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Reducing internet addiction symptoms and screen time through university physical education

Submission date
04/04/2026

Recruitment status
No longer recruiting

Registration date
08/04/2026

Overall study status
Completed

Last Edited
08/04/2026

Condition category
Mental and Behavioural Disorders

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

Plain English summary of protocol

Background and study aims
This study aims to evaluate whether two university physical education based intervention strategies can reduce internet addiction symptoms, total screen time, and related negative impact among Chinese university students, compared with usual physical education teaching.

Who can participate?
Participants were not required to meet a diagnostic threshold for internet addiction at enrolment. The study recruited full-time undergraduate students enrolled in routine university physical education courses, and internet addiction symptoms were assessed dimensionally at baseline and throughout follow-up.

What does the study involve?
Participants are assigned by class to one of three groups. One group receives classroom-embedded support within routine physical education classes. A second group receives classroom external digital self-regulation support in addition to routine physical education. The control group receives routine physical education only. The study includes a baseline period, an intervention period, and a short follow-up period. Participants complete repeated assessments of internet addiction symptoms, screen time, and related outcomes across the study period.

What are the possible benefits and risks of participating?
Possible benefits include improved self-regulation, reduced problematic screen use, and reduced internet addiction related symptoms. The risks are expected to be minimal and are similar to those of taking part in routine university physical education classes and completing questionnaire-based assessments.

Where is the study run from?
The study is conducted in university physical education course settings in China.

When is the study starting and how long is it expected to run for?
September 2025 to December 2025

Who is funding the study?
1. Al-Farabi Kazakh National University (Kazakhstan)
2. Anyang Institute of Technology (China)

Who is the main contact?
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Study information

Scientific Title
Reducing internet addiction symptoms and screen time through university physical education: a three-arm cluster randomized trial

Study objectives
The aim of this study is to evaluate the effects of two university physical education based intervention strategies on internet addiction symptoms, total screen time, and related negative impact among Chinese university students. Specifically, the study compares a classroom embedded support condition, a classroom external digital self regulation support condition, and usual practice physical education at the end of the intervention and at short term follow up, and examines their weekly change trajectories across the study period.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 26/07/2025, Local Ethical Committee, Al-Farabi Kazakh National University (71 Al-Farabi Ave., Almaty, 050040, Kazakhstan; +7 (727) 377-33-30; info@kaznu.edu.kz), ref: IRB- A1042

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Prevention

Study type(s)

Health condition(s) or problem(s) studied
Internet addiction symptoms, excessive screen time, and related functional impairment among Chinese university students

Interventions
This study uses a three-arm class cluster randomized controlled design embedded in routine university physical education courses. During Weeks 1 to 2, all classes follow the usual teaching plan and no intervention-specific components are delivered. During Weeks 3 to 14, Arm A receives classroom-embedded support within routine physical education classes, including structured class organization, interaction support, and immediate formative feedback. Arm B receives classroom external digital self-regulation support in addition to usual physical education, including screen-use self-monitoring, bedtime screen-limiting strategies, implementation intention prompts, and brief self-regulation support delivered outside class. Arm C serves as the control condition and receives usual physical education only. Weeks 15 to 16 constitute the follow up period, during which no new intervention components are added and short-term maintenance is assessed.

Regarding the method of randomisation, randomisation was conducted at the class level. A total of 18 intact physical education classes were used as the units of randomisation and were allocated in a 1:1:1 ratio to Arm A, Arm B, and Arm C, with six classes in each arm. The random allocation sequence was generated by a research staff member who was not involved in intervention delivery. Specifically, the 18 classes were first randomly ordered using Excel and then assigned to the three study arms according to that order. After the initial random allocation, the distribution of classes across study sites and course instructors was checked, and the allocation was kept as balanced as possible across the three arms with respect to these factors. Assignment was disclosed at the class level to instructors and students.

Intervention Type
Behavioural

Primary outcome(s)
1. Internet addiction symptoms measured using the total score on the 10 item Internet Addiction Test at baseline during Weeks 1 to 2, weekly assessments during Weeks 3 to 16, with primary between group comparisons at Week 14 and Week 16

2. Total screen time measured using the average daily total screen time obtained from device operating system usage statistics and analyzed as total screen time across the study period, measured at baseline during Weeks 1 to 2, weekly assessments during Weeks 3 to 16, with primary between group comparisons at Week 14 and Week 16

3. Negative impact index measured using a composite index of screen related negative impact derived from standardized indicators of sleep related and daytime functional burden, measured at baseline during Weeks 1 to 2, weekly assessments during Weeks 3 to 16, with primary between group comparisons at Week 14 and Week 16

Key secondary outcome(s)
1. Bedtime screen time measured using the average daily screen time during the bedtime period obtained from device operating system usage statistics, measured at baseline during Weeks 1 to 2, weekly assessments during Weeks 3 to 16, with key between group comparisons at Week 14 and Week 16

2. Weekly self reported classroom engagement measured using the study questionnaire at weekly assessments during the intervention period

Completion date
21/12/2025

Eligibility

Key inclusion criteria
1. Full-time undergraduate students enrolled in routine university physical education courses
2. Assigned to one stable study PE class for the semester
3. Able and willing to complete weekly study assessments during baseline, intervention, and follow-up phases
4. Provided written informed consent before baseline assessment

Healthy volunteers allowed
Yes

Age group
Adult

Lower age limit
19 Years

Upper age limit
25 Years

Sex
All

Total final enrolment
711

Key exclusion criteria
1. Students who were not full-time undergraduates or were not enrolled in the routine university physical education course during the study semester
2. Students who did not provide informed consent
3. Students who were unable to participate in routine physical education classes because of health reasons or university physical education regulations
4. Students who were expected to miss baseline assessment or a substantial part of the intervention period

Date of first enrolment
01/09/2025

Date of final enrolment
01/09/2025

Locations

Countries of recruitment
China

Sponsor information

Organisation
Al-Farabi Kazakh National University

ROR
https://ror.org/03q0vrn42

Organisation
Anyang Institute of Technology

ROR
https://ror.org/03sd3t490

Funder(s)

Funder type

Funder Name
Al-Farabi Kazakh National University

Alternative Name(s)
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Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Kazakhstan

Funder Name
Anyang Institute of Technology

Alternative Name(s)
AYIT, AYIT

Funding Body Type
Private sector organisation

Funding Body Subtype
Universities (academic only)

Location
China

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available