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A study testing the effects of a stress-resilience training programme on the well-being of graduate-entry medical students

Submission date
13/07/2025

Recruitment status
No longer recruiting

Registration date
17/07/2025

Overall study status
Completed

Last Edited
05/08/2026

Condition category
Mental and Behavioural Disorders

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

Plain English summary of protocol

Background and study aims
Medical students often experience high levels of stress, anxiety, and burnout due to the demanding nature of their training. This study aims to explore whether a short, mindfulness-based programme called Enhanced Stress-Resilience Training (ESRT) can help graduate-entry medical students manage stress more effectively, build resilience, and feel better equipped to cope with the pressures of medical school.

Who can participate?
The study is open to students enrolled on the Graduate Entry Medicine (GEM) programme at Swansea University Medical School. Students are typically aged 21 years or over and come from a range of educational and professional backgrounds.

What does the study involve?
Participants are randomly assigned to one of two groups. One group takes part in the ESRT programme, which involves five weekly one-hour online sessions focusing on mindfulness, emotion regulation, and stress management. The other group takes part in weekly discussion sessions on health-related topics in medical education. All participants complete online questionnaires at three timepoints (before the programme, after 5 weeks, and again 6 months later). Some students are also invited to share their experiences in online interviews, written feedback, or focus groups.

What are the possible benefits and risks of participating?
Participants may benefit from learning practical tools to manage stress and improve their well-being. Risks are minimal but may include temporary discomfort when reflecting on challenging emotions or experiences. Support is available if needed, and all participants continue to have access to standard university wellbeing services.

Where is the study run from?
Swansea University Medical School (UK)

When is the study starting and how long is it expected to run for?
July 2020 to July 2023

Who is funding the study?
BMA Foundation for Medical Research (UK)

Who is the main contact?
Prof. Andrew Kemp, a.h.kemp@swansea.ac.uk

Contact information

Type(s)
Public, Scientific, Principal investigator

Contact name
Prof Andrew Kemp

ORCID ID
https://orcid.org/0000-0003-1146-3791

Contact details
School of Psychology
Faculty of Medicine, Health and Life Science
Singleton Park
Sketty
Swansea
United Kingdom
SA2 8PP
+44 (0)1792 604561
a.h.kemp@swansea.ac.uk

Additional identifiers

Protocol serial number
2020-0044

Study information

Scientific Title
Enhanced stress-resilience training (ESRT) for graduate-entry medical students: a randomised-controlled, mixed-method investigation

Acronym
ESRT4GEM

Study objectives
To assess the effectiveness, sustainability, and acceptability of Enhanced Stress-Resilience Training (ESRT) in improving psychological wellbeing outcomes among graduate-entry medical students, and to identify key barriers and facilitators to engagement.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 21/09/2020, Swansea University Medical School Research Ethics Committee (Faculty of Medicine, Health and Life Science, Swansea University, Singleton Park, Swansea, SA2 8PP, United Kingdom; +44 (0)1792 602697; FMHLS-Ethics@swansea.ac.uk), ref: 2020-0044

Primary study design
Interventional

Study design
Randomized controlled trial

Study type(s)
Prevention, Quality of life

Health condition(s) or problem(s) studied
Psychological stress, burnout, and anxiety among medical students, with a focus on prevention and early intervention to enhance resilience, emotion regulation, and psychological flexibility

Interventions
This randomised controlled trial allocates graduate-entry medical students to either Enhanced Stress-Resilience Training (ESRT) or an active control group. Participants attend five weekly 60-minute sessions delivered remotely via videoconferencing.

The ESRT group receives a structured mindfulness-based intervention adapted for time-pressured learners, delivered by a certified practitioner. Sessions include practices in breath awareness, interoception, meta-cognition, and emotional regulation.

The control group engages in weekly facilitated discussions on lay-press articles related to challenges in medical education, such as burnout, empathy, and clinical uncertainty.

Randomisation is computer-generated. All participants continue to receive standard pastoral support.

Intervention Type
Behavioural

Primary outcome(s)
Psychological flexibility measured using the Acceptance and Action Questionnaire 2 (AAQ2) at baseline (T1), post-intervention (T2), and 6-month follow-up (T3)

Key secondary outcome(s)
1. Resilience measured using the 10-item version of the Connor-Davidson Resilience Scale (CD-RISC 10) at baseline (T1), post-intervention (T2), and 6-month follow-up (T3)
2. Stress reactivity measured using the Perceived Stress Reactivity Scale (PSRS) at baseline (T1), post-intervention (T2), and 6-month follow-up (T3)
3. Acceptability, feasibility, and participant experience of ESRT assessed using qualitative data from online exit evaluations, one-on-one semi-structured interviews, and end-of-study focus groups following the 6-month follow-up (T3), analysed using reflexive thematic analysis

Completion date
27/07/2023

Eligibility

Key inclusion criteria
1. Students on the graduate entry medical (GEM) programme at Swansea University Medical School (SUMS)
2. Because students have to have a first degree before enrolling on this programme the youngest they could be is 21 years old. Most students on the GEM programme are in the early to mid twenties age range be there is a small minority of more mature students who may be any age, rarely older than mid to late forties.

Participant type(s)
Learner/student

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
65 Years

Sex
All

Total final enrolment
98

Key exclusion criteria
1. Individuals not enrolled on the graduate entry medical (GEM) programme at Swansea University Medical School
2. Students who were unable to commit to the intervention schedule or declined to participate

Date of first enrolment
05/04/2021

Date of final enrolment
16/11/2022

Locations

Countries of recruitment
United Kingdom

Wales

Study participating centre
Swansea University
Singleton Park
Swansea
Wales
SA2 8PP

Sponsor information

Organisation
Swansea University

ROR
https://ror.org/053fq8t95

Funder(s)

Funder type
Charity

Funder Name
BMA Foundation for Medical Research

Alternative Name(s)
BMA Foundation

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated and analysed during the current study will be stored in a publicly available repository. Data accessible here: https://osf.io/f58ar/?view_only=0bc1365c4ab64a6c90e2182427f28c0e

IPD sharing plan summary

Stored in publicly available repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		02/09/2025	05/08/2026	Yes	No
Dataset		08/02/2020	05/08/2026	No	No