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TEENSLEEP: Improving educational attainment through delayed school start time and sleep education

Submission date	Recruitment status	[X] Prospectively registered
01/04/2015	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
21/04/2015	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
10/05/2021	Other	

Plain English summary of protocol

Background and study aims

During adolescence the biological clock changes. This change means that teenagers find it difficult to fall asleep early in the evening, and difficult to get up in the morning. Pilot work in the U.K. suggests that delaying the school start time until 10am improves performance in GCSE grades. This is likely to be due to the teaching is happening when teenagers are biologically more alert and able to engage in learning. As well as biological changes, teenagers face a lot of social pressures. Using electronic devices late into the evening may impact on sleep. This is also a time when teenagers are facing the stress of examinations and the pressure to perform well. Alongside the delayed school start time we will also be delivering a sleep education package, to teach teenagers how to get good sleep, and maintain it during periods of stress. There is strong evidence that sleep quality impacts on learning. The aims of this study are to investigate the impact, primarily on pupils' GCSE grades, of improving sleep through sleep education and introducing a later school day for GCSE students. We are also interested in how these interventions affect sleep, mood and well-being.

Who can participate?

Year 10 and year 11 students attending a state school in England.

What does the study involve?

Participating schools are randomly allocated to one of four groups. The students attending the schools in group 1 start their lessons later in the day, with the school day being from 10am to 4pm. The students attending the schools in group 2 are given sleep education classes, which will teach them about sleep, how to get good night's sleep and how to get a good night's sleep when feeling stressed. These sessions take place over a period of 5 weeks and are from one hour a week. Those students in schools in group 3 start their school day at 10am and have the sleep education lessons. Those students attending schools in group 4 are used as controls and do not receive either intervention. The performance of the interventions are measured according to GCSE performance, sleep quality, day time sleepiness and general well-being experienced by all students taking part.

What are the possible benefits and risks of participating?
All schools involved in the study will be offered the sleep education package at the end, which will involve training teachers to deliver this engaging topic. There are no risks to taking part.

Where is the study run from?
The study is run from the University of Oxford and evaluated by the University of York and the University of Durham, but schools anywhere in England can participate.

When is the study starting and how long is it expected to run for?
February 2015 to September 2018

Who is funding the study?
1. The Wellcome Trust (UK) (grant code: 105428)
2. The Education Endowment Fund (UK)

Who is the main contact?
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Contact information

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Public

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Additional identifiers

Protocol serial number
N/A

Study information

Scientific Title
Comparing the effect of a delayed school start time, sleep education, both and teaching-as-usual on examination performance in 14 to 16 year olds: a factorial cluster randomised controlled trial

Study objectives
There are 3 primary hypotheses:
1. Delaying the school start time will lead to an improvement in GCSE performance, relative to sleep education and no intervention
2. Sleep education will lead to an improvement in GCSE performance relative to no intervention
3. A delayed start-time and sleep education will lead to greater improvement in GCSE performance relative to individual interventions or no intervention

The secondary hypothesis are:
1. Sleep education will lead to an improvement in sleep knowledge, better sleep, mood and well-being compared to baseline
2. A delay in the school start time will lead to a decrease in sleepiness and an improvement in mood and well being compared to baseline
3. Combined interventions will lead to an improvement in sleepiness, sleep, mood and wellbeing compared to baseline
4. Improvements in sleep will mediate improvements in GCSE performance

Ethics approval required
Old ethics approval format

Ethics approval(s)
Oxford central ethical committee., 16/04/2015, ref: MS-IDREC-C1-2015-076

Study design
This is an interventional study with a two by two factorial pragmatic field design.

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Academic performance in year 10 and 11 pupils.

Interventions
There are 3 intervention arms:
1. One arm will receive a delay in the school start day, starting at 1000 and finishing at 1600. This will be implemented in the academic year 2016/17.
2. One arm will receive sleep education, which will teach about sleep, how get good sleep and how to maintain sleep during periods of stress. Teachers will be trained in delivering this curriculum. It will be delivered over 5 weeks, 1 hour per week. This will be delivered to year 10 and 11 pupils in academic year 2015/16 and to year 10 in academic year 2016/17.
3. One arm will receive both interventions.

There is also a control arm. Schools in the control arm will receive no intervention.

Intervention Type
Behavioural

Primary outcome(s)
GCSE scores

Key secondary outcome(s))
Secondary measures will look at sleep quality, sleepiness, chronotype and general well-being. This data will be gathered via survey comprising 4 questionnaires.

1. Sleep quality will be measured using the Sleep Condition Indicator (SCI)
2. Daytime sleepiness will be measured using the Cleveland Adolescent Sleepiness Questionnaire
3. Chronotype will be measured using the Munich Chronotype Questionnaire (MCTQ)
4. Well-being will be measured using Kidscreen-27

Ideally these will be delivered online, but paper versions will be available. These questionnaires will be administered twice in the first year of the study (once in January 2016 and again in June 2016) and 3 times in the following years in September, April and June. At the end of each academic year we will be asking schools to provide data on attendance, reason for non-attendance, disruptive behaviour/ exclusions and number of pupils requiring additional support.

The following will be collected from a sub-sample of pupils (20 pupils from each school) via bracelet sleep monitors:
1. Heart-rate

2. Temperature
3. Sleep-wake patterns

Completion date
30/09/2018

Eligibility

Key inclusion criteria
Secondary schools across England will be eligible to take part in the study if they agree to all of the study requirements.

Participant type(s)
Mixed

Healthy volunteers allowed
No

Age group
Child

Sex
All

Total final enrolment
2

Key exclusion criteria
In the sub-sample of 20 pupils in each school, pupils will be excluded is they report a sleep disorder, any other psychological disorder, physiological disorders which may interfere with sleep, heart-rhythm abnormalities, excessive caffeine consumption or use of drugs know to affect sleep or the central nervous system.

Date of first enrolment
22/04/2015

Date of final enrolment
30/09/2015

Locations

Countries of recruitment
United Kingdom

England

Study participating centre

University of Oxford
United Kingdom
OX1 2JD

Study participating centre
University of York
United Kingdom
YO10 5DD

Study participating centre
University of Durham
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Sponsor information

Organisation
University of York

ROR
https://ror.org/04m01e293

Organisation
University of Oxford

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Charity

Funder Name
Wellcome Trust (grant code: 105428)

Alternative Name(s)

Funding Body Type
Private sector organisation

Funding Body Subtype
International organizations

Location
United Kingdom

Funder Name
Education Endowment Foundation

Alternative Name(s)
EducEndowFoundn, The Education Endowment Foundation (EEF), Education Endowment Foundation | London, EEF

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/08/2019	10/05/2021	Yes	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes