

Assessing Medical Student Perceptions of a United Kingdom Medical Licensing Examination (UKMLA) Aligned Applied Knowledge Test (AKT) -Focused Teaching Programme: A Longitudinal Study

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Abstract

Background

The United Kingdom Medical Licensing Assessment (UKMLA), introduced in 2024, establishes a national standard for medical graduate competence and is compulsory for registration with the General Medical Council. Evidence from similar licensing examinations supports near-peer teaching as an effective preparatory approach. This study assesses a longitudinal, near-peer, UKMLA-aligned teaching programme delivered by OSCEazy, evaluating its perceived impact on student knowledge, confidence, preparedness, motivation, and anxiety. The findings inform scalable strategies to enhance UKMLA readiness.

Methods

A longitudinal 23-session, near-peer, UKMLA-aligned teaching programme was delivered online by medical students from September 2024 to January 2025. Sessions focused on AKT preparation and were mapped to the UKMLA content framework. Pre- and post-intervention questionnaires assessed perceived knowledge, confidence, preparedness, motivation, and anxiety. Quantitative data were analysed using descriptive statistics and Wilcoxon signed-rank tests, with thematic analysis applied to free-text responses.

Results

A total of 496 responses were analysed (224 pre- and 272 post-intervention), with no baseline differences. Post-intervention, students demonstrated significant improvements in UKMLA understanding, confidence, preparedness, knowledge, and motivation (all $p \leq 0.01$), along with reduced exam-related anxiety ($p < 0.0001$). Thematic analysis revealed a shift from overall uncertainty to speciality-specific learning needs, with more students reporting no knowledge gaps. Responses regarding feelings about sitting the exam reflected decreased anxiety and uncertainty, increased confidence and positivity, and the elimination of strongly negative emotions, with reassurance emerging after the session.

Conclusion

A long-term near-peer teaching approach enhanced UKMLA knowledge, confidence, and readiness while decreasing anxiety. Incorporating such methods into undergraduate curricula could provide a scalable strategy for licensing exam preparation, meriting further assessment as the UKMLA progresses.

Introduction

The United Kingdom Medical Licensing Assessment (UKMLA), introduced in 2024, sets a national standard for the knowledge, clinical skills, and professional behaviours necessary for safe medical practice in the UK (1). Passing the UKMLA is compulsory for General Medical Council (GMC) registration

from 2024–2025 onwards, ensuring that all UK medical graduates are prepared for foundation training (2,3).

The assessment consists of two components: the Applied Knowledge Test (AKT) and the Clinical and Professional Skills Assessment (CPSA). The AKT is a computer-based, single-best-answer exam comprising 200 questions across two papers, taken from a dedicated national question bank separate from the Medical Schools Council Assessment Alliance (MSCAA) bank. Although delivered locally by medical schools as part of final assessments, the pass standard is set nationally by the GMC (4,5).

The CPSA assesses clinical and professional competencies through practical examinations, such as OSCEs. While delivery formats vary across institutions, all CPSA assessments must meet GMC standards to ensure national consistency. Preparation for both components is guided by the MLA content map, which outlines 24 areas of clinical practice, 311 conditions, 212 patient presentations, and the practical skills expected of newly qualified doctors, providing a structured framework for revision (6,7,8).

International medical graduates must also fulfil GMC requirements, including passing MLA-aligned PLAB examinations and demonstrating suitable qualifications, clinical experience, and English proficiency (9). Overall, the UKMLA indicates a major shift towards standardised assessment, replacing earlier systems to ensure a consistent national standard for safe medical practice (10).

Innovations in medical education: near-peer teaching

Innovations supporting preparation for national high-stakes medical examinations similar to the UKMLA have been well established in the United States (11). Preparation for the United States Medical Licensing Examination (USMLE) has spurred the development of near-peer teaching, which plays a key role in improving student performance within a highly competitive and standardised assessment framework (12). The widespread adoption of near-peer teaching for USMLE preparation emphasises the importance of structured support alongside a standardised curriculum. As other countries introduce national medical licensing assessments, similar preparatory resources become especially vital during the early stages of adoption (13). Although medical school curricula are broadly standardised, additional educational infrastructure may be needed to promote equity, preparedness, and sustained student support during both transitional and long-term implementation of the UKMLA (14,15,16).

OSCEazy: Teaching by medical students for medical students

In response to demand for support with the UKMLA, OSCEazy, a student-led online medical education platform, delivered a 23-part teaching series aligned with the UKMLA content map. This service evaluation examines how a structured series influences students' pre- and post-session understanding, confidence, preparedness, anxiety, motivation, and knowledge, providing evidence for other organisations or medical schools to replicate or adapt the model.

Using a near-peer approach, senior students who have completed medical school finals or the UKMLA teach juniors. Tutors, having recently learned the material themselves, present concepts in a relatable and accessible way, benefiting both tutors, who consolidate their knowledge, and tutees, who gain a clearer understanding of complex topics (17). Social and cognitive congruence, where tutors share a similar knowledge base and social role, enhances engagement, attendance, and satisfaction compared with traditional teaching (18,19,20). OSCEazy materials are standardised with themed templates, peer-reviewed to minimise errors, and shared with participants alongside session recordings for flexible review.

With the recent introduction of the UKMLA, targeted educational interventions are essential to optimise student preparedness. By evaluating this AKT-focused teaching programme and student perceptions, the study provides timely insights into incorporating near-peer longitudinal teaching for UKMLA preparation while examining its effect on knowledge acquisition, confidence, and overall readiness.

This study aimed to evaluate the impact of a 23-part UKMLA-focused teaching series on medical students' 1) understanding, confidence, and preparedness for the UKMLA, including overall and topic-specific knowledge, 2) anxiety and motivation related to preparing for and attending UKMLA-focused educational sessions, and 3) perceptions of the requirement and relevance of the UKMLA within their medical school.

Methods

Near-Peer Teaching: Session Design and Delivery

Between 24th September 2024 and 9th January 2025, OSCEazy, a student-led online medical education platform, delivered a 23-part teaching series aligned with the UKMLA content map. Sessions were led by final-year medical students and livestreamed via the MedAll™ platform, lasting 2 hours each.

The programme concentrated on the AKT component of the UKMLA, with each session aligned to the UKMLA content framework. All participants were encouraged to complete a structured questionnaire before and after the series, allowing an assessment of changes in knowledge, confidence, preparedness, motivation, and anxiety related to exam preparation.

Questionnaire Design and Dissemination

A feedback questionnaire was created using Google Forms™ and administered before and after each session. It included 13 items, with five focusing on the participant's year group, study location, and awareness of UKMLA requirements at their home institutions. Six items assessed perceived session impact using 5-point Likert scales, and two open-text questions explored perceived knowledge gaps and attitudes towards the UKMLA. Open-text responses were analysed thematically by one author (BL), with review and discussion by a second author (RB).

