

Faculty-led mindfulness-based social-emotional learning workshops for radiology residents: Building self-awareness, resilience and community

Wenwen Ni¹ MD, Chaoyan Dong² PhD, Cynthia Assimta Peter¹ MBBS, Vidya Subrahmanya Upadhyaya¹ MD

Dear Editor,

Residency training is a formative yet demanding phase of medical education. Nearly 80% of residents experience burnout, which can harm mental health, academic performance and patient care. In the post-COVID era, physician well-being has received heightened attention. Mindfulness and reflective practices incorporating emotional learning within social contexts have been described in undergraduate and continuing medical education to reduce burnout.¹ However, literature on faculty-led, curriculum-integrated approaches tailored for residency training remains limited. This initiative applied mindfulness-based social-emotional learning (MBSEL), specifically designed for residency training and aligned with Accreditation Council for Graduate Medical Education (ACGME) competencies. The novelty of this work lies in its timing at key developmental transitions and its integration within the residency programme rather than as an optional wellness activity.

MBSEL combines contemplative practices with evidence-based social-emotional learning (SEL) strategies to foster both self-regulation and interpersonal awareness.² Mindfulness, defined as intentional awareness of the present moment with openness and acceptance, promotes emotional balance and self-awareness.³ SEL is grounded in theories of human development and aims to develop emotional intelligence, empathy and responsible decision-making.^{4,5} Together, these complementary components support skills essential for physicians navigating the relational and cognitive complexities of clinical work. This study describes the design, implementation and assessment of faculty-led MBSEL workshops delivered for 5 cohorts of radiology residents since 2022.

Using Kern's 6-step framework,⁶ the authors designed the curriculum integrating core competencies in interpersonal and communication skills, professionalism, practice-based learning and improvement, and systems-based practice. Fig. 1 provides an overview of workshop topics and educational

strategies, illustrating how the MBSEL domains were mapped to these ACGME competencies.

The overarching goal was to enhance residents' SEL competencies in clinical practice through mindfulness-based methods. The learning objectives, adapted from the MBSEL framework, targeted 5 SEL domains: (1) self-awareness: identify personal strengths and values using validated tools and mindfulness practices; (2) self-management: apply self-compassion strategies to regulate emotions and manage stress; (3) social awareness: recognise and consider multiple stakeholder perspectives in clinical contexts; (4) relationship skills: enhance communication and teamwork through reflection, role-play and peer discussion; and (5) responsible decision-making: make value-aligned decisions when navigating clinical dilemmas.

The workshops were interactive. Each 3.5-hour workshop incorporated guided mindfulness practices, individual reflection using Gibbs' reflective cycle, group reflection on real-life scenarios and peer discussions. Storytelling, role-modelling and personal examples by the faculty helped bring abstract concepts such as compassion, self-reflection and growth mindset to life. Participants completed the values in action character strengths survey and Johari window exercises beforehand and shared insights during the sessions.^{7,8}

From the second workshop onwards, topics were expanded to address residents' practical and professional needs. For example, a presentation on financial literacy was included, and senior residents shared personal experiences on navigating clinical rotations, examinations and research. Faculty panels addressed residents' questions on topics such as managing shift work, planning for pregnancy and negotiating leave, which were often overlooked in formal curricula but critical to residents' sense of agency and well-being.

Each session was led by 3 wellness champions and supported by 3 rotating faculty members who joined the 45-minute panel discussion. The programme director and a senior resident participated consistently

The Annals is an open access journal, allowing non-commercial use under CC BY-NC-SA 4.0.

