

Summer Research Programme for Secondary School Students: An immersive sleep and circadian health education programme

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LiA Project Background

- Adequate sleep is important among developing adolescents and has important implications for their mental well-being and neuropsychological health, necessitating educative interventions
- This summer programme is designed to provide a first-hand, immersive experience of both practical knowledge and research exposure on sleep and circadian sciences; while equipping them with skills to collaborate and communicate with peers successfully
- It also aims at nurturing future student mental health advocates
- I took the lead in the development of this programme since May 2024, and my role as the *programme coordinator* includes leading a group of undergraduate student leaders to execute activities, facilitating lecture sessions, as well as administrative operations like liaison and on-site management for the entire 6 weeks.

Programme Plan

Participants

- $n = 13$ senior secondary school students interested in the science and research behind sleep psychology and circadian health
- Inclusion criteria: current enrolment in Secondary 4-5 (or equivalent, e.g. GCE-AL Years 11-12), and conversational proficiency in Chinese and English

Evaluation Methods

- Student satisfaction evaluated by a 1-hour focus group discussion
- Pre-post survey including the Pittsburgh Sleep Quality Index (PSQI), Sleep Hygiene Index, reduced Morningness-Eveningness Questionnaire and General Self Efficacy Scale measured changes in sleep quality and hygiene, circadian preference and self-efficacy
- 12-item multiple-choice quiz measuring sleep knowledge



Figure 1. Closing Ceremony cum Final Presentation Day of the Programme (26 July)

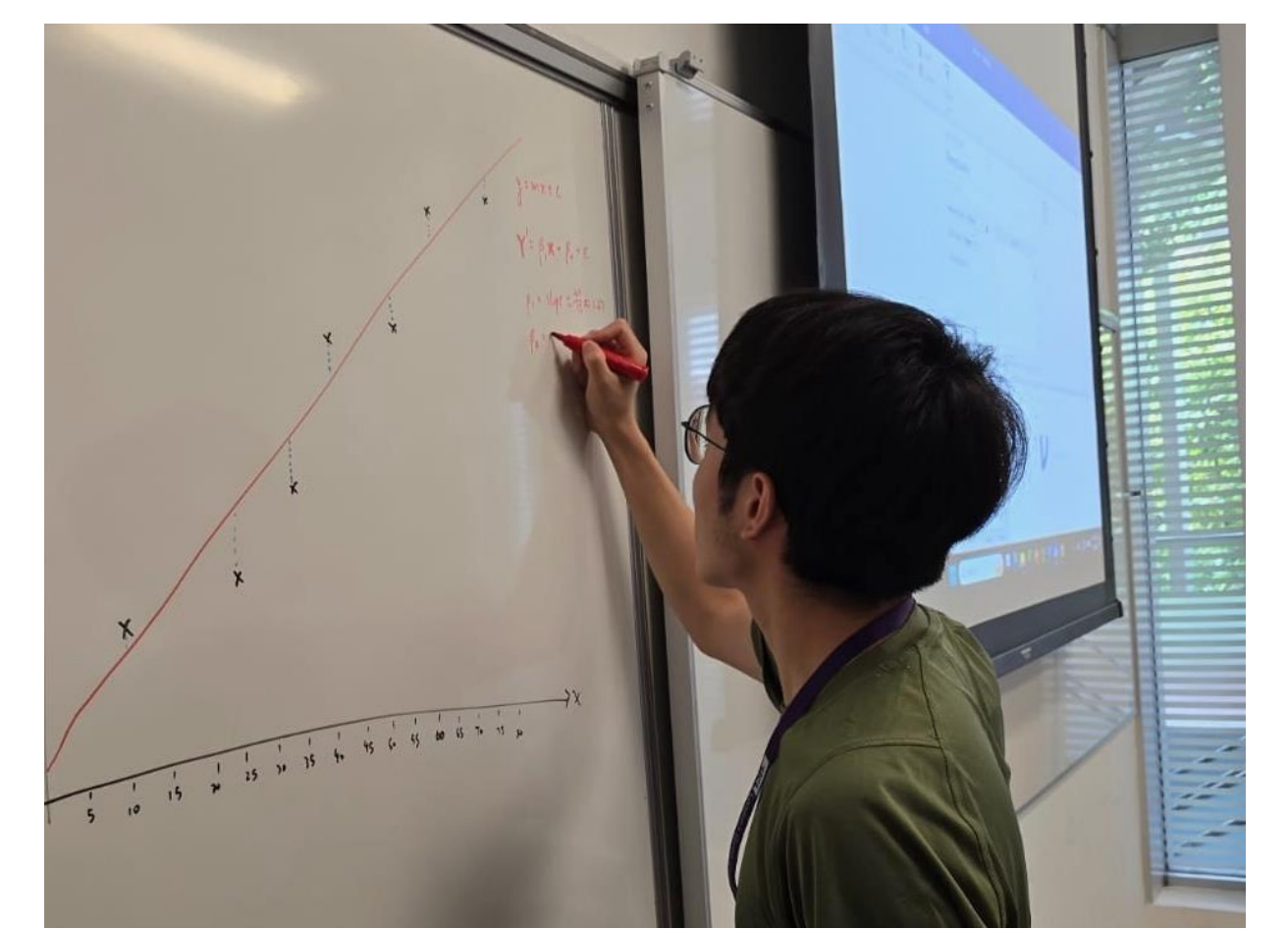
Training Components for Students

- Mini-lectures: sleep and cognition, sleep disorders and circadian science, abnormal psychology, research methods in psychology
- Workshops: electroencephalography (EEG), sleep polysomnography (PSG), counselling and clinical interview skills,
- Research internship & participation: Students were assigned a mentor throughout the programme to shadow and assist in their research work. They could also experience cognitive assessments and overnight sleep assessments at a purpose-built lab.

Outreach and Implementation

- Psychoeducation curation: designed posts and filmed Instagram reels to raise public awareness and debunk sleep myths
- Community outreach: student-led pop-up booths around campus and nearby neighbourhoods, sharing information on sleep hygiene and the lab's knowledge exchange initiatives or research schemes
- Designathon: three groups were given 24 hours to develop a programme fostering awareness and understanding of sleep and circadian health within the school community. They were also asked to design leaflets and pull-up banners for their proposal.

Activity Highlights



Figures 2-5. (left to right) Top: Induction & Icebreaking Session; Sleep polysomnography workshop
Bottom: Group discussion on psychology study design; Research & scientific methods workshop

- **Leadership:** designing and leading sessions such as ice-breaking, lectures on psychology and research methods, as well as the Designathon competition and closing ceremony; coordinated all administrative aspects of programme operations
- **Communication:** liaising with research staff, postgraduate mentors and programme leaders to facilitate a smooth schedule running; maintaining close contact with students as their on-site facilitator
- **Collaboration:** working closely with other undergraduate student leaders for social media curation projects and street booth outings
- **Empowerment:** raising awareness in sleep and mental health among students and nurturing future community leaders

Results

- Programme evaluation reflects general satisfaction (87.6%) and sufficient guidance. They found the programme helpful in exploring careers and raising awareness towards sleep and mental health.
- **Mean PSQI score decreased** by 2.00 from 5.92 to **3.92** after the programme, $p = .031$. Two (15.4%) had PSQI score > 5 (indicating relatively poor sleep) compared to $n = 8$ (61.5%) at baseline
- **Time in bed increased:** 6.83 (1.62) pre vs **7.98 (1.02)** post, $p = .046$
- **Longer sleep time:** 6.12 (1.18) pre vs **7.31 (0.723)** post, $p = .006$
- **Lower SHI score** (24.4 vs **20.6**), may suggest better sleep hygiene
- **22% improvement in sleep knowledge quiz score** (mean = 8.9/12)

Reflection & Conclusion

- Community engagement is a powerful tool to inspire the youth and nurture advocates and leaders in sleep & mental health awareness
- To be an effective and respected leader one must embrace others input, maintain communication and stay organized. Meticulous preparation is key but on-site flexibility to deal with contingencies and collaborate well with others is equally important for success
- There are always strengths we could learn from our teammates
- Future work to systematically evaluate the effectiveness of this community engagement programme as a study is underway

Scan the QR code to watch the video highlights and learn more about our inaugural cohort of the **Summer Research Scheme for Secondary School Students (SRPSSS) 2024** at the HKU Department of Psychology's Sleep Research Clinic and Laboratory

