Contingency management for the reduction of cannabis use and relapse in first episode psychosis

Meghan Craig, Alyssa Milton and Sonia Johnson
s.johnson@ucl.ac.uk
The CIRCLE Trial, Mental Health Sciences Unit, Charles Bell House 67-73 Riding House Street, London, W1W 7EJ

UCL

Cannabis and Psychosis

Background

The CIRCLE Trial is investigating the clinical and cost-effectiveness of a contingency management programme for the reduction of cannabis use and relapse in those with first episode psychosis accessing Early Intervention Services (EIS).

Overwhelming conclusion from UK reviews have indicated that all treatments assessed to date have proved **no better than treatment as usual** (Barnes, et al., 2006; Barnett et al., 2007; Cleary, 2008a). However, these studies have exhibited evidence of poor methodology and small sample sizes. Larger randomised controlled trials (RCTs) of combined Cognitive Behavioural Therapy + Motivational Interviewing versus treatment as usual have found NO differences between groups on outcomes (MIDAS Trial; Barrowclough et al., 2009).

NICE Guidelines now include Contingency Management (CM) in recommended treatment list for first episode psychosis with co-morbid substance misuse issues. CM is an innovative new behaviour change approach derived from Learning Theory (B.F. Skinner) that provides systematic rewards-based reinforcement for abstinence from cannabis use in order to change and maintain the target behaviour. The active ingredients for CM include (Stranger & Budney, 2010)

- **Schedule**: Immediate Reward
- **Magnitude**: the larger the reward, the better the outcome; incremental increases ('avoid habituation')
- **Choice of Target Behaviour**: Link reward to the target behaviour –Cannabis Abstinence & engagement initially.
- **Type of Consequence**: Positive Reinforcement (rather than punishment) generally works best
- **Monitoring**: Systematic application of the consequence Link reward to behaviour that is 'reliably' & 'consistently' implemented.

A US trial (Bellack, 2006) that compared Behavioural Programme (incl. CM) vs. Supportive Treatment for addiction recovery resulted in improved outcomes for Behavioural Treatment. More negative urine samples resulted in improved engagement. No trials, however have examined using CM to assist to reduce cannabis use in an Early Psychosis Population.

Objectives

A multicentre pilot RCT of a specific intervention based on contingency management for cannabis use in early psychosis has been conducted, in order to acquire evidence for feasibility and acceptability of the intervention in an Early Intervention Service context for a full RCT.

Methods

2 randomised arms stratified by clinical site and severity of cannabis use:
Control: Computer based Optimised Psycho-education (OPE)
Treatment: OPE + Contingency management

Intervention lasts 12 weeks following randomisation

Treatment

CM arm involved a voucher rewards scheme to reinforce abstinence from cannabis use. Immediate provision of rewards were given for attending sessions & providing urine samples. Variable reward schedule to enhance engagement & commitment was utilised (Maximum attainable £300).

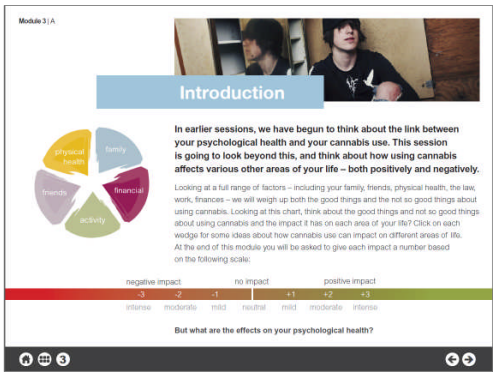
PLUS OPE (see control)

Control

OPE package is a package that is delivered by interactive computer based media and facilitated by a nominated EIS staff member. Designed to enhance retention of information in the client group. Delivered over 6 - 12 sessions. Topics include:

Session 1: Personal experience of mental health issue; information on psychosis.
Session 2: Effect of cannabis on health; information about link between cannabis and mental health; shared experiences of others.
Session 3: Impact of cannabis on all areas of life (both good and bad) including physical and mental health, family, friends, finances, work, and the law.
Session 4: Positive and negative aspects of continuing or stopping cannabis use; risks associated with use.
Session 5: Ways to manage the hazards/risks.
Session 6: Recap.

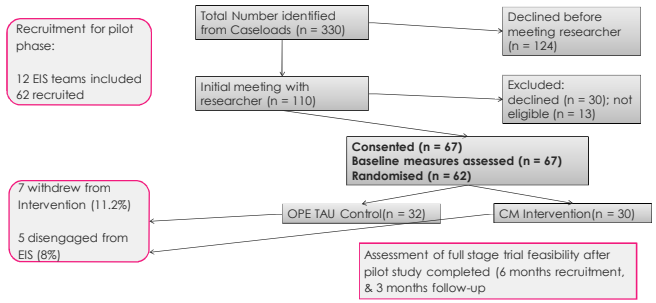
Figure: 1. OPE Example Page



Follow-up at 3 month (end-point) & 18 month follow up for all participants.

Outcomes measured:
Primary: Time to relapse
Secondary: Proportion of urines that are cannabis positive during intervention; Cannabis free days (time line follow back); Positive symptoms (PANSS); Engagement in work or study ; quality-adjusted life year (QALYs) for use in cost effectiveness analysis
Qualitative: Interviews & Focus groups with participants, carers and clinicians

Results



Identified Challenges and helpful aspects of the pilot:

- Lower than projected numbers of potential participants on caseloads – the research team restructured recruitment to accessing more EIS services to meet recruitment target. An outcome of this is that now there are greater numbers of research staff and EIS teams involved for upcoming RCT.
- Of the participants identified, there were some difficulties with engagement and attendance especially for the control group – lesson learnt from this and from qualitative feedback interviews have allowed for improvements in training and planning in order to address this issue for the upcoming RCT. This includes structure reminders for participants and some additional information resources.
- Urinalysis – accuracy of machines was limited due to technology – processes are now in place to account for this in the main trial to optimise outcomes.
- Clinical intervention – the research team developed creative solutions to engaging clinicians to provide the intervention. For example, teams that are able to provide the intervention have nominated a dedicated worker to the trial.
- Rewards – needed to find a balance between the psychological principles of reward (via vouchers) and what is practical in a real world setting.

Conclusions

The challenges and helpful aspects to this treatment approach illustrated will inform the upcoming RCT, integration of research with real world health services, and future developments for using incentives to encourage behaviour change across key health areas.

NHS National Institute for Health Research

Funding and Acknowledgements: This project was funded by the National Institute for Health Research Health Technology Assessment (NIHR HTA) Programme (project number 09/144/50) and will be published in full in Health Technology Assessment. The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HTA programme, NIHR, NHS or the Department of Health.

Thank you to those involved in the CIRCLE* research group including Luke Sheridan-Reins and Jo Taylor, Mark Hinton, the service user advisory groups.
* A randomised control trial of the clinical and cost-effectiveness of a contingency management intervention for reduction of cannabis use and relapse in psychosis is a NIHR-funded research project.