

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

Submission date 01/08/2017	Recruitment status No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 10/08/2017	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 09/11/2017	Condition category Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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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2. Dr Annika Norell Clarke

Contact information

Type(s)

Scientific

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Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers

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

Study design

Longitudinal interventional quasi-experimental design

Primary study design

Observational

Secondary study design

Longitudinal study

Study setting(s)

School

Study type(s)

Prevention

Participant information sheet

Not available in web format, please use contact details to request a participant information sheet

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 measure

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

Secondary outcome measures

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

Overall study start date

23/02/2017

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

Age group

Mixed

Sex

Both

Target number of participants

5000

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
Sweden
291 88

Sponsor information

Organisation
Kristianstad University

Sponsor details
-
Kristianstad
Sweden
291 88

Sponsor type
University/education

Website
www.hkr.se

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

Publication and dissemination plan

The study protocol is going to be submitted for publication. The planned publications below regard the main study aims. More publications may be added.

September 2018: Publication on student and teacher experiences from the implementation of delayed school start (based on data from the first semester of implementation during spring 2018)

September 2019: Publication on the psychometric properties on MISS, ISI and sleep diary on the student populations (based on data from the autumn semester 2017 before delayed school start was implemented)

September 2020: Publication on the short-term effects from delayed school start (based on data from the first year after the implementation: autumn 2017 until autumn 2018)

September 2022: Publication on the long-term effects from delayed school start (based on data from the second year after implementation: 2019-2020)

Intention to publish date

01/09/2022

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