The aims of this study were to evaluate the impact of a 23-part UKMLA-focused teaching series on medical students i) Understanding, confidence, and preparedness for the UKMLA, including overall and topic-specific knowledge, ii) Anxiety and motivation related to preparing for and attending UKMLA-focused educational sessions and iii) Perceptions of the requirement and relevance of the UKMLA within their medical school.

Ethical Considerations

This study served as a service evaluation to determine the effectiveness of an online research teaching session. The NHS Research Authority's online decision tool indicated that ethical approval was not necessary for this study. According to the Declaration of Helsinki, ethical approval is not required as it is a service evaluation of a teaching session and does not involve biomedical research. The Cardiff University School of Medicine Research Ethics Committee was consulted, and it confirmed that formal approval was not required. Students were informed about the voluntary nature of this study, and all collected data was anonymised in accordance with the General Data Protection Regulation (GDPR). Excerpt used at the top of the Microsoft Form was as follows:

"All data will be stored according to GDPR guidelines. By filling in this form, you are providing consent for use of your data in an anonymised fashion for any future academic publication.

Taking part is completely voluntary. By filling this questionnaire you are giving your consent to participate in this study and for use of your anonymised data for future publication. Any responses you provide are anonymous. Participating in this survey indicates that you are consenting to the handling of data in accordance with Article 6(1)(a) General Data Protection Regulation (GDPR) principles in the UK. Data will be retained for 3 years for the purposes of trend analysis and analytics, in accordance with Cardiff University Policy. Access to the data is only granted to the primary authors. The data will be used for academic publications and will be stored in a password-protected account."

Statistical Analysis

Data was analysed using Microsoft Excel (2025) and GraphPad (Version 10.6.1). Descriptive statistics summarised responses to obtain mean, standard deviations, median and interquartile ranges. Pre and post-session unpaired non-parametric data were compared using the Mann–Whitney U test, with significance defined as $p < 0.05$.

Results

Student perceptions and feedback

A total of 496 questionnaire responses were received, including 224 pre-session and 272 post-session responses. Attendee characteristics and outcomes are detailed in Table 1.

				Mann-Whitney test comparing Pre and Post session responses	
Variable	Descriptive statistic	Pre-Session (n= 224)	Post-session (n=272)	P-Value	Significance
Medical School Year	Mean (±SD):	4.50 (±1.08)	4.55 (±1.14)	0.4362	ns
	Median (IQR):	5 (1)	5 (1)		
	Range (Min-Max):	5(6-1)	5 (6-1)		
Understanding of UKMLA	Mean (±SD):	6.17 (±2..21)	7.08 (±2.07)	<0.0001	****
	Median (IQR):	6 (3)	7 (2)		
	Range (Min-Max):	10 (10-0)	10 (10-0)		
Confidence of passing the UKMLA	Mean (±SD):	5.31 (±2.22)	6.75 (±1.98)	<0.0001	****
	Median (IQR):	6 (3)	7 (2)		
	Range (Min-Max):	10 (10-0)	10 (10-0)		
Preparedness for passing UKMLA	Mean (±SD):	5.18 (±2.22)	6.63 (±2.074)	<0.0001	****
	Median (IQR):	5 (3)	7 (3)		
	Range (Min-Max):	10 (10-0)	10 (10-0)		
Anxiety for passing UKMLA	Mean (±SD):	7.50 (±2.23)	6.60 (±2.48)	<0.0001	****
	Median (IQR):	8 (4)	7 (4)		
	Range (Min-Max):	10 (10-0)	10 (10-0)		
Motivation for attending UKMLA focused events	Mean (±SD):	7.63 (±2.39)	8.30 (±1.85)	0.0058	**
	Median (IQR):	8 (4)	9 (3)		

	Range (Min-Max):	10 (10-0)	10 (10-0)		
Overall UKMLA knowledge	Mean ($\pm$ SD):	5.49 ($\pm$ 2.08)	6.82 ($\pm$ 2.00)	<0.0001	****
	Median (IQR):	6 (2)	7 (2)		
	Range (Min-Max):	10 (10-0)	10 (10-0)		
Topic specific UKMLA knowledge	Mean ($\pm$ SD):	5.08 ($\pm$ 2.14)	7.05 ($\pm$ 2.03)	<0.0001	****
	Median (IQR):	5 (2)	7 (2)		
	Range (Min-Max):	10 (10-0)	10 (10-0)		

Note: SD = Standard Deviation; IQR = Inter Quartile Range; ns = Not Significant; ** P value <0.01; **P value <0.0001 = Significant**

Table 1:Comparative Analysis of Pre and Post-Intervention Responses from the UKMLA Teaching

Most participants reported that the UKMLA was part of their medical school assessments (n=434, 88%), as illustrated in Figure 1. Conversely, 31 students (6%) stated that the UKMLA was not a requirement at their institution, and another 31 students (6%) were unsure (Figure 1).

Respondents ranged from Years 1–6, with Year 5 most commonly represented. There was no significant difference in the distribution of year-of-study between pre- and post-session cohorts (p=0.4362). The average year of study was 4.50 ± 1.08 before the session and 4.55 ± 1.14 after the session (median=5, IQR=1 for both). Participation in the teaching series was linked to statistically significant improvements across all measured areas. Understanding of the UKMLA increased notably, with mean scores rising from 6.17 ± 2.21 before the session to 7.08 ± 2.07 afterwards (median 6 [IQR=3] vs. 7 [IQR=2]; p<0.001). Students also reported a significant boost in confidence in passing the UKMLA, improving from 5.31 ± 2.22 to 6.75 ± 1.98 (median 6 [IQR=3] to 7 [IQR=2]; p<0.0001).

Similarly, preparedness for the examination showed a significant improvement, rising from 5.18 ± 2.22 to 6.63 ± 2.07 (median 5 [IQR=3] to 7 [IQR=3]; p<0.0001). Participants also demonstrated increased motivation to attend UKMLA-focused teaching events, with scores going up from 7.63 ± 2.39 to 8.30 ± 1.85 (median 8 [IQR=4] to 9 [IQR=3]; p=0.0058). Overall UKMLA-related knowledge improved from 5.49 ± 2.08 to 6.82 ± 2.00 (median 6 [IQR=2] to 7 [IQR=2]; p<0.0001), while topic-specific knowledge rose from 5.08 ± 2.14 to 7.05 ± 2.03 (median 5 [IQR=2] to 7 [IQR=2]; p<0.0001).

