ISRCTN95971464 https://doi.org/10.1186/ISRCTN95971464

How a short nap can improve cognitive variables and behavior management in future physical education teachers in Tunisia

Submission date
15/08/2025

Recruitment status
No longer recruiting

Registration date
21/08/2025

Overall study status
Completed

Last Edited
17/12/2025

Condition category
Mental and Behavioural Disorders

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

Plain English summary of protocol
Background and study aims
This study explores the impact of a 25-minute nap on cognitive and behavioral management skills among trainee physical education teachers. It is based on the understanding that teaching is a demanding profession requiring high levels of concentration, vigilance, and strategic decision-making, especially in managing disruptive behavior. Sleep deprivation, common among trainee teachers due to their busy schedules, can impair these cognitive functions. The study aims to determine whether taking a short nap can enhance attention, reaction time, and the ability to choose appropriate intervention strategies during lessons, thereby improving classroom management and creating a better learning environment. The research is conducted in Tunisia with third-year university trainee teachers during their practical training in secondary schools.

Who can participate?
Male physical education teacher trainees on practical teaching placements in their third year of the Bachelor's-Master's-Doctorate programme, selected from a larger group of students on the basis of specific criteria such as good quality of sleep, absence of smoking and alcohol consumption.

What does the study involve?
Participants are randomly allocated to one of two groups. Participants in the experimental group take a 25-minute nap in a dedicated room to improve cognitive recovery, while participants in the control group rest under normal conditions. Participants undergo tests measuring attention, reaction time and their responses to disruptive behavior during teaching sessions, including video observation of their intervention strategies.

What are the possible benefits and risks of participating?
Benefits include improved cognitive functions such as attention, reaction time, and strategic management of disruptive behavior. With regard to the risk, it appears that even if the nap protocol does not lead to an improvement in relation to the study variables, this would in no way negatively affect the participants in this study, since the duration chosen has no post-nap inertia.

Where is the study run from?
Tunis Sports Observatory (Tunisia)

When is the study starting and how long is it expected to run for?
November 2022 to April 2023

Who is funding the study?
Investigator initiated and funded

Who is the main contact
Dr Maddeh Talel, talelmaddeh@hotmail.fr

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Mr Talel Maddeh

ORCID ID
https://orcid.org/0000-0001-6476-9351

Contact details
Tunisia
Tunis
Tunisia
2042
+216 (0)22550679
talelmaddeh@hotmail.fr

Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
377834c4-e17c-443b-8521-acd10f46aac8

Study information

Scientific Title
Impact of a 25-minute nap on cognitive variables and reactive management of disruptive behaviour in Tunisian trainee secondary school physical education teachers

Study objectives

The aim of this study was to examine the effects of a 25-minute nap on certain cognitive faculties in teachers, with a view to creating a learning climate more conducive to the transfer of knowledge.

Ethics approval required
Ethics approval required

Ethics approval(s)
approved 06/10/2022, Ethics commitee (Cité Khadra, le menzah 1, Tunis, 2042, Tunisia; +216 (0) 75416198; Ethicomobser.tn@hotmail.fr), ref: 01136

Study design
Randomized controlled trial

Primary study design
Interventional

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Cognitive variables

Interventions
This text describes an experimental study involving an intervention (a 25-minute nap) and the comparison of groups (experimental and control) on cognitive measures (attention, reaction times, management of disruptive behaviors). The design includes a 3-month observation period with repeated measurements.

The 60 students were selected from the total population of 256 students based on specific inclusion criteria to ensure population homogeneity, namely, non-smokers, non-alcohol consumers, and a Pittsburgh Sleep Quality Index score of ≤5. After this initial selection, participants were randomly assigned to two equal groups: an experimental group (n = 30) and a control group (n = 30). This random allocation was carried out using a sequence generated by specialized randomization software (Randomizer 2.0 for Windows), ensuring allocation concealment. To prevent any selection bias, the sequence was prepared independently by an investigator not involved in participant recruitment and implemented through sealed, opaque envelopes, opened sequentially only after confirming the participant’s eligibility. This rigorous randomization process guarantees baseline equivalence between the groups, thus strengthening the internal validity of the study. Consequently, any differences observed in the results analysis can be confidently attributed to the intervention being studied, rather than pre-existing disparities between the groups.

The experiment was conducted over 3 months (from February 1 to the end of April) using a longitudinal model, with three intakes for each individual (T0: February 1, T1: March 15 and T2: end of April). Each experimental day began with an information session at midday, followed by a standardised lunch. Participants in the experimental group took a 25-minute nap in a dedicated room to improve cognitive recovery, while participants in the control group rested under normal conditions. Both groups then underwent tests of attention (d2 test) and SRT (BlazePod test), followed by participation in supervised teaching sessions. During these sessions, the DB variables and the reactive management interventions of the trainee teachers were collected

using six camcorders (Sony, Model; Handcam 4K) with a built-in projector and six wireless microphones with transmitting receivers (BoomTone DJ, VHF 10HL F4 Micro H.F) with a range of 50 metres to capture their verbal interventions of the filmed teachers.

A total of 180 sessions of 40-minute group sports activities were filmed and 180 grids of the d2 test collected at the three sampling times (T0, T1 and T2 respectively) were analysed with the averages of the complex reaction times of each trainee teacher. The test for the measurement of complex reaction time was carried out first, followed by that of d2 for the measurement of attentional variation and finally a collection of data through the use of delayed observation concerning the modalities of their choice of interventions against the apparent DBs during their teaching lessons.

Intervention Type
Other

Primary outcome(s)
1. Sustained attention measured for each trainee teacher in both study groups using the d2 test at three different times (T0: 1st February, T1: 15th March and T2: end of April)
2. Complex reaction times (CRT) measured using the BlazePod test at three different times (T0: 1st February, T1: 15th March and T2: end of April)
3. Choice of reactive management interventions against student disruptive behavior during teaching measured using the Sieber model (2001) at three different times (T0: 1st February, T1: 15th March and T2: end of April)

Key secondary outcome(s))
There are no secondary outcome measures

Completion date
29/04/2023

Eligibility

Key inclusion criteria
1. Third-year LMD trainee teachers
2. Volunteers to participate in the study
3. Male

Participant type(s)
Healthy volunteer

Healthy volunteers allowed
No

Age group
Adult

Sex
Male

Total final enrolment

60

Key exclusion criteria
Does not accept being a volunteer

Date of first enrolment
01/02/2023

Date of final enrolment
29/04/2023

Locations

Countries of recruitment
Tunisia

Study participating centre
Thadamen Secondary School 1
Cité Thadamen, Ariana
Tunis
Tunisia
2041

Study participating centre
Thadamen Secondary School 2
Cité Thadamen, Ariana
Tunis
Tunisia
2041

Study participating centre
Thadamen Secondary School 2
Cité Thadamen, Ariana
Tunis
Tunisia
2041

Sponsor information

Organisation
Tunis Sports Observatory

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated and/or analysed during the current study are/will be available on request from the study team (Dr Maddeh Talel, talelmaddeh@hotmail.fr), in accordance with the policies and conditions defined by the ethical or legal restrictions of our country. The participants' data remains under the copyright of Mr Talel Maddeh. The author reserves the legitimate right to disclose the data in the event that the variables are no longer correlated with others that have not yet been disseminated and published.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		16/12/2025	17/12/2025	Yes	No