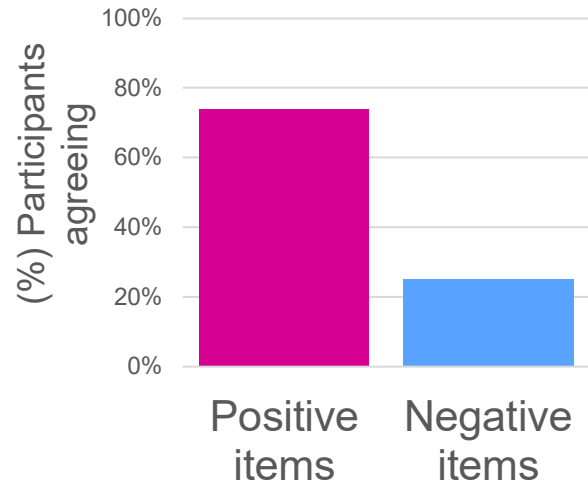
## % participants agreeing with positive items



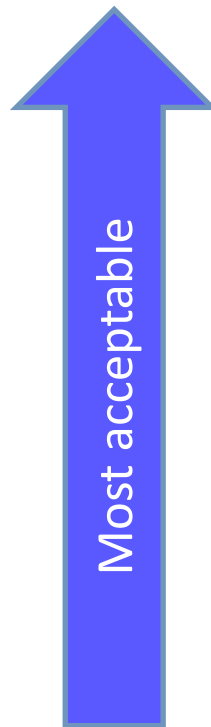
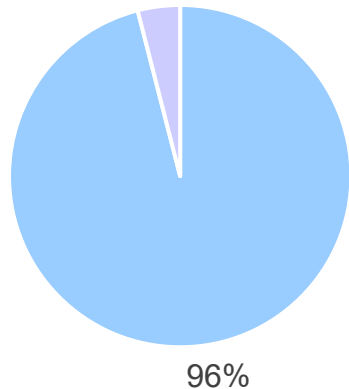
## % participants agreeing with negative items



# FINDINGS



Mobile phone ownership



- Attendance
- Alcohol use
- Medication compliance
- Stimulant use
- Nicotine use
- Opiate use
- Cannabis use

## Monitoring behaviour

	Agreement
Alcohol breathalyzer	84%
CO breathalyzer	78%
Electronic devices	78%
Electronic pill dispenser	74%

## Delivering reinforcement

	Agreement
Phone call	77%
Text message	73%
Study debit card	62%
In the post	51%

## **Part 3**

# **Qualitative exploration of patients' experience of mobile-telephone Contingency Management**



Investigate patients' experience of mobile telephone-delivered CM  
Explore the extent to which contextual factors impact upon both treatment experience and outcomes



Patients receiving mCM to encourage adherence to supervised methadone (N=9)  
Male, aged 32 to 61 years old ( $M = 38.96$ ), white (N=7), homeless (N=5)



South London & Maudsley (SLaM) NHS Foundation Trust drug & alcohol treatment service



Early intervention (2 weeks)  
End of Intervention (12 weeks)



Semi-structured qualitative interviews analysed using Framework

# Mobile telephone-delivered Contingency Management

## **Money was a motivator**

*“It was definitely a game changer. Especially my situation nowadays... so it’s £10, £5, 50p, everything counts, do you know what I mean? Every little helps”*

## **Someone cares**

*“Very needed, because I’ve got really low self-esteem, I’m very... I’ve got very bad depression at the moment and it’s a nice little... It’s a nice thing”*

## **The value of the financial incentive**

*“Like I remember when I used to do criminally, I used to spend it... But when you go to work and make your money on a proper manner, it’s different, you spend the money differently, because you’ve earned it... There’s a difference between making money and earning money. And I feel like I earned it (incentive). Made me feel good”*

# Mobile telephone-delivered Contingency Management

## **Validation of achievement**

*“Made me feel good, I have achieved it, so tomorrow I want to achieve it again. So if you want to achieve it again you have to go again. Just that sense of purpose, sense of achievement”*

## **Simplification of a potentially complicated interaction**

*“it depends how good the relationship with the person... but then there might be something wrong between us, or I’m not going to take my medication just because I’m going to see her”*

## **Discreet**

*“Because this is still not an acceptable thing in society. Is it? No. They look at you like junkie, they look at you like lesser human. It’s not acceptable”*

# Perceived Outcomes

## **Enhanced methadone adherence**

*“If I’m not in the study... probably I’m going to quit a long time ago”*

## **Reduced drug use**

*“I’ve been taking methadone for two weeks, and I haven’t used all every day, I’ve had two, three days... on Sunday I had my medication, I woke up, was about one, said no, today I’m not really, just took my methadone, stayed indoors, watched some movies, that’s it”*



# Therapeutic Alliance

## **Supportive**

*“For the time being I want maintenance, and I think that’s what the text message wanted as well, because it gives me a bonus, like if I go every day. So they want me to go every day, that’s why they give me more money”*

## **Non-judgemental**

*“To me, regardless of what I get at the end of it. It doesn’t talk back to you! It’s acknowledging you and saying thank you. It says thank you”*