In contrast to the positive trends in knowledge and preparedness, participants reported a significant decrease in anxiety about passing the UKMLA, with mean scores dropping from 7.50 ± 2.23 to 6.60 ± 2.48

(median 8 [IQR=4] to 7 [IQR=4]; $p<0.0001$). Overall, the 23-part teaching programme was linked to statistically significant improvements in student understanding, confidence, preparedness, motivation, and knowledge, alongside a reduction in exam-related anxiety.

Thematic perceptions and feedback

Thematic analysis of the free-text responses about the knowledge gaps students identified revealed 30 themes overall, both before and after the session, reflecting their experiences of the teaching. This is summarised in Table 2 and illustrated in Figures 2a, 2b, and 3 (Figure 2a)(Figure 2b)(Figure 3).

Thematic analysis of the 224 pre-session free-text responses revealed that the most frequently reported categories were “All Topics” ($n=51$, 22.57%) and “None Reported” ($n=50$, 22.12%), suggesting either broad concerns across the curriculum or difficulty identifying specific areas of weakness. Among particular subject areas, the most commonly mentioned themes included Cardiology ($n=18$, 7.96%), Management ($n=18$, 7.96%), Diagnosis ($n=14$, 6.19%), Gastroenterology ($n=10$, 4.42%), Pharmacology ($n=9$, 3.98%), Respiratory Medicine ($n=8$, 3.54%), and areas of uncertainty (“Unsure”, $n=8$, 3.54%). Less frequently noted but still significant were Neurology ($n=6$, 2.65%), Obstetrics and Gynaecology ($n=5$, 2.21%), Dermatology ($n=2$, 0.88%), Psychiatry ($n=2$, 0.88%), Renal ($n=2$, 0.88%), alongside several other themes reported only occasionally ($n=1-3$, 0.44–1.33%), including Acute Medicine, Data Interpretation, Endocrinology, Infectious Disease, Ophthalmology, Paediatrics, Physiology, Metabolism, Basic Science, Diabetes, Investigations, and Rheumatology.

A thematic analysis of the 272 post-session free-text responses showed a diverse range of reported learning needs, with the most common category being “None Reported” ($n=90$, 33.09%), indicating that a significant number of participants did not specify a particular area of difficulty. Among the identified themes, Cardiology made up the largest proportion ($n=27$, 9.93%), followed by Pharmacology ($n=14$, 5.15%), Management ($n=13$, 4.78%), Gastroenterology ($n=11$, 4.04%), Diagnosis ($n=10$, 3.68%), and Neurology ($n=9$, 3.31%), reflecting frequently encountered areas of perceived educational uncertainty. Compared to pre-session responses, fewer participants reported uncertainty about specific knowledge gaps ($n=8$, 2.94%), along with an increase in the recognition of topic-specific specialties after the session, as shown in Table 2.

Thematic Analysis	Pre-Session Proportion %	Post-Session Proportion %
Acute Medicine	0.44	0
All Topics	22.57	17.28
Anaesthetics	0	0.37
Basic Science	1.33	0.37
Cardiology	7.96	9.93
Data Interpretation	0.44	0.37
Dermatology	0.88	0
Diabetes	0.88	0.37
Diagnosis	6.19	3.68
Endocrinology	0.44	0.74
Gastroenterology	4.42	4.04
Infectious Disease	0.44	0
Investigations	1.32	0.74
Management	7.96	4.78
Metabolism	0.44	0.74
Neurology	2.65	3.31
None Reported	2.21	33.09
Obstetrics and Gynaecology	2.21	1.84
Ophthalmology	0.44	1.47
Orthopaedics	0	0.37
Paediatrics	0.44	1.47
Pharmacology	3.98	5.15
Physiology	0.44	0.74
Psychiatry	0.88	1.1
Renal	0.88	0.74
Respiratory	3.54	1.47
Rheumatology	1.33	0
Surgery	1.33	2.21

Treatment	0	0.74
Unsure	3.54	2.94

Table 2: Pre- and Post-session Thematic Analysis of Student Identified Knowledge Gaps Free Text Responses

Thematic analysis of responses concerning feelings towards sitting the UKMLA identified 20 distinct emotional themes across pre- and post-session questionnaires, as shown in Table 3 and Figures 4a, 4b, and 5 (Figure 4a)(Figure 4b)(Figure 5).

Theme	Pre-session (n=224) %	Post-session (n=272) %
Alright	0.89	0
Anxiety	13.84	8.09
Apprehensive	0	1.1
Awful	0.45	0
Confident	2.23	14.34
Excited	1.79	0
Good	20.09	27.21
Great	0.89	4.78
Lost	0.45	0
Motivated	0.89	1.84
Nervous	10.27	4.78
None	16.96	16.54
Not sure	5.36	3.31
Okay	5.8	12.13
Reassured	0	0.37
Scared	6.25	1.84
Stress	8.93	2.21
Terrified	0.89	0
Underprepared	2.23	0
Worried	1.79	1.47

Table 3: Pre- and Post-session Thematic Analysis of Student's feelings towards sitting the UKMLA Free Text Responses

Following the teaching intervention, anxiety decreased from 13.84% to 8.09%, while self-reported confidence increased from 2.23% to 14.34%. Feelings of nervousness also declined (10.27% to 4.78%). Neutral responses of "okay" increased from 5.80% to 12.13%, alongside an increase in positive ("good") emotions from 20.09% to 27.21%.

The proportion of respondents reporting no specific feelings remained steady (16.96% pre-session vs 16.54% post-session), while "not sure" responses decreased from 5.36% to 3.31%. Notably, strongly negative emotions such as "terrified," "underprepared," "lost," and "awful" were reported only pre-session, whereas "reassured" and "apprehensive" appeared exclusively post-session.

Discussion

Student Awareness and Understanding of the UKMLA

This study is the first to assess a near-peer, longitudinal teaching model for UKMLA preparation, demonstrating feasibility and high acceptability. Other approaches, including a student-centred curriculum mapping process that aligned local teaching with UKMLA content, have also been examined (21,22,23).

Given the UKMLA's 2024 introduction, students' understanding of its requirements remains variable (24). While staff awareness is high in another study (67% correct responses), students' awareness appears less consistent (25). This was highlighted in our cohort, where 6% of participants were unsure whether the UKMLA applied to them, and a further 6% believed it was not a curricular requirement, likely reflecting international students attending the session. These findings highlight ongoing gaps in understanding of the UKMLA's role and requirements, reinforcing the need for targeted preparatory education beyond content alone (26).

Thematic analysis showed a clear shift in emotional responses after the teaching sessions, with less anxiety and nervousness and more confidence and positive feelings, indicating better emotional readiness for the UKMLA. The rise in neutral ("okay") responses suggests perceptions have normalised, probably reflecting a better understanding of assessment expectations.

