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Original Article

Internal Medicine Section

Experiences of Undergraduate Medical Students during a Supervised Emergency-based Elective in Northern India: A Mixed-methods Study

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ABSTRACT

Introduction: Short emergency-based electives may help undergraduate medical students connect classroom learning with acute-care clinical practice; however, published evaluations of such electives within Indian undergraduate medical programmes remain limited. This mixed-methods educational evaluation examined learner experiences using longitudinal reflective data, with pre-post educational questionnaires providing contextual educational indicators following a two-week supervised emergency-based elective.

Aim: To explore undergraduate medical students' learning experiences during a supervised emergency-based elective and to describe associated contextual pre-post educational indicators.

Materials and Methods: The present mixed-methods study was conducted at Dr. B.R. Ambedkar State Institute of Medical Sciences, Mohali, Punjab, India, from February 2026 to April 2026. It involved a retrospective secondary analysis of routinely collected educational data from four Phase III Part II MBBS students who had completed a two-week supervised emergency-based elective. Primary qualitative sources were a baseline expectations form, daily reflections on learning experience and detailed written post-elective feedback. Pre-post educational instruments were used only to contextualise the qualitative narratives and were not treated as primary outcome measures or evidence of effectiveness. Qualitative and quantitative data were analysed separately and integrated during interpretation.

Results: All 4 students (100%) completed the three paired contextual instruments. Daily reflections were submitted for 45 out of 48 (93.8%). Post-elective knowledge and self-efficacy scores improved for all students, though communication self-assessment showed mixed results. Qualitative analysis revealed five themes: initial anxiety, connection of classroom learning to real patient encounters, procedural exposure gaps, communication under pressure, and development of confidence with awareness of limits.

Conclusion: The supervised emergency-based elective helped students progress from initial anxiety to confidence in engaging in clinical activities under supervision. Reflections showed that students learned about professional development, communication, and recognition of personal limitations, connecting classroom knowledge to clinical practice. While these findings do not confirm independent emergency-care competence, they suggest that well-structured emergency electives can offer valuable introductory experiences in undergraduate medical education. Larger studies with validated assessments and longer follow-up are necessary to validate these observations.

Keywords: Bachelor of Medicine and Bachelor of Surgery, Clinical competence, Competency-based, Education, Knowledge

INTRODUCTION

Early exposure to Emergency Departments through supervised electives provides a distinctive learning environment for undergraduate medical students by exposing them to acute illnesses, undifferentiated presentations, rapid clinical decision-making, multidisciplinary teamwork, communication under pressure, and procedural observation. Unlike traditional ward-based teaching, emergency-care settings require students to integrate theoretical knowledge with real-time clinical reasoning while adapting to uncertainty, competing priorities, and time-sensitive decision-making. Such experiential learning may help students relate theoretical knowledge to authentic clinical situations while developing awareness of clinical prioritisation, multidisciplinary teamwork, and professional responsibilities under supervision [1].

Internationally, emergency medicine clerkships and electives have become established components of undergraduate medical education. A study by Garmel GM et al., reported that structured emergency rotations provide supervised clinical exposure supported by clearly defined learning objectives, bedside teaching, structured case discussions and regular feedback [2]. Such experiences have also been associated with improved perceived self-efficacy among undergraduate learners, although they are not intended to establish independent clinical competence [3]. Therefore, realistic educational outcomes include familiarisation with emergency workflows, perceived self-efficacy, and readiness to participate appropriately under supervision rather than independent emergency-care competence [3].

In India, the implementation of the National Medical Commission Competency-Based Medical Education (CBME) curriculum has introduced electives as an opportunity for self-directed, interest-based learning beyond the prescribed core curriculum [4]. These electives enable students to explore disciplines of professional interest while participating in supervised clinical experiences that complement classroom teaching. Within the CBME framework, electives also provide flexibility for institutions to design locally relevant learning experiences that complement core competencies while exposing students to authentic clinical environments. Such structured clinical immersion may facilitate integration of theoretical knowledge with workplace learning under close faculty supervision. Emergency-based electives may provide undergraduate students

with supervised exposure to acute-care workflows and authentic clinical encounters, as demonstrated in a recently reported Indian emergency medicine elective [5]. Despite increasing implementation of undergraduate electives under the CBME curriculum, published evaluations of emergency-care electives from India remain limited, with relatively little information regarding students' longitudinal learning experiences.

