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Can treating sleep problems improve depression? The RESTED Trial

Submission date
07/02/2023

Recruitment status
No longer recruiting

Registration date
12/04/2023

Overall study status
Completed

Last Edited
18/09/2026

Condition category
Mental and Behavioural Disorders

[X] Prospectively registered
[X] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims
Depression is a very common and impairing condition. Current treatments include antidepressant medication and psychological therapy. Both can be effective, but more than one-third of people do not benefit from these treatments. There are reasons to think that poor sleep is an important contributor to depression and that if sleep could be improved, depression would improve too. Previous research has shown that we can improve sleep quality using a behavioural treatment called 'sleep scheduling therapy'. This treatment involves reviewing the patient's current sleep pattern and supporting them to follow a new, personalised sleep schedule. The research team want to find out whether using this treatment to improve sleep will also improve depression and how it works.

Who can participate?
Adult patients registered at a GP practice that is taking part in the study can take part if they experience depression and frequent difficulty with falling asleep and/or waking up during the night (insomnia).

What does the study involve?
People interested in taking part in this study will first be asked to complete a questionnaire (either online, over the phone or in paper format, which will take around 15 minutes) to determine whether the study is suitable for them. The questionnaire will ask about their sleep and depression as well as their general health.
Once the questionnaire is completed, a member of the study team will arrange a brief interview with them to check that they meet the eligibility criteria and to determine if the study is suitable for them.

If a person decides to take part in this study and is considered eligible after completing the questionnaire and interview, they will be invited to meet with one of the researchers. At this visit, the researcher will:
1. Ask for consent to be given to take part in the study
2. Ask the participant to complete some questionnaires about other health, daytime functioning, sleep pattern and mood.
3. The researcher will also ask them to complete some tasks on a computer. The tasks will ask

them to judge different facial expressions and words presented on the screen.
4. The researcher will provide a sleep diary and an actigraphy watch (a wearable device that monitors movement and light exposure) and explain how to use them.

After 7 days of wearing the acti-watch and completing the sleep diary, participants will be randomly assigned by a computer to either Group 1 or Group 2. This is done randomly because this is the best way to do a fair comparison of the two groups. The team will randomise 115 patients to Group 1 and 135 patients to Group 2.
Group 1 - will continue to receive any treatments and support from their general practitioner (or other local services). That is, there will be no additional treatment provided by the study.
Group 2 – will also continue to receive any treatments and support from their general practitioner, but in addition, will also receive a behavioural sleep intervention from a nurse. This will involve meeting with the nurse over 6 weekly sessions, where you will be supported to follow a new personalised sleep schedule to improve sleep.

Participation in the study will last for 6 months and follow-up assessments will take place at 1, 2, and 6 months, irrespective of which group (1 or 2) the person is allocated to.

The research team will provide either an email or pack in the post at 1, 2 and 6 months after the first visit asking participants to:
1. Complete a questionnaire – this can be done either electronically, over the phone with one of our researchers, or in paper form. This is expected to take approximately 5-10 minutes at 1 month and 45 minutes at 2 and 6 months to complete.
2. Complete computerised tasks (at 2 and 6 months only).
3. Wear the acti-watch for 7 days (at 2 and 6 months only).
4. Keep a sleep and activity diary for 7 days (at 2 and 6 months only).
5. Send back the acti-watch and diary in a pre-paid envelope or drop them off at your GP practice (at 2 and 6 months only).

What are the possible benefits and risks of participating?
Participants may benefit from improved sleep and mood by taking part in this study. They will also contribute to research, which may help develop better treatments for people experiencing depression and poor sleep. We do not anticipate that there are any risks in taking part. However, involvement in the study will involve answering questions about sensitive and potentially upsetting topics. If participants do not feel comfortable answering such questions, the team will discourage them from participating in the study or taking part in the online eligibility questionnaire. There are no known serious side effects from taking part in this study; however, a change to your sleep pattern may be associated with a short-term increase in sleepiness. If you do feel sleepy during the study, we advise that you avoid activities that require a high degree of vigilance, such as driving or operating heavy machinery.