Strongly negative emotions such as "terrified," "underprepared," and "lost" were absent after the session, while "reassured" appeared, emphasising the emotional benefit of structured preparation beyond just knowledge. However, ongoing apprehension and consistent reports of no particular feelings suggest individual differences and imply that some anxiety might be inevitable in a high-stakes national assessment. Overall, these findings suggest that near-peer, structured teaching can support both cognitive and emotional readiness for the UKMLA, with potential implications for student wellbeing and engagement (27,28).

Although most participants were senior medical students, particularly Year 5, UKMLA awareness initiatives should extend to earlier cohorts. This is supported by a recent study proposing proactive support from educators through a “4As” framework, Approach, Awareness, Assistance, and Application, to enhance International Medical Graduate success in the Applied Knowledge Test, emphasising that effective preparation requires both knowledge and understanding of exam structure and requirements (29,30,31). This study aimed to address this by providing students with a UKMLA overview and a precise alignment of all 23 sessions with the UKMLA content map, a structured approach that may support earlier preparation while reducing institutional burden beyond content delivery (32,33,34,35).

Teaching Intervention Educational Impact

No baseline differences were observed between pre- and post-cohorts, supporting a robust evaluation of the intervention. Post-session, students demonstrated significant improvements in UKMLA understanding, confidence, preparedness, and overall and topic-specific knowledge (all $p < 0.0001$), alongside reduced exam-related anxiety ($p < 0.0001$). Motivation to attend future UKMLA-focused sessions also increased ($p = 0.0058$), indicating benefits beyond immediate assessment preparation.

Interactive near-peer teaching strategies were highly valued, likely reflecting cognitive and social congruence between tutors and learners. This relatability may facilitate the delivery of targeted, exam-focused guidance that is less readily achieved within traditional faculty-led teaching models (36,37,38). Consistent with this, peer-led teaching has been shown to enhance learner engagement and confidence while also offering reciprocal benefits for peer tutors, including gains in subject knowledge, pedagogical skills, and personal development (18,39,40).

Within the wider UKMLA context, educators have expressed concerns about increased workload and institutional pressures due to expanding medical student numbers (41). In this setting, the effectiveness of this peer-led, curriculum-aligned intervention demonstrates its potential to improve student preparedness while alleviating institutional burden. Such student-centred approaches play a valuable role in supporting UKMLA implementation (42,43,44).

Structure and Impact of the Longitudinal Teaching Programme

The 23-part longitudinal series aimed to improve curricular coherence by strengthening links across the UKMLA content map. By revisiting interconnected topics, the programme supported knowledge consolidation and reflected spiral curriculum principles, promoting progressive learning, deeper understanding, retention, and confidence (45). Spiral curricula enable the integration of new and prior knowledge through iterative reinforcement at increasing levels of complexity, supporting progressive competency development and better learning outcomes, including deeper understanding, enhanced retention, confidence, and problem-solving skills (46,47).

Recent evidence shows that students increasingly prioritise UKMLA-aligned content, highlighting the need for institution-wide curriculum mapping. Participatory approaches to UKMLA alignment have been

shown to improve learning resources, curricular transparency, and accessibility for both students and educators (48). These findings reflect broader challenges in achieving curriculum coherence, with curriculum mapping recognised as a vital tool for aligning intended, taught, and learned curricula, and for ensuring consistent learning outcomes across specialities in response to patient safety and graduate preparedness imperatives (49). In this context, this longitudinal, near-peer, UKMLA-aligned intervention provides a pedagogically grounded model for integrating national assessment requirements into local curricula, with the potential to improve learning coherence, readiness, and educational quality (50).

Changes in Knowledge Gaps Pre and Post-Intervention

Thematic analysis identified 30 themes highlighting areas for improvement both before and after the sessions, demonstrating the value of this approach in capturing learner needs and guiding educational refinement. Pre-session responses showed widespread uncertainty across topics, with no consistently identified weaknesses, indicating difficulty in recognising specific knowledge gaps. This aligns with prior studies showing that students often report diffuse concerns rather than discrete deficits (51).

Post-intervention, students reported clearer learning priorities, improved insight into areas requiring further support, and reduced uncertainty (from 3.54% to 2.94%), consistent with evidence that structured teaching clarifies learning needs (52). As shown in Figure 2a, initial concerns focused on broad domains, including cardiology, diagnostics, management, and pharmacology.

After the intervention, as shown in Figure 2b, identified gaps became more specific to specialities and varied, indicating increased confidence, consolidation of fundamental knowledge, and better self-assessment.

While performance-based validation of self-identified weaknesses was beyond the scope of this study, future work could triangulate free-text responses with assessment data and emerging preparatory tools, including large language models, which have demonstrated variable performance across UKMLA domains, performing best in mental health and cardiovascular specialities but struggling with clinical haematology and endocrine topics (53,54,55).

The rapid development and expansion of Large Language Models (LLMs) in Generative Artificial Intelligence (GAI) capabilities have contributed to improvements across a wide range of domains and specialities. Based on our findings, a precedent could be established for cautious adoption of these LLMs to personalise UKMLA content for individual learners. This tailored educational approach would not only enhance students' learning experiences but also help manage the logistical and resource-intensive demands of UKMLA-specific medical education, alongside didactic synchronous and asynchronous learning materials provided by lecturers (56,57,58,59,60). Such approaches require careful integration to maintain educational quality while promoting standardisation (61).

Limitations

The limited number of tutors and variability across sessions limit generalisability, underscoring the need for larger studies that account for tutor effects. Despite a substantial student sample, voluntary participation may have introduced self-selection bias. Most participants were in the later years of training, although the intervention was open to all stages of UKMLA preparation, which could limit its representativeness. Future studies should focus on cohorts closer to the UKMLA and integrate the intervention within formal curricula to minimise selection bias.

This study assessed longitudinal near-peer teaching aligned with the Applied Knowledge Test (AKT). Although AKT knowledge underpins CPSA performance, applying this model directly to CPSA would better demonstrate its relevance across both UKMLA components. Additionally, future research could compare entirely online, face-to-face, and blended delivery formats to evaluate differences in educational effectiveness.

Conclusion

These initial findings support the effectiveness of a longitudinal near-peer teaching model for UKMLA preparation, with students reporting enhanced knowledge, confidence, and readiness, along with decreased anxiety. Incorporating sustained near-peer teaching into undergraduate curricula may offer an equitable and resource-efficient way to prepare institutions for national licensing examinations. Further research is required to evaluate the long-term effectiveness and applicability of this model as the UKMLA becomes more established and its assessment framework develops.