Learning during emergency-care electives extends beyond the acquisition of factual knowledge alone. Students observe clinicians communicating with patients and families, appreciate teamwork and patient-safety practices, and recognise the limits of their own competence while participating under supervision. Communication in emergency settings differs substantially from routine outpatient or ward encounters because it frequently occurs in environments characterised by crowding, emotional stress, incomplete information, and rapidly evolving clinical situations [6]. The Kalamazoo framework provides a recognised structure for teaching and assessing communication skills, although its application within emergency settings requires adaptation to these unique contextual challenges [7]. Similarly, self-efficacy reflects learners' perceived confidence to undertake tasks under appropriate supervision and should be distinguished from objective competence or independent clinical performance [8].

While previous studies have highlighted the educational benefits of emergency medicine clerkships, they often focus on knowledge, student satisfaction, or confidence. There is limited longitudinal qualitative research on how undergraduate students experience emergency-care electives, particularly in the Indian CBME context. Understanding changes in learners' perceptions and reflections during these electives may offer valuable insights that knowledge scores or satisfaction surveys alone cannot capture. The present educational evaluation aimed to explore medical students' experiences during a supervised emergency-care elective, using longitudinal reflective data and routine measures of knowledge, communication self-assessment, and emergency-care self-efficacy.

MATERIALS AND METHODS

The present mixed-methods study was conducted at Dr. B.R. Ambedkar State Institute of Medical Sciences, Mohali, Punjab, India, from February 2026 to April 2026. The study was approved by the Institutional Ethics Committee (IEC) (Reference No. AIMS/IEC/2026/P8 dated 08.04.2026). Written informed consent was obtained from all participating students.IEC approval covered retrospective research use of routinely collected educational data generated by a pre-existing programme, and the research analysis commenced after approval. Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines were followed for qualitative synthesis.

Inclusion and Exclusion criteria: All four Phase III part II MBBS students who opted for and completed the two-week emergency elective during the study period and had complete analysable educational data were included in the study. Students would have been excluded if they did not complete the elective, declined consent for secondary use of their educational data, or had insufficient qualitative or paired quantitative data for analysis. Students were assigned anonymised identifiers (S1-S4) during analysis and reporting. No formal sample size calculation was performed because this was an exploratory evaluation using total-population sampling of a single completed cohort.

Study Procedure

Given the small cohort size, quotes were reviewed to ensure no unique combinations of details could identify participants. Additional precautions included removal of potentially identifiable contextual information and the use of anonymised participant codes (S1-S4). No patient-level data or patient identifiers were included in the analysis or manuscript. Participation in the retrospective research study was voluntary and had no influence on routine academic assessment or progression.

The elective was designed as a supervised exposure-based learning experience. Students were not assigned independent clinical responsibility. They observed and participated under supervision in emergency department activities, triage processes, case discussions, Electrocardiogram (ECG) review, basic life support training, communication with patients and families, reflective writing, feedback, and selected procedures. The intended endpoint was supervised confidence and awareness of limits, not independent emergency-care competence [Table/Fig-1].

Contextual educational instruments included a 50-item scenario-based knowledge test, the Gap-Kalamazoo Communication Skills Assessment Form [6], and a 25-item self-efficacy scale. All four students completed these assessments. The Gap-Kalamazoo form was used unchanged for self-assessment. The knowledge test developed by an Assistant Professor in General Medicine, comprised scenario-based multiple-choice questions aligned with the National Medical Commission's CBME curriculum and the elective's learning objectives. The draft underwent internal content review from a Senior Resident in Surgery and feedback from another faculty member to