¹ Department of Radiology, Sengkang General Hospital, Singapore

² Education Office, Sengkang General Hospital, Singapore

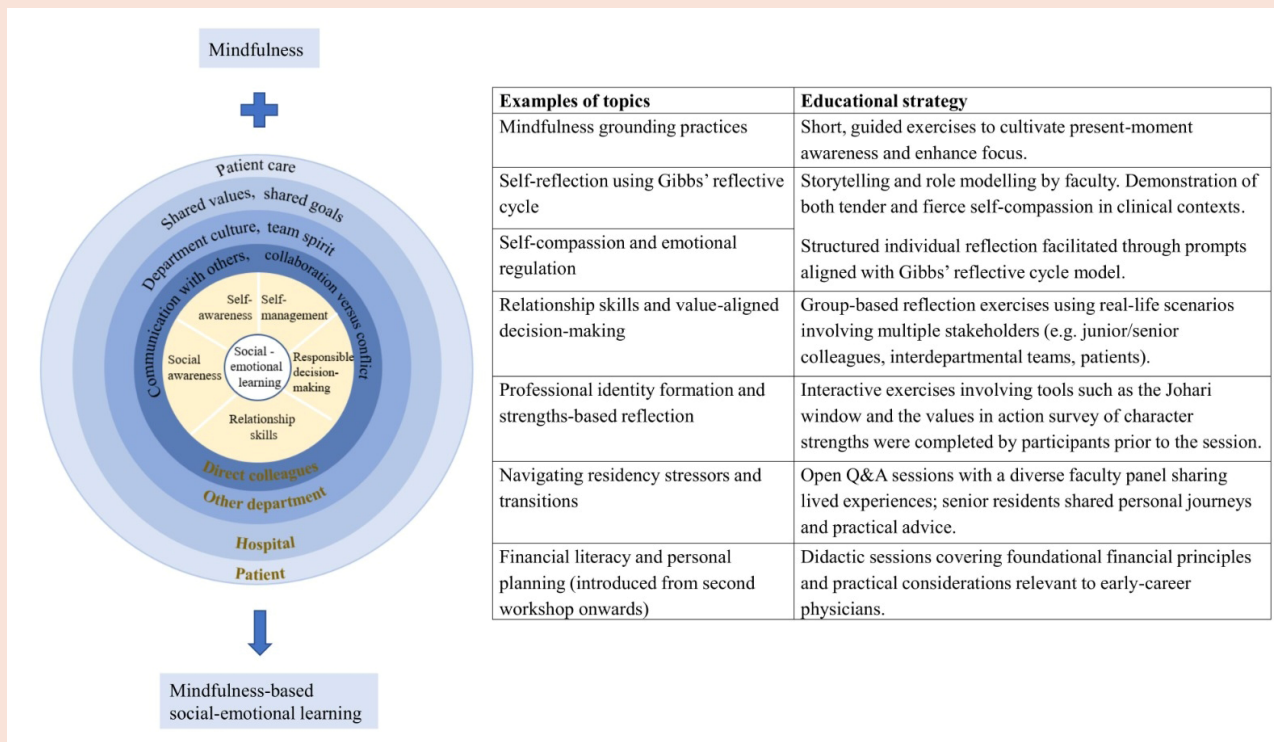
Correspondence: Dr Wenwen Ni, Department of Radiology, Sengkang General Hospital, 110 Sengkang E Wy, Singapore 544886.

Email: wenwen.ni@mohh.com.sg

Accepted: 4 March 2026

Published Online First: 24 March 2026

Fig. 1. Mindfulness-based social-emotional learning framework adapted from the Collaborative for Academic, Social, and Emotional Learning model for clinical training (left). Overview of workshop topics and corresponding educational strategies (right).



across sessions, bringing total faculty involvement to 5–7 participants per workshop. The core facilitators brought complementary expertise: formal training in mindfulness and positive psychology, senior clinical leadership experience and financial acumen from prior industry work. Rotating faculty representation promoted cross-institutional engagement and diversity of perspectives.

Workshops were tailored for junior (R1) and senior (R4) residents in their protected educational time, to ensure relevance to their training stage. R1 sessions were scheduled 6–9 months into residency, coinciding with the onset of on-call duties, while R4 sessions were held at the beginning of senior residency to address leadership responsibilities. Each session concluded with the distribution of reflective journals to encourage ongoing reflection and self-directed learning.

To assess perceived usefulness and engagement, post-workshop surveys that included both quantitative and open-ended questions were conducted. Quantitative data were analysed descriptively, while qualitative responses underwent thematic analysis using Braun and Clarke's approach.⁹ Across 5 cohorts, 82% of residents (68 of 83) participated, of whom 59 completed the survey. Most (95%) rated the sessions as "useful" or "highly useful" and 81% expressed interest in future workshops.

Qualitative analysis revealed 5 themes: (1) increased self-awareness and reflective capacity, (2) awareness of coping strategies, (3) appreciation of shared experiences, (4) financial literacy and (5) validation and belonging. The strong positive reception of the financial literacy component highlights a previously unmet need within the residency cohort, consistent with literature describing widespread financial insecurity and inadequate preparedness among residents.