Abbreviations

UKMLA: United Kingdom Medical Licensing Assessment

GMC: General Medical Council

AKT: Applied Knowledge Test

CPSA: Clinical and Professional Skills Assessment

IQR: Interquartile Range

MLA: Medical Licensing Assessment

MSCAA: Medical Schools Council Assessment Alliance

OSCE: Objective Structured Clinical Examination

PLAB: Professional and Linguistic Assessments Board

USMLE: United States Medical Licensing Examination

LLM: Large Language Model

GAI: Generative Artificial Intelligence

Declarations

Declaration of Interest: The authors report no conflicts of interest.

The authors report no statements or declarations.

Competing Interests and Funding

The authors report no conflicts of interest and funding.

Ethics approval and consent to participate

The Cardiff University School of Medicine Research Ethics Committee (SOMREC) confirmed that formal approval was not required.

Informed consent was gained from participants. The following excerpt was included at the beginning of every form.

“All data will be stored according to GDPR guidelines. By filling in this form, you are providing consent for use of your data in an anonymised fashion for any future academic publication.

Taking part is entirely voluntary. By filling this questionnaire, you are giving your consent to participate in this study and for the use of your anonymised data for future publication. Any responses you provide are anonymous. Participating in this survey indicates that you are consenting to the handling of data in accordance with Article 6(1)(a) General Data Protection Regulation (GDPR) principles in the UK. Data will be retained for 3 years for trend analysis and analytics, in accordance with Cardiff University Policy. Access to the data is only granted to the primary authors. The data will be used for academic publications and will be stored in a password-protected account.”

Consent for publication

Not Applicable

Availability of data and material

All data generated or analysed during this study are included in this published article [and its supplementary information files]

Competing interests

The authors report no competing or conflicting interests.

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Notes on Contributors

BL was the first author and contributed to data collection, data analysis and writing the manuscript. JB, MG, CYL, AS, AS, EH, MH, and SS contributed to manuscript review and editing. BKS, JC, ADA, and MC, AH were authors who contributed to the study's conceptualisation and to the review and editing of the manuscript. RB contributed to the study's conceptualisation, data analysis, and manuscript writing. AH and RB are to be considered as Co-Senior Authors.

Consent for Publication

All authors have reviewed the final manuscript and consent to its publication in BMC Medical Education.