## **Reliance**

*“Probably I am reliant on them now, so let’s see how it’s going to affect me”*

## **Two-way process**

*“How can you build a relationship with a computerised text message. It isn’t like it’s asking you any questions, it’s just sending you a message”*



# Concluding remarks

- Patients believe Contingency Management and the remote delivery of these interventions is acceptable and are in favour of CM to promote treatment related behaviours
  - mCM was well-received and experienced as beneficial in enhancing adherence to supervised OST
  - The mechanisms of these interventions appear to operate as intended, even when delivered remotely without human interaction
  - Mobile telephone-delivered CM appears to be effective in promoting alcohol abstinence and smoking cessation
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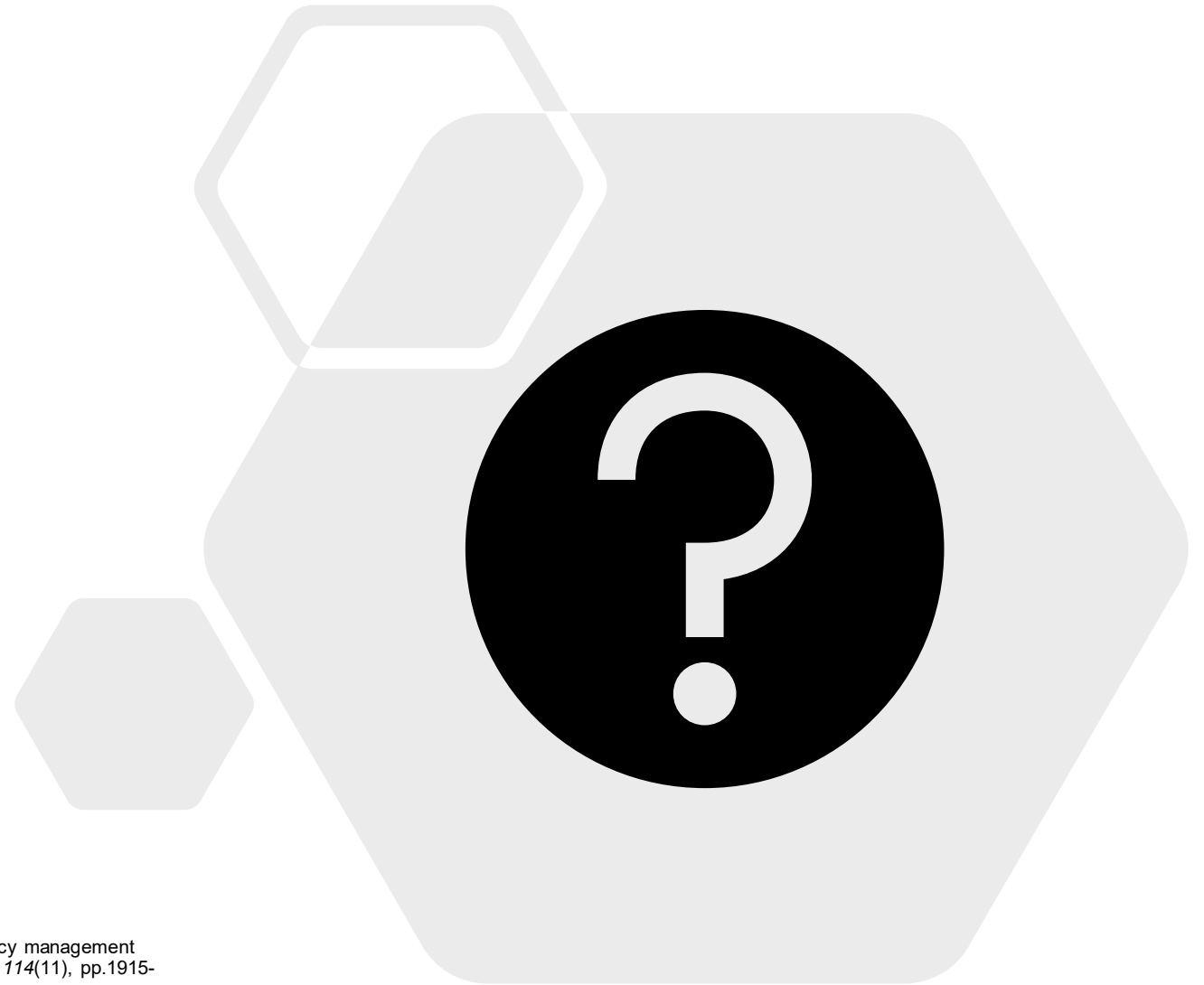
# Next steps...

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- Lack of research evaluating the effectiveness of mCM in reducing illicit substance use
- Further research to explore importance of the therapeutic alliance in generating treatment outcomes
- The health economics of mCM needs to be determined
- Stakeholder consultations to ascertain future directions and clinical priorities

# Thank you!

- Society for the Study of Addiction (PhD Studentship & Post-Doctoral Transitional Development Support)
- Maudsley BRC
- Dr Nicola Metrebian & Dr Tim Weaver
- SLaM drug & alcohol treatment services
- Research participants



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