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Application of mobile messaging in the treatment of methamphetamine use disorder

Submission date
17/12/2020

Recruitment status
No longer recruiting

Registration date
30/12/2020

Overall study status
Completed

Last Edited
04/01/2024

Condition category
Mental and Behavioural Disorders

[ ] Prospectively registered
[X] Protocol
[ ] Statistical analysis plan
[X] Results
[ ] Individual participant data

Plain English summary of protocol

Background and study aims
Methamphetamine is a powerful, highly addictive stimulant that affects the central nervous system. Also known as meth, blue, ice, and crystal, among many other terms, it takes the form of a white, odorless, bitter-tasting crystalline powder that easily dissolves in water or alcohol.
The most effective treatments for methamphetamine addiction at this point are behavioral therapies, such as cognitive-behavioral and contingency management interventions. For example, the Matrix Model—a 16-week comprehensive behavioral treatment approach that combines behavioral therapy, family education, individual counseling, 12-step support, drug testing, and encouragement for non-drug-related activities—has been shown to be effective in reducing methamphetamine misuse.
Recently, researchers have used communication technology (e-mail, SMS, and videoconferencing) to enroll patients into treatment programs, access patients during treatment periods, provide substance use interventions, deter risky behaviors, and promote adherence to treatment.
In Taiwan, approximately 82.1% of adults have access to the internet and 96.8% own mobile phones. This provides a practical opportunity to integrate mobile health technology with treatment delivery services. This study aimed to extend current research by investigating the role of mHealth systems, which could deliver SMS and videoconferencing, on therapeutic outcomes during outpatient treatment among people who use MA. The primary aim was to compare treatment retention and the results of urine drug tests between experimental and control groups.

Who can participate?
Adult patients aged 18 - 65 years, with diagnosis of MA abuse or dependence and no initial diagnosis of severe physical or mental illness.

What dose the study involve?
Participants were randomly allocated to receive mobile messaging–assisted treatment (MMAT) or treatment as usual (TAU).
During the 6 months of participation, the MMAT group received treatment reminders by text message every week that coincided with their treatment schedule. Participants had videoconferencing sessions with case managers once every 2 weeks to discuss MA use problems

and facilitate changes in their behavior. All participants were required to attend relapse prevention group therapy sessions once per week for a total of 8 weeks and attend OPD follow-up sessions for 6 months.

What are the possible benefits and risks of participating?
Participants who receive MMAT are expected to have more negative drug urine test results compared with patients receiving TAU. Since MMAT is delivered through individual communication devices, the possibility of stigmatization while others know participants with MA use is considered as a risk.

Where is the study run form?
Jianan Psychiatric Center (Taiwan)

The study was introduced as an adjuvant treatment for MA use disorder. Those who were willing enroll in this study were given an information sheet and asked to provide contact details. After informed consent was obtained, case managers scheduled further visits for this study. All study procedures were approved by the ethical committee review board of Jianan Psychiatric Center.

When is the study starting and how long is it expected to run for?
January 2018 to July 2019

Who is funding the study?
This work was supported and funded by the Integrated Drug Addiction Treatment Center of the Jianan Psychiatric Center by Ministry of Health and Welfare in Taiwan.

Who is the Main Contact?
Dr Lee Chun-Hung
yuhsinliu87@gmail.com

Contact information

Type(s)
Scientific

Contact name
Dr Chun Hung Lee

Contact details
No.25, Ln. 140, Goumin Rd
Tainan City
Taiwan
702
+886 (0)934080327
s841058@cnpc.mohw.gov.tw

Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
Nil known

Study information

Scientific Title
Mobile messaging assisted treatment (MMAT) for patients with methamphetamine use disorder: a preliminary randomized controlled trial

Acronym
MMAT

Study objectives
The hypothesis is that patients who receive mobile messaging have better retention in treatment and drug urine test results compared with patients under TAU.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 07/02/2018, Jianan Psychiatric Center Research Ethics Committee (No. 539, Yuzhong Rd, Rende Dist., Tainan City 717, Taiwan (R.O.C.); +886 (0)62795019), ref: 18-017

Study design
Randomized controlled trial

Primary study design
Interventional

Secondary study design
Randomised controlled trial

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
See study outputs table

Health condition(s) or problem(s) studied
Methamphetamine users

Interventions

The study population is recruited from outpatients of the Addiction Unit from Jianan Psychiatric Centre, which is a mental health hospital in southern Taiwan. The study is introduced as an assisted treatment for methamphetamine use disorder. Those willing to be enrolled in this study are given an information sheet and asked to provide contact details. After inform consent is obtained, case managers schedule further visits for this study. All study procedures are approved by the ethical committee review board of Jianan Psychiatric Centre.