The workshops were associated with high levels of resident engagement and perceived relevance across multiple cohorts, which are factors critical for the sustainability of the programme. Adapting the MBSEL framework for postgraduate training extends its applicability to clinical learning. Importantly, the benefits also extend to educators, as teacher and learner SEL are interdependent, and faculty participation may further reinforce a culture of mutual support and psychological safety.

The novelty of this work lies not in mindfulness or self-reflection as standalone interventions, but in their delivery within a community of practice. This approach enabled contextual grounding and authentic connection, likely contributing to the programme's success. Faculty sharing, guided reflection and candid faculty-resident dialogue helped normalise

vulnerability and strengthen trust, likely supporting sustained resident engagement.

These workshops are now embedded within the residency's broader educational framework, complementing mentoring and wellness initiatives such as Safe Space discussion forums.¹⁰ Consistently positive feedback and high participation rate underscore the relevance and potential scalability of MBSEL-based approaches, not only within residency education but also across other healthcare professions and beyond.

This programme evaluation has several limitations. First, outcomes were based on self-reported post-workshop feedback, reflecting perceived value rather than objective impact on participants. Second, the single data point precludes evaluation of longer-term effects on participants. Third, owing to educational and ethical constraints, randomisation and the inclusion of a non-intervention control group were not feasible. Consequently, it was not possible to fully distinguish the workshop's effects from potential confounding factors such as prior experience, peer dynamics and departmental culture. Future studies will include longitudinal evaluation using validated outcome measures.

In conclusion, faculty-led MBSEL workshops provided radiology residents with a structured framework for developing self-awareness, compassion and connection. Such initiatives represent an important step towards nurturing resilient clinicians and fostering healthier learning environments within postgraduate medical education.

Ethics statement

The programme evaluation was designated as a quality improvement initiative and therefore exempted from institutional review (10/02/2026).

Declaration

The authors declare there are no affiliations with or involvement in any organisation or entity with any

financial interest in the subject matter or materials discussed in this manuscript. All authors have no conflicts of interest to declare.

Acknowledgement

The authors thank all the residents and faculty for their enthusiastic participation in these workshops.

Keywords: *community, mindfulness, reflection, residency training, social-emotional learning*

REFERENCES

1. Tan MY, Lee SS, Aw MM, et al. Mindfulness and reflective practice pilot programme of Postgraduate Year 1 doctors: perceptions on impact and sustainability. *Singapore Med J* 2023; Online ahead of print.
2. Maloney JE, Lawlor MS, Schonert-Reichl KA, et al. A mindfulness-based social and emotional learning curriculum for school-aged children: the MindUP program. In: Schonert-Reichl KA, Roeser RW, eds. *Handbook of Mindfulness in Education: Integrating Theory and Research into Practice*. New York: Springer; 2016.
3. Kajee N, Montero-Marin J, Saunders KEA, et al. Mindfulness training in healthcare professions: A scoping review of systematic reviews. *Med Educ* 2024;58:671-86.
4. McCormick MP, Cappella E, O'Connor EE, et al. Social-Emotional Learning and Academic Achievement: Using Causal Methods to Explore Classroom-Level Mechanisms. *AERA Open* 2015;1.
5. Collaborative for Academic, Social, and Emotional Learning (CASEL). CASEL's SEL framework: what are the core competence areas and where are they promoted? <https://casel.org/casel-sel-framework-11-2020>. Accessed 4 October 2025.
6. Sweet LR, Palazzi DL. Application of Kern's Six-step approach to curriculum development by global health residents. *Educ Health (Abingdon)* 2015;28:138-41.
7. Niemiec RM. VIA Character Strengths: Research and Practice (The First 10 Years). In: Knoop H, Delle Fave A, eds. *Well-Being and Cultures. Cross-Cultural Advancements in Positive Psychology*. Dordrecht: Springer; 2013.
8. Luft J. The Johari window: a graphic model of awareness in interpersonal relations *Human Relations Training News* 1961;5:6-7.
9. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77-101.
10. Upadhyaya VS, Lim CHS, Lee ZR, et al. "Safe Space": A wellness initiative for residents. *Med Educ* 2024;58:258-9.