Where is the study run from?
The study is run from the Nuffield Department of Primary Care Clinical Trials Unit (UK)

When is the study starting and how long is it expected to run for?
April 2022 to November 2025

Who is funding the study?
National Institute for Health Research Efficacy and Mechanism Evaluation Programme (NIHR: EME) (UK)

Who is the main contact?
Charles Vicary (Trial Manager), rested-trial@phc.ox.ac.uk

Contact information

Type(s)
Scientific

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Public

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Additional identifiers

Integrated Research Application System (IRAS)
318628

Central Portfolio Management System (CPMS)
54735

Study information

Scientific Title
Targeting insomnia to treat depression: An explanatory randomised controlled trial of sleep restriction therapy

Acronym
RESTED

Study objectives
The primary hypothesis is that sleep restriction therapy + treatment as usual (TAU) compared with TAU will lead to a reduction in depressive symptoms at 26 weeks follow-up.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 01/02/2023, London – Surrey Research Ethics Committee (Meeting held by video-conference via Zoom; +44 (0)2071048088, (0)2071048102, (0)2071048388; surrey.rec@hra.nhs.uk), ref: 22/LO/0897

Primary study design
Interventional

Study design
Randomized interventional study

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Mental health

Interventions
On completion of baseline assessments participants will be randomised using the sortition system to receive either Sleep Restriction Therapy (SRT) + Treatment As Usual (TAU) or TAU alone. SRT will involve six weekly sessions with a trained nurse. TAU may include existing treatment regimens for depression (and insomnia). There will be no restriction upon usual care for either group. Usual care for depression is likely to be antidepressant medication and/or referral to psychological therapy services. Usual care for insomnia is likely to be general sleep advice, hypnotics, or sedative antidepressants. The six sessions will comprise three in-person sessions (1/3/5) and three remote sessions (2/4/6), although all sessions could be delivered remotely if needed (e.g., due to participant preference, scheduling difficulties, covid restrictions, or room availability at practice).
Following the baseline assessment, each participant will be followed up at 4, 8 and 26 weeks post-randomisation where they will complete the study questionnaires and perform the study tests carried out at the baseline assessment.

Intervention Type
Behavioural

Primary outcome(s)
Self-reported depression severity measured using the Patient Health Questionnaire-9 (PHQ-9) at 26 weeks post-randomisation

Key secondary outcome(s)
1. Self-reported depression severity measured using the Patient Health Questionnaire-9 (PHQ-9) at 4 and 8 weeks post-randomisation
2. Self-reported insomnia severity measured using the Insomnia Severity Index (ISI) at 4, 8 and 26 weeks post-randomisation
3. Mediation analysis: Self-reported insomnia severity (ISI) at week 4 as a mediator of PHQ-9 at 26 weeks post-randomisation
4. Sleep onset latency (SOL), Wake After Sleep Onset (WASO), Sleep Efficiency (SE), Total Sleep Time (TST), Relative Amplitude (RA) and Interdaily Stability (IS) measured using actigraphy (measured over 1 week) at post-treatment (8 weeks) and follow-up (26-weeks)
5. Emotional processing bias measured using the Oxford Emotional Test Battery: Facial Expression Recognition Task (FERT, outcomes: accuracy for sad and happy facial expressions), Emotional Categorisation Task (ECAT, outcomes: reaction time for correct positive and negative words) and Emotional Recall Task (EREC, outcomes: number of positive and negative self-referent words correctly recalled) at 8 and 26 weeks post-randomisation.
6. Positive and negative affect measured using the Positive and Negative Affect Schedule (PANAS) at 8 and 26 weeks post-randomisation
7. Repetitive negative thinking measured using the Perseverative Thinking Questionnaire (PTQ) at 8 and 26 weeks post-randomisation
8. Behavioural activation measured using the Behavioural Activation for Depression Scale (BADS-SF) at 4, 8 and 26 weeks post-randomisation
9. Mediation analysis: insomnia at mid-treatment (week 4) increasing behavioural activation (BADS-SF) at week 8 as a mediator of the treatment effect on depression at week 26
10. Self-reported sleep and daily activation (over 1 week) measured using the Consensus Sleep Diary (CSD) at 8 and 26 weeks post-randomisation
11. Psychological well-being measured using Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) at 8 and 26 weeks post-randomisation
12. Cognitive complaints measured using the British Columbia Cognitive Complaints Inventory (BC-CCI) at 8 and 26 weeks post-randomisation
13. Gross and threshold levels of activity and light exposure measured using actigraphy and measures of their phase at 8 and 26 weeks post-randomisation
14. Pre-defined adverse events measured using an item from the PHQ-9 (suicidal ideation) and a bespoke questionnaire at 4, 8, and 26 week post-randomisation
15. Exploratory mediation analyses: assessing whether the change in mechanistic outcomes (actigraphy-defined sleep efficiency, IS, and RA; FERT, ECAT, EREC performance; PANAS; PTQ; BADS-SF) at 8 weeks mediates improvement in depression at 26 weeks.