The design of this study is a randomized controlled trial (RCT) that uses a quantitative approach to collect and analyse data. Each participant receives a comprehensive interview by well-trained psychiatrists for recording demographic data (name, age, gender, marital status, educational level, employment status), drug use history (age at first use, duration of use, number of criminal records, current dosage in last month) and diagnostic interviews are also performed for confirming the diagnosis of substance use disorder. The severity of MA use is defined as the number of DSM-5 criteria (2-3 criteria: mild, 4-5 criteria: moderate, equal or above 6 criteria: severe). Eligible patients are randomly assigned to two groups separately on the day of enrolment after baseline measurements and informed consent are obtained. Randomization is performed with a 1:1 allocation using a permuted block design to achieve balanced sample sizes and blinded to individual group assignment.

During the 6 months of participation, the experimental group receive text messages for treatment reminders every week correlated with its treatment schedule. The psychoeducative messages consist of 80 messages based on the early recovery group of Matrix model which includes (1) how to stop the addiction cycle, (2) identifying external triggers, (3) identifying internal triggers, (4) mutual-help activities, (5) body chemistry in recovery, (6) common challenges in early recovery, (7) thinking, feeling and doing and (8) 12-step wisdom. Videoconferencing with case managers is provided for discussing MA use problems and facilitating behaviour change. All participants need to attend eight sessions of the relapse prevention group once a week and OPD follow up for 6 months. Treatment retention, psychotherapies attendance and results of monthly urine tests are analysed as outcome measurements. Feasibility and participant satisfaction are also assessed by Mobile Phone Use Questionnaire developed for the purpose of the study to obtain patients' experiences with using mobile phones for MA use disorder treatment.

Intervention Type
Behavioural

Primary outcome measure
1. Retention calculated as [(remained days in treatment/treatment course for half year)]
2. Drug urine test measured at baseline and every month, and the cases who drop out are recorded as positive for the intention to treat analysis

Secondary outcome measures
Feasibility and participant satisfaction measured using questionnaires at 6 months

Overall study start date
01/01/2018

Completion date
01/07/2019

Eligibility

Key inclusion criteria
1. MA abuse or dependence was diagnosed by DSM-IV-TR
2. Age between 18 and 65 years old
3. No severe mental or physical illness, such as schizophrenia, bipolar I disorder diagnosed initially at baseline survey
4. Would like to participate in the standard outpatient treatment for 1 year
5. People who were unwilling to participate in this study, incarcerated by the criminal-justice system, or hospitalized due to physical or mental illness are defined as drop-outs

Participant type(s)
Patient

Age group
Adult

Lower age limit
18 Years

Upper age limit
65 Years

Sex
Both

Target number of participants
35 participants for experimental group and 35 participants for control group

Total final enrolment
99

Key exclusion criteria
Severe mental or physical illness

Date of first enrolment
01/07/2018

Date of final enrolment
31/01/2019

Locations

Countries of recruitment
Taiwan

Study participating centre
Jianan Psychiatric Center
No. 539, Yuzhong Rd
Rende Dist

Tainan City
Taiwan
702

Sponsor information

Organisation
Ministry of Health and Welfare

Sponsor details
No.488, Sec. 6
Zhongxiao E. Rd.
Nangang Dist.
Taipei City
Taiwan
115204
+886 (0)2 8590 6666
MOYO@mohw.gov.tw

Sponsor type
Government

Website
https://www.mohw.gov.tw/mp-1.html

ROR
https://ror.org/024w0ge69

Funder(s)

Funder type
Government

Funder Name
Ministry of Health and Welfare

Alternative Name(s)
Ministry of Health and Welfare, Taiwan, , MOHW

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Taiwan

Results and Publications

Publication and dissemination plan
Planned publication in a high-impact peer-reviewed journal.

Intention to publish date
31/12/2020

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Lee Chun-Hung (yuhsinliu87@gmail.com). Data form: .sav (SPSS), could be shared with other investigators for 7 years. Consent should be obtained under the Jianan Psychiatric Center's regulation. Any investigator who wants to obtain data should complete an application form. All the data are anonymous.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet			04/01/2021	No	Yes
Protocol file			04/01/2021	No	No
Results article		07/07/2023	04/01/2024	Yes	No