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Figures

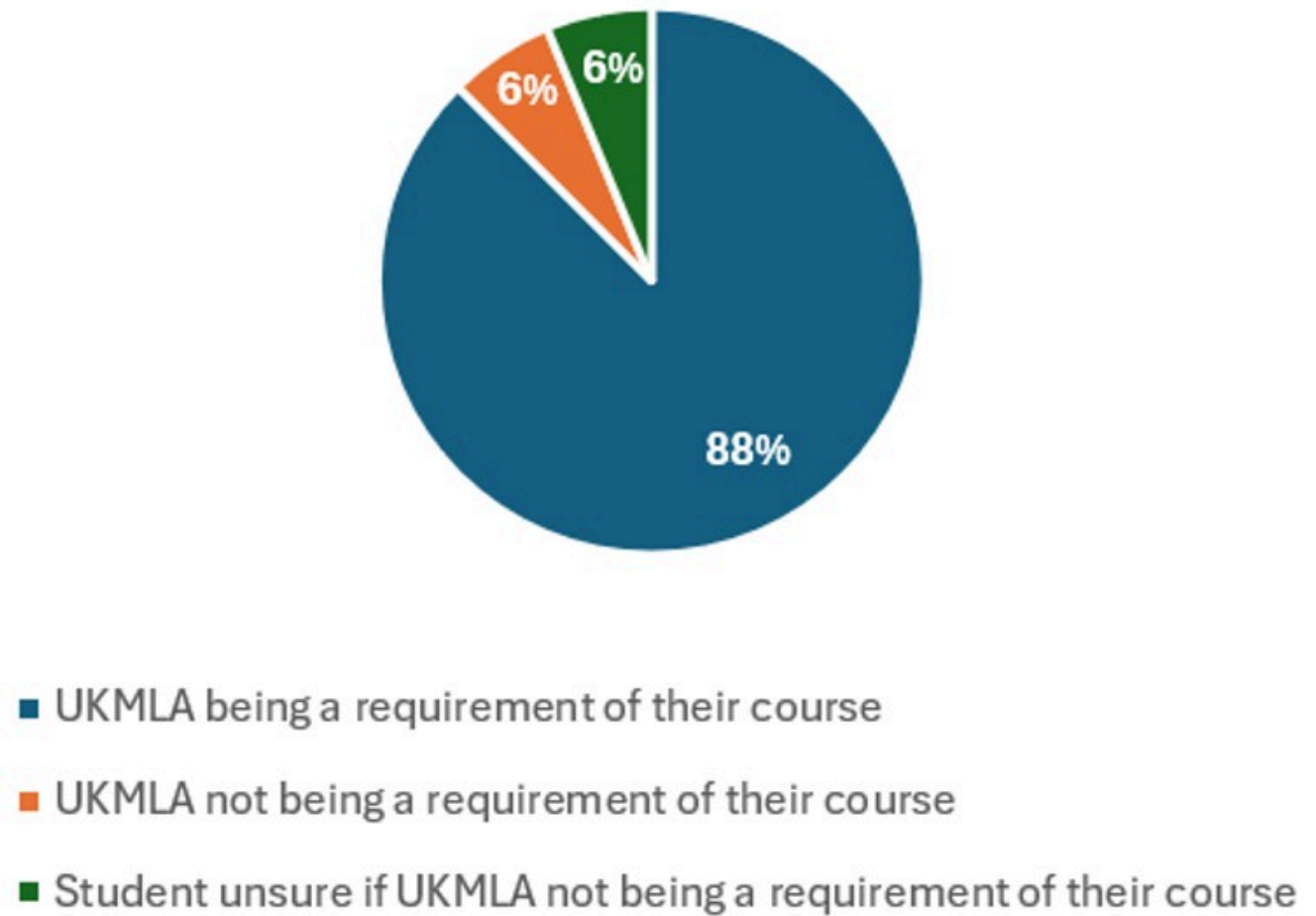


Figure 1

Overall Proportion of students aware of UKMLA course requirements

Pre-session Thematic Analysis of Free Text Responses

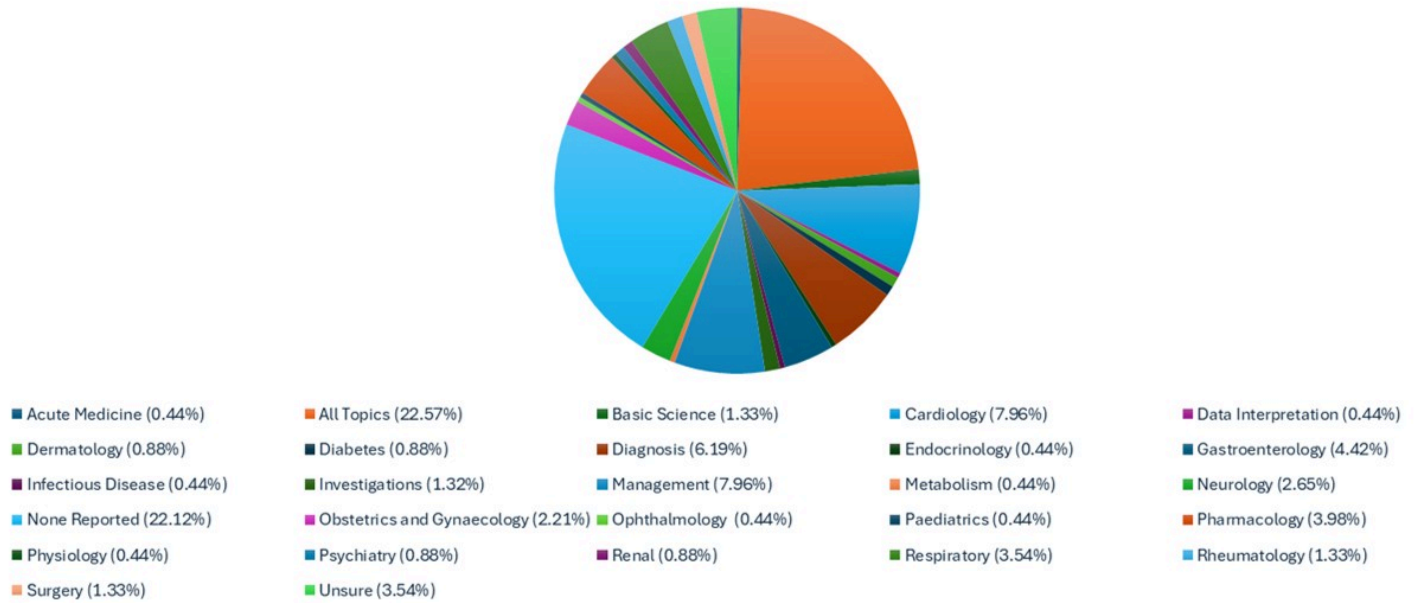


Figure 2

Figure 2a: Pre-session Thematic Analysis of Student Identified Knowledge Gaps Free Text Responses

Post Session Thematic Analysis

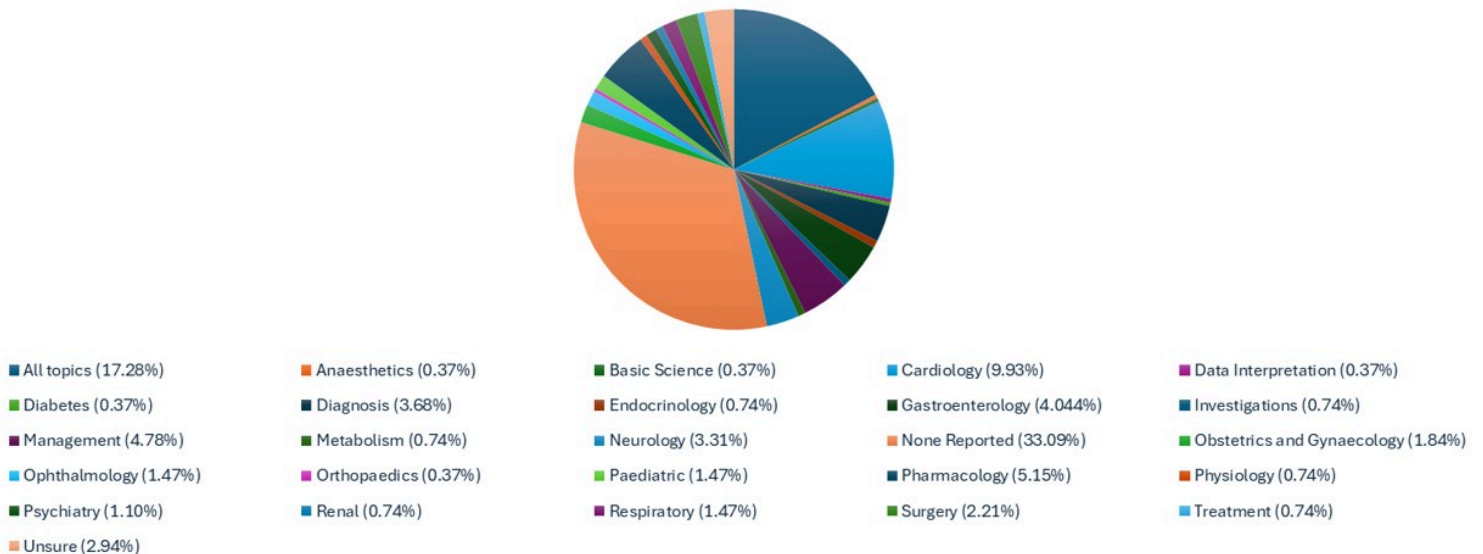


Figure 3

Figure 2b: Post-session Thematic Analysis of Student Identified Knowledge Gaps Free Text Responses

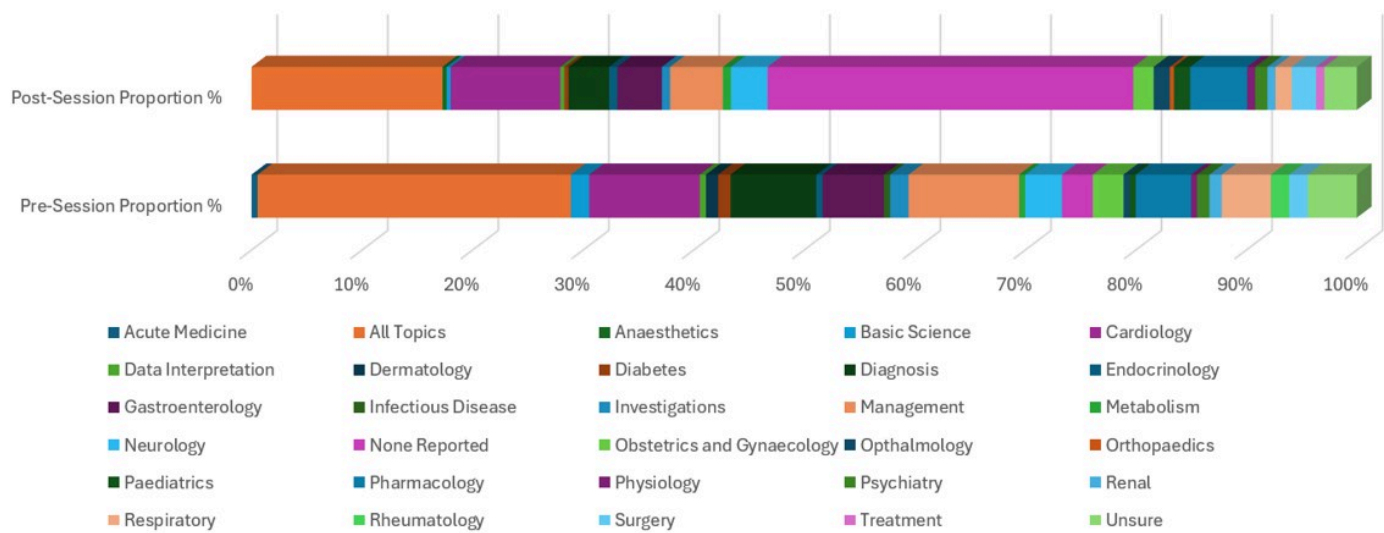


Figure 4

Figure 3: Overall Pre and Post-session Thematic Analysis of Student Identified Knowledge Gaps Free Text Responses

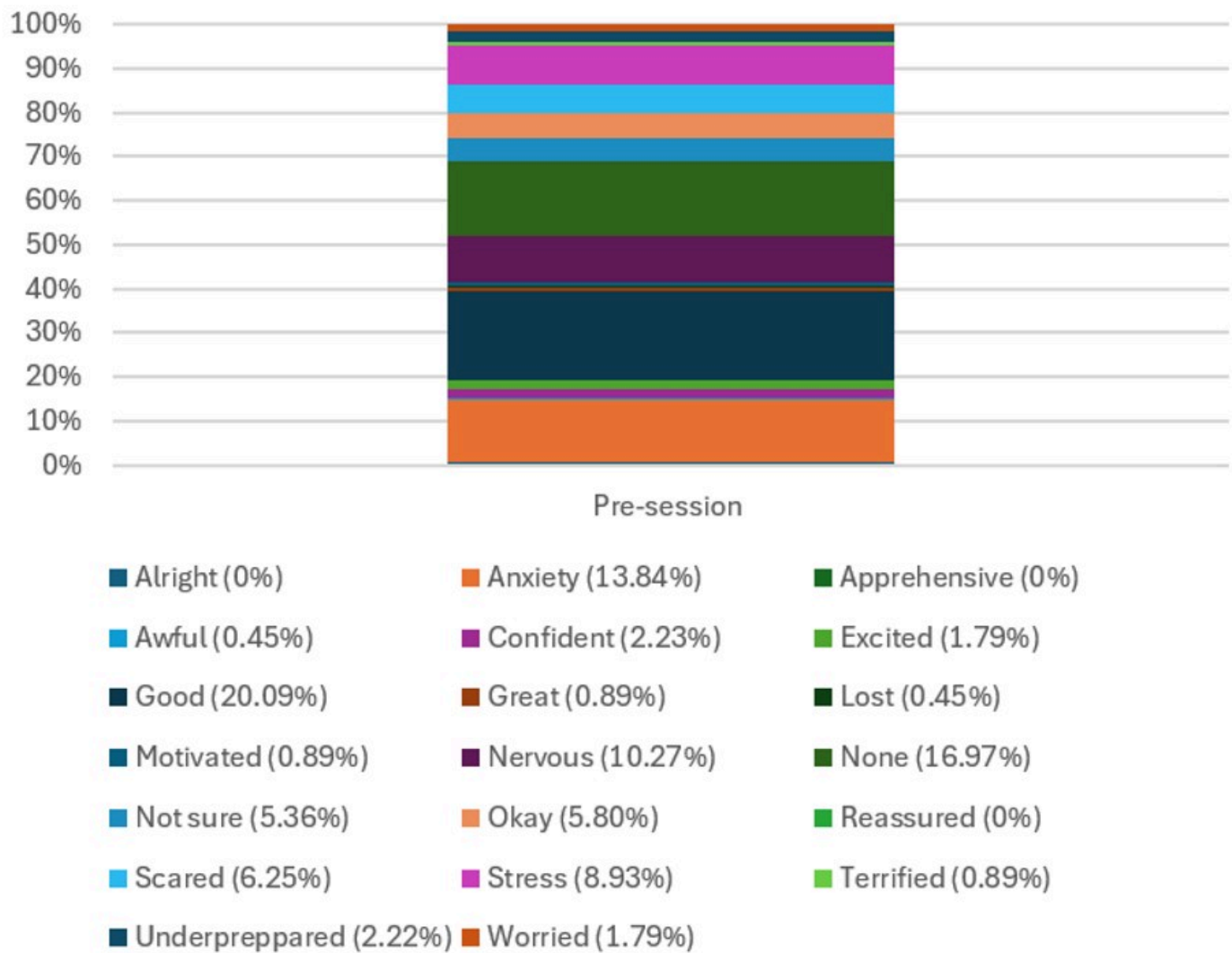


Figure 5

Figure 4a: Pre-session Thematic Analysis of Student's feelings towards sitting the UKMLA Free Text Responses

