

# **A randomized controlled trial of an SMCF-based psychoeducational intervention for reducing academic anxiety among medical students**

## **Background**

Medical students frequently experience high levels of academic stress and anxiety, which can negatively affect academic performance, psychological well-being, and future professional functioning. Psychoeducation is widely used as a scalable intervention to support student mental health; however, traditional approaches are often delivered in a lecture-based format and may lack structured behavioural practice and skill application.

The Self-Management Cycle Framework (SMCF) is a structured model integrating self-assessment, goal setting, behavioural implementation, monitoring, and feedback processes. By embedding behavioural rehearsal and iterative adjustment into psychoeducation, SMCF may enhance the effectiveness of conventional educational approaches.

This study aims to evaluate the effectiveness of an SMCF-based psychoeducational intervention in reducing academic anxiety and improving psychological resources among medical students.

## **Objectives**

### **Primary objective**

To evaluate the effectiveness of an SMCF-based psychoeducational

intervention in reducing academic anxiety among medical students.

### **Secondary objectives**

To assess the effect of the intervention on academic self-efficacy

To assess the effect of the intervention on psychological resilience

### **Study Design**

This study is a parallel-group, randomized controlled trial with a 1:1 allocation ratio and a superiority design. The study is conducted using an open-label design with an active control condition.

### **Study Setting**

The study was conducted at the Zhuhai campus of Zunyi Medical University, Guangdong Province, China.

### **Participants**

#### **Target population**

Third-year clinical medicine undergraduate students at the Zhuhai campus of Zunyi Medical University, China.

#### **Inclusion criteria**

- Third-year clinical medicine undergraduate students
- Aged 18 years or above
- Completed baseline screening assessments
- Ranked among the 128 students with the highest Academic Anxiety Scale (AAS) scores
- Provided informed consent

- Willing to participate in all study sessions

### **Exclusion criteria**

- Currently receiving structured psychological or psychiatric treatment
- Diagnosed severe mental disorders that may interfere with participation
- Inability to attend scheduled sessions
- Incomplete baseline data

### **Sample Size**

A total of 128 participants will be included and randomly allocated into two groups (64 per group).

### **Randomisation**

Participants will be randomly assigned to intervention or control groups in a 1:1 ratio using a computer-generated random sequence.

### **Intervention**

#### **Intervention group**

Participants received a structured psychoeducational programme based on the Self-Management Cycle Framework (SMCF). The programme consisted of 8 weekly sessions delivered over 8 weeks (90 minutes per session) in a group format. The intervention includes: Self-assessment of academic stress, Goal setting and planning, Cognitive and behavioural skill training, Behavioural implementation and practice, Monitoring and

adjustment, Peer interaction and feedback. Techniques include cognitive restructuring, behavioural activation, mindfulness-based strategies, and structured self-monitoring.

### **Control group**

Participants in the control group received a lecture-based psychoeducation programme covering similar thematic content, including academic stress, coping strategies, and emotional regulation.

The programme was delivered in a didactic format without behavioural practice, experiential exercises, or structured feedback processes.

This design allows comparison between content exposure alone and structured behavioural enactment.

After completion of post-intervention assessment, participants in the control group were offered the SMCF-based intervention.

### **Outcomes**

#### **Primary outcome**

Academic anxiety

Measured using the Academic Anxiety Scale (AAS)

Timepoints: Baseline (week 0) and immediately post-intervention (week 8)

#### **Secondary outcomes**

Academic self-efficacy

Measured using the Academic Self-Efficacy Scale (ASES-C)

Timepoints: Baseline (week 0) and immediately post-intervention (week 8)

Psychological resilience

Measured using the Connor-Davidson Resilience Scale (CD-RISC)

Timepoints: Baseline (week 0) and immediately post-intervention (week 8)

### **Data Collection**

All participants will complete self-report questionnaires at baseline and post-intervention.

### **Data Analysis**

Data were analysed to compare changes in outcomes between the intervention and control groups from baseline to post-intervention.

Between-group differences in academic anxiety, academic self-efficacy, and psychological resilience were examined.

A total of 128 participants were randomized, and 124 completed the post-intervention assessment. Analyses were conducted using available data from participants who completed outcome assessments.

### **Ethics**

This study has been approved by the Ethics Committee of Zunyi Medical University (Ethics Approval Document No. [2025]2025KY0110) . All participants will provide informed consent prior to participation.

### **Study Status**

The study has been completed and data collection has been finalized.

### **Supervision**

This study is conducted under the academic supervision of Associate

Professor Dr. Chatchai Ekpanyaskul, MD, Srinakharinwirot University,  
Thailand.