Component	Activity	Supervision method	Intended learning outcome	Linked data source
Emergency department exposure	Observation and supervised participation in routine acute-care activities	Faculty and clinical-team supervision	Familiarity with emergency workflow and patient-care environment	Daily reflections; detailed written feedback
Triage observation	Observation of patient prioritisation and acuity recognition	Bedside discussion with supervising clinician and residents on duty	Recognition of urgency and prioritisation principles	Daily reflections; knowledge test
Case discussions	Discussion of real patient presentations and red flags	Faculty-led bedside or debrief discussion	Clinical reasoning and theory-practice connection	Knowledge test; detailed written feedback
ECG interpretation	Review of selected ECGs in emergency context	Supervised review and explanation	Recognition of common emergency ECG patterns	Knowledge test; self-efficacy tool
Basic life support training	Demonstration and supervised practice	Faculty demonstration using mannequin and guided practice	Understanding of resuscitation principles and team roles	Self-efficacy tool; reflections
Procedural observation or supervised assistance	Observation or assistance in selected procedures	Direct supervision; no independent responsibility	Awareness of indications, steps, safety checks, and limits	Self-efficacy tool; detailed written feedback
Communication with patients and families	Observing and attempting reassurance, explanation, and information gathering	Supervised interaction and role-modelling while observing others at work	Communication under pressure and empathic awareness	Gap-Kalamazoo; reflections; detailed feedback
Daily reflective writing	Written reflections after each posting day	Prompted self-reflection	Emotional adaptation and learning integration	Daily reflections
Feedback and debriefing	Post-elective written feedback and expectation closure	Faculty review and discussion	Identification of learning gains and curricular gaps	Detailed written feedback; baseline expectations

[Table/Fig-1]: Structure and educational components of the two-week emergency-based elective.
BLS: Basic life support; ECG: Electrocardiogram

enhance clarity and relevance. The test focused on the application of knowledge in emergency scenarios, covering major domains like triage, respiratory and cardiac emergencies, trauma, and emergency pharmacology. Each question was worth one mark, with a maximum score of 50, and there was no negative marking or partial credit. The instrument was for local educational use and underwent internal review but did not receive formal validation or reliability testing.

The self-efficacy scale was a 25-item confidence questionnaire developed locally by the first author, following a similar methodology to the knowledge questionnaire and undergoing internal content review. It aligned with elective learning objectives related to emergency recognition, management, resuscitation, trauma, procedures, triage, decision-making, and communication. Participants rated their confidence in each task on a five-point Likert scale (1=not at all confident to 5=very confident), yielding scores from 25 to 125. Since the instrument was not formally psychometrically validated, scores were viewed as descriptive indicators of perceived self-efficacy rather than measures of objective competence.

Qualitative data sources comprised 45 of 48 expected daily reflections, detailed written post-elective feedback from all four students, and baseline expectation forms used to contextualise expectation closure.

Qualitative data were analysed using an inductive thematic approach based on Braun V and Clarke V [9]. Anonymised daily reflections and feedback were repeatedly reviewed for familiarisation and manually coded by the primary investigator. Initial codes were grouped into five candidate themes, refined by comparing reflections, feedback, and baseline expectations. As reflective writing was a primary data source, the analysis considered how prompts and feedback enhance reflective learning. Patterns over time were assessed before comparing across participants. To improve interpretive consistency, a subset of coded data and themes was reviewed by the second author, with any differences resolved through discussion. No qualitative data analysis software or member checking was used, as this was a retrospective evaluation relying on anonymised reflections. Credibility was bolstered through repeated data review and theme refinement. Thematic saturation was not sought, as all available data were analysed.

STATISTICAL ANALYSIS

Pre and post-elective scores were summarised descriptively, with no inferential statistics performed due to the small cohort size.

RESULTS

All four students completed the pre and post-elective knowledge test, communication self-assessment, and self-efficacy instrument. Daily reflections were available for 45 of 48 (93.8%) expected submissions.

Individual pre and post-elective contextual educational indicators are presented in [Table/Fig-2]. Because the educational instruments were either locally developed or used for contextual educational evaluation and the cohort was very small, the quantitative findings were interpreted only as descriptive contextual educational indicators and not as measures of educational effectiveness or clinical competence.

Qualitative Themes from Reflections and Feedback

Qualitative analysis identified five recurring themes [Table/Fig-3].

First, students described initial anxiety and unfamiliarity with the emergency environment. Early reflections referred to being overwhelmed by the pace, multiple simultaneous tasks, and the sensory intensity of emergency care. Over time, they developed more interest and showed active participation in management under supervision.

Second, students valued connecting classroom learning with real patient encounters. They described moving from textbook or diagnosis-first thinking toward recognition of red flags, triage

Student code	Knowledge pre	Knowledge post	Knowledge change	Communication pre	Communication post	Communication change	Self-efficacy pre	Self-efficacy post	Self-efficacy change
S1	23	26	+3	25	38	+13	39	95	+56
S2	35	49	+14	28	28	0	41	93	+52
S3	32	42	+10	31	30	-1	41	87	+46
S4	25	28	+3	21	29	+8	35	66	+31
Observed change range	-	-	+3 to +14	-	-	-1 to +13	-	-	+31 to +56

[Table/Fig-2]: Individual and descriptive pre-post educational outcomes.
Knowledge maximum score=50; communication maximum score=45; self-efficacy maximum score=125

Theme	Representative anonymised excerpt	Analytic interpretation and educational implication
Initial anxiety and unfamiliarity	"Overwhelmed and excited. So many things are occurring at the same time, and it gets difficult to grasp all the details." (S2, daily reflection, Day 1) "Today's cases made me feel more confident than yesterday and better at understanding how the emergency functions." (S3, daily reflection, Day 2) "On Day 15, I felt satisfied with the work we did and Emergency did not feel like a strange, unfamiliar place anymore." (S3, post-elective feedback) "My classroom teaching gave my knowledge and information about the topic, but it didn't prepare me for how to apply skills and knowledge in real life in emergency cases." (S4, daily reflection, Day 1)	The data describe increasing familiarity rather than disappearance of anxiety or acquisition of competence. Early orientation and debriefing may help students adapt to the emergency environment while retaining appropriate supervision.
Connecting classroom learning with real patient encounters	"This made us realise that we should see the patient as a whole and not only the related pathology." (S2, daily reflection, Day 8) "It taught me that we are presented with a patient, not a diagnosis and reaching to that diagnosis as soon as possible is essential." (S3, post-elective feedback-Day 15) "Yes, I feel need to learn about suturing and insertion of Ryle's tube." (S1, post-elective feedback-Day 15)	Real patient encounters helped students contextualise classroom learning and appreciate clinical uncertainty. Structured case discussions and debriefing are needed to reinforce learning beyond clinical exposure.
Procedural exposure with persistent hands-on gaps	"I am still feeling unprepared for IV cannulation and putting in Ryle's tube. I didn't get to perform these, though I saw a lot of times, so I still feel unprepared for it." (S2, post-elective feedback-Day 15) "IV injection and sampling were the procedures which I observed only and didn't perform so I am unprepared for it." (S4, post-elective feedback-Day 15)	Observation alone did not translate into procedural readiness. Simulation and supervised hands-on practice are needed before independent clinical performance.
Communication under emergency department pressures	"The chaos of emergency does affect interaction with patients as sometimes there are a large number of patients at the same time, so it is difficult to take individual histories." (S3, daily reflection, Day 2) "I did learn how to communicate in high stress situations with the family members and the relative, how to start and do conversation with the family members who are emotionally unstable." (S4, post-elective feedback) "It was a bit difficult to talk in the stress situation and it is difficult to talk to family which is already stressed" (S1, daily reflection, Day 1)	Communication was shaped by crowding, urgency, and emotional stress, highlighting the need for emergency-specific communication training and feedback.

Development of supervised confidence and awareness of limits	"I still feel that my knowledge and my skills are not so good so as to handle emergency alone." (S3, post-elective feedback-Day 15) "I think I lack the knowledge to handle emergencies independently now too." (S4, post-elective feedback-Day 15) "After learning and performing a lot of emergency procedures, I am now confident to perform emergency procedures, though supervision will be very much appreciated." (S2, post-elective feedback-Day 15)	The relevant educational outcome was willingness to participate with supervision, not autonomy. Explicit recognition of limits supports help-seeking and patient safety.

[Table/Fig-3]: Themes, longitudinal excerpts, and analytic interpretation.
Quotations are presented verbatim, apart from removal of potentially identifying information. i.v.: intravenous

priorities, and whole-patient assessment. Reflections suggested that observing and discussing real cases helped students contextualise theoretical concepts and appreciate the practical application of previously learned knowledge in dynamic clinical situations.

Third, procedural exposure was reported but hands-on skills gaps persisted. Students observed and assisted with procedures, but higher-acuity or equipment-dependent skills like defibrillator use or endotracheal intubation remained mainly observed rather than independently performed. Practical skills were the most frequent self-identified training gap, coded in 28/45 (62.2%) daily reflections.

Fourth, communication and empathy were shaped by emergency department pressures. Students reported reassurance and family interaction, but also described crowding, time pressure, distressed relatives, and bad-news situations as barriers to ideal communication.

Fifth, students described increasing supervised confidence and awareness of limits. Detailed feedback suggested that the elective was accompanied by lower reported anxiety and greater willingness to participate, but students did not claim readiness for unsupervised emergency care.

Integration of Contextual Scores and Qualitative Findings

The joint display demonstrated convergence between the descriptive contextual educational indicators and the qualitative findings [Table/Fig-4]. Higher post-elective knowledge scores corresponded with students' reflections on relating classroom learning to clinical practice, while the qualitative data also highlighted the continuing need for reinforcement through discussion and debriefing. Mixed communication self-assessment scores were consistent with students' descriptions of communication challenges in the emergency department. Higher self-efficacy scores across all four students corresponded with qualitative accounts of enhanced confidence to participate under supervision rather than independent emergency-care competence. Procedural exposure emerged as the principal learning gap, particularly regarding hands-on practice, while reflections also highlighted teamwork, patient safety, and professional role-modelling.

DISCUSSION

The present mixed-methods educational evaluation suggests that participation in a supervised emergency-based elective may help undergraduate medical students move from initial anxiety and unfamiliarity toward supervised confidence. Pre-post educational instruments were used only to contextualise the qualitative narratives and were not treated as primary outcome measures or evidence of effectiveness. Furthermore, no eligible students declined participation, and no students were excluded from analysis. The endpoint was not independent emergency competence. These findings are consistent with literature describing emergency medicine clerkships as high-density settings for experiential learning, local curriculum alignment, and self-efficacy development.

The descriptive contextual educational indicators were consistent with the qualitative observations but should be interpreted cautiously. Raw post-elective knowledge scores were higher for all four students; however, because the questionnaire was locally developed and non-validated, this pattern cannot be interpreted as evidence of knowledge gain or effectiveness. Qualitative accounts described perceived connections between classroom learning and clinical situations. Similarly, the Indian emergency medicine elective reported by Sampangiramaiah S et al., demonstrated favourable educational outcomes following structured emergency exposure, although the study design, outcome measures, and sample differed from the present evaluation [5]. However, a short elective cannot ensure durable retention or complete knowledge consolidation. Larger studies should include objective assessments, delayed testing, and non-identical item banks.

The raw self-efficacy scores were higher post-elective for all four students. Bandura's framework distinguishes perceived capability from actual performance [8]. In the present study, self-efficacy should be read as perceived readiness to participate under supervision. The locally developed scale was not formally validated and therefore cannot be interpreted as evidence of emergency-care competence. This interpretation is consistent with the emergency medicine clerkship study by Cevik AA et al., who described improvements in students' perceived self-efficacy following supervised emergency medicine training rather than objective competence [3].

Communication findings were context-bound. Students reported greater confidence in initiating conversations, understanding patient perspectives, and reassuring families following the elective. However, communication in emergency settings differed from routine clinical interactions because it occurred within environments

Outcome area	Contextual score pattern	Related qualitative theme	Integrated interpretation	Curricular implication
Knowledge	Raw post-elective scores were higher for all four students.	Connecting classroom learning with real patient encounters	Higher contextual scores aligned with participants' descriptions of applying classroom knowledge. Although durable learning cannot be inferred because long-term retention was not assessed and the instrument was non-validated.	Add structured retrieval practice and post-case debriefing.
Communication	Individual changes were mixed.	Communication under emergency department pressures	Communication confidence remained constrained by time pressure, uncertainty and competing clinical demands	Incorporate emergency-specific communication and family-interaction training.
Self-efficacy	Raw post-elective scores were higher for all four students.	Supervised confidence and awareness of limits	Scores reflected perceived confidence, while qualitative accounts continