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The effects from delayed school start on adolescent sleep, health and school performances

Submission date
01/08/2017

Recruitment status
No longer recruiting

Registration date
10/08/2017

Overall study status
Completed

Last Edited
09/11/2017

Condition category
Other

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

Plain English summary of protocol

Background and study aims
Within sleep research, it is well-known that teenagers' circadian rhythm (body clock) is somewhat shifted compared to both children and adults in so far that teenagers are more likely to have a drive to stay up late in the evening and to be sleepy in the morning. International research shows positive short-term effects for delayed school start: longer sleep duration, less sleepiness during school days, and fewer traffic accidents, to name a few effects. However, research is largely lacking regarding teenagers' sleep, health and school performance in the longer term. It is possible, for example, that the students eventually would adjust their sleep habits after their new schedule and that the positive gains would disappear. Another shortcoming of the current state of knowledge is that almost all studies investigating the effects of delayed school start are from English-speaking countries where circumstances both outside and within school may be different compared to Scandinavian countries such as Sweden. For example, many schools in the U.S. have earlier school starts compared to Sweden, and it is more common for teenagers to have part-time work after school hours. Likewise, there are no evaluations of the possible effects of delayed school start on obesity and depressive symptoms, both of which are associated with sleep deprivation. Further, something that needs to be investigated is how the introduction of delayed school start is experienced by school staff and students, in order to understand more about possible obstacles. The aim of this study is to investigate and follow up the effects of a politically prompted delayed school start over two years, and to complement previous research with measurements of BMI and mental health, and use focus group interviews with students and school staff to learn more about how this intervention is perceived.

Who can participate?
Upper secondary school students aged 16-19, teachers and school health staff

What does the study involve?
All upper secondary students in one Swedish municipality are switched to a delayed school start and are compared to themselves over time as well as students in three other municipalities who start school as usual. Data is collected via surveys and interviews about sleep (sleep habits, sleep

duration, sleep problems), BMI, mental health, and school performance (absenteeism, tardiness, grades). Information on body mass index (BMI) is obtained during health interviews with the school nurse. Information about attendance and grades is collected via surveys and via the schools' own records for absence and grades. The data collection takes place between autumn 2017 and autumn 2020.

What are the possible benefits and risks of participating?
The study will increase knowledge of the long-term effects of delayed school start for upper secondary students regarding sleep, school performance, health and how delayed school start is experienced by the people concerned. One benefit of the survey might be that it opens up a possibility for the students to discuss sleep and lifestyle factors with their peers, family and school staff. A risk is that, although the study is a voluntary one, the students will assume that they have to participate because the school staff requests them to. The school staff are therefore carefully informed that they have to highlight the voluntary nature of the study.

Where is the study run from?
Kristianstad University (Sweden)

When is the study starting and how long is it expected to run for?
February 2017 to December 2020

Who is funding the study?
1. Kristianstad University (Sweden)
2. Clas Groschinski Memorial Foundation (Sweden)

Who is the main contact?
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Additional identifiers

Protocol serial number
1

Study information

Scientific Title
A quasi-experimental evaluation of delayed school start on Swedish adolescents' sleep, health, and school performances in comparison to usual school start times

Study objectives
Sleep duration, health and school performance improves after the delayed school start (short-term effects). The long-term effects are unknown, thus the study will follow up the adolescents over two years after the implementation of the delayed school start has begun.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Regional Ethical Review Board in Lund (Sweden), 13/09/2017, ref: 2017/600

Primary study design
Observational

Study design
Longitudinal interventional quasi-experimental design

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Sleep duration, mental health, BMI, academic performance

Interventions

All upper secondary students in one Swedish municipality will be subject to delayed school start and be compared to themselves over time as well as students in three other municipalities. The study is not randomized. The study is a single-centre study.

Intervention group: Delayed school start (the exact amount of time is yet to be politically decided but it is likely to be 30-60 minutes in the morning)
Control group: School start as usual

The data collection takes place between autumn 2017 and autumn 2020.

Intervention Type
Behavioural

Primary outcome(s)
1. Sleep habits and sleep duration, assessed using the School Sleep Habits Survey (SSHS) late in September 2017, 2018, 2019, early in December 2017, late in May 2018, 2019
2. Grades, assessed using official records and survey questions from the SSHS every semester in conjunction with standard measure times
3. Attendance, assessed using school records and survey questions from the SSHS every semester in conjunction with standard measure times
4. Daytime sleepiness, assessed using SSHS late in September 2017, 2018, 2019, early in December 2017, late in May 2018, 2019
5. BMI, measured using school healthcare records (measured by nurse as part of standard school health appointment) annually

Key secondary outcome(s)
1. Insomnia symptomatology, assessed using the Insomnia Severity Index (ISI), Minimal Insomnia Sleep Symptoms questionnaire (MISS), sleep diary, late in September 2017, late in November 2017 (only 100 students). MISS will also be administered in late December 2017, late in September 2018 and 2019 as well as late in May 2018 and 2019
2. Mental health, assessed using the Center for Epidemiological Studies Depression Scale, Health Behaviours of School-aged Children Symptom Check-List (HBSC-SCL), Psychosomatic Problems Scale, questions on medication use and school stress from the HBSC, late in September 2017, 2018, 2019, early in December 2017, late in May 2018, 2019
3. Sociodemographic status (assessed using the Family Affluence Scale) and questions on physical activity and body perception, late in September 2017, 2018, 2019, early in December 2017, late in May 2018, 2019
4. Experiences from the implementation of delayed school start, assessed using focus group interviews (qualitative methodology) one month after delayed school start during the spring semester of 2018

Completion date
31/12/2020

Eligibility

Key inclusion criteria
Adolescents (questionnaires and focus group interviews):
1. Upper secondary school student
2. Age: 16-19
3. Gender: all

Teachers and school health staff (focus group interviews):
1. Teachers in upper secondary school
2. Any age
3. Gender: all

Participant type(s)
Mixed

Healthy volunteers allowed
No

Age group
Mixed

Sex
All

Key exclusion criteria
Does not meet inclusion criteria

Date of first enrolment
15/09/2017

Date of final enrolment
31/12/2020

Locations

Countries of recruitment
Sweden

Study participating centre
Kristianstad University
Kristianstad
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291 88

Sponsor information

Organisation
Kristianstad University

ROR
https://ror.org/00tkrft03

Funder(s)

Funder type
University/education

Funder Name
Kristianstad University

Funder Name
Stiftelsen Clas Groschinskys Minnesfond

Alternative Name(s)
Clas Groschinski's Memorial Foundation, Clas Groschinski Memorial Foundation

Funding Body Type
Private sector organisation

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

Location
Sweden

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study will be stored in a non-publically available repository at the University, the data will be anonymised, the data will become available after the final report is published and for at least 10 years, the data will be accessed by request from experienced researchers with a clear protocol for analysis to the co-PIs, who will get the agreement of the Study management committee.

IPD sharing plan summary
Stored in repository