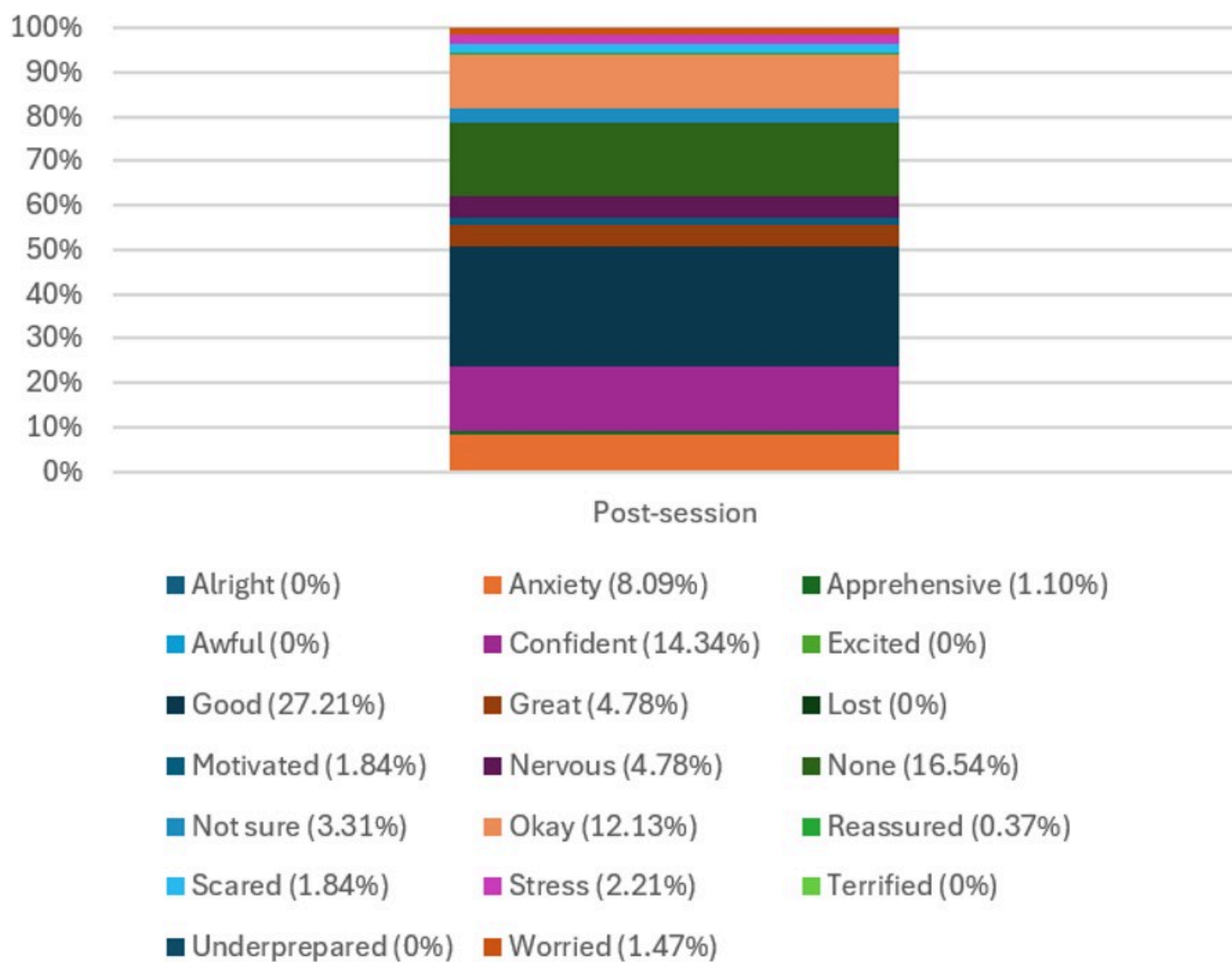


Figure 6

Figure 4b: Pre-session Thematic Analysis of Student's feelings towards sitting the UKMLA Free Text Responses

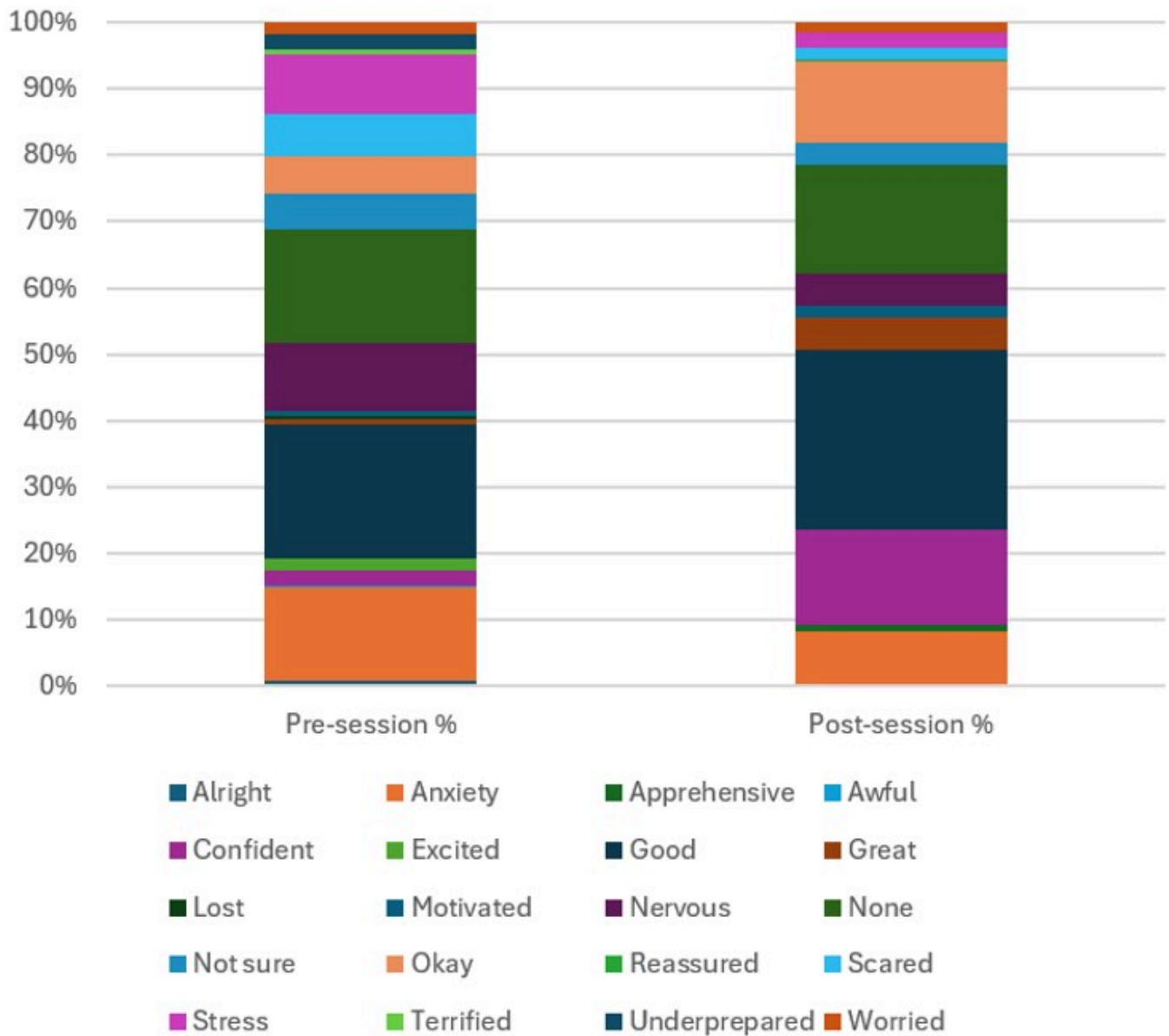


Figure 7

Figure 5: Overall pre and post-session Thematic Analysis of Student's feelings towards sitting the UKMLA Free Text Responses

Supplementary Files

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- [UKMLAQuestions.docx](#)
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