Completion date
01/11/2025

Eligibility

Key inclusion criteria
1. Participant is willing and able to give informed consent for participation in the trial.
2. Aged 18 years or above.
3. Screen positive for depressive symptoms on the PHQ-9 (> = 10) and meet criteria for Major

Depressive Disorder, assessed via the Structured Clinical Interview for DSM-5 (SCID-5)
4. Screen positive for insomnia symptoms on the sleep condition indicator and meet criteria for Insomnia Disorder
5. Self-reported sleep efficiency < 85% over the past month, assessed via the Pittsburgh Sleep Quality Index (PSQI)
6. Able to attend appointments for assessments and treatment and adhere to study procedures
7. The participant's GP surgery is participating in the trial

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
120 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
1. Female participant who is pregnant or planning pregnancy during the trial
2. Additional sleep disorder diagnosis OR "positive" on screening.
3. Dementia or Mild Cognitive Impairment (MCI)
4. Alcohol or substance-use dependent
5. Epilepsy
6. Psychosis (schizophrenia, bipolar disorder)
7. Currently or recently received in-patient psychiatric treatment within the past 2 months
8. Current suicidal ideation with intent OR attempted suicide within the past 2 months
9. Currently receiving cancer treatment OR planned major surgery during the treatment phase
10. Night, evening, early morning or rotating shift-work
11. Currently receiving psychological treatment for insomnia from a health professional or taking part in an online treatment programme for insomnia
12. Previously received sleep restriction therapy from a health professional
13. Life expectancy of < 1 year
14. Another person in the household already participates in this trial
15. Currently taking part in another clinical trial which could affect outcomes in RESTED
16. Recruiting clinician deems not suitable for the trial

Date of first enrolment
01/05/2023

Date of final enrolment
30/11/2024

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
-
-
-
England
-

Sponsor information

Organisation
University of Oxford

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Government

Funder Name
National Institute for Health and Care Research

Alternative Name(s)
National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from the chief investigator (Prof. Simon Kyle, simon.kyle@ndcn.ox.ac.uk)

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
HRA research summary			28/06/2023	No	No
Participant information sheet	version 2.0	24/01/2023	01/03/2023	No	Yes
Participant information sheet	version 3.0	27/02/2023	19/08/2024	No	Yes
Participant information sheet	version 4.0	08/12/2023	19/08/2024	No	Yes
Protocol file	version 3.0	27/02/2023	19/08/2024	No	No
Protocol file	version 4.0	08/12/2023	19/08/2024	No	No
Protocol file	version 5.0	17/12/2024	15/04/2025	No	No
Protocol file	version 6.0	28/07/2025	18/09/2026	No	No