PhD project 2023-2024 (one-page proposal)

EDISS INTERDISCIPLINAIRE SCIENCES- SANTÉ UNIVERSITÉ DE LYON
ÉCOLE DOCTORALE 205

Influence of stress on medical students' learning and performance

Laboratory (name, n°): Research on Healthcare Performance, INSERM, U1290

Research team (name): Health Care Coaching

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☐ **EDISS fellowship 2023** ~~☐ Other funding~~

Project description including a short introduction, aim/objectives and methods/approach to be used

The performance of the health care professional defines their ability to provide the best possible care to patients; this competence depends on both their initial skill level and their ability to learn in a complex and changing environment. **Because the medical curriculum is highly competitive, students must also develop the ability to regulate their emotions and manage their own health. A student who possesses these skills is expected to be successful in his or her studies and to acquire an adequate level of expertise in caring for patients**. This thesis project offers a long-term perspective for improving health care through a better understanding of the influence of stress on learning and clinical performance and exploring complex interventions for medical students. To this end, two studies will be conducted (PROMESS, EYES-STRESS).

PROMESS: Preventive Remediation for Optimal Medical Students

Medical students face an important competitive pressure throughout their curriculum. This project will evaluate the hypothesis that improved well-being will enable students to express their talents during their studies. To this end, students will be able to follow a preventive remediation program based on 3 modules: stress management, sleep management and increased physical activity. The PROMESS project has a dual objective with a preventive component for the psycho-physiological health of students and a component for optimizing their potential.

- Design: Randomized, controlled, single-center, cross-over trial. Students will be randomized into 2 groups (1:1): Intervention (January-March 2024, n≈100) and control (January-March 2025, n≈100).
- Population: All volunteer students enrolled in the 4th year on the Lyon-Est medical school, for the academic year 2023-2024, and 4th and/or 5th year in 2024-2025.
- Endpoint(s): Academic performance, Quality of life, Psychophysiological stress, Sleep quality (PSQI + actimetry), Physical activity level (GPAQ + actimetry + capacity test), Burnout, School dropout rate.

EYES-STRESS: Understanding the relationship between psychophysiological stress, attentional processes, and performance in the management of a critical clinical situation

Anesthesia residents (undergraduates' students) are regularly confronted with critical and stressful medical situations. The relationship between stress and performance remains complex. Several concepts have been put forward, among them two main ideas emerge: the relationship between stress and performance would depend on the intensity of the stress response and/or on the visual attention bias. This project aims to finely evaluate the relationship between stress, visual attention bias and clinical performance sub-modalities in anesthesia-resuscitation residents.

- Design: Observational study during the management of a simulated critical care scenario.
- Population: All voluntary students following the Diploma of Specialized Studies in Intensive Care Anesthesia at the Lyon-Est Medical School (n≈100), for the academic year 2024-2025.
- Criteria of judgment: Performance during the management (technical + non-technical), Psychophysiological stress, Behavior: analysis of eye movements.

Skills required: The candidate must have obtained his/her Master 2 (or be in the process of obtaining it). The ideal candidate should have completed a research internship combining quantitative and qualitative approaches. Expertise in psychophysiological measures of stress, sleep or physical activity would be an asset. Above all, the candidate must be dynamic, motivated, particularly organized, and enjoy human contact and teamwork.

Application procedure: send a detailed CV to : sophie.schlatter@univ-lyon1.fr and marc.lilot@chu-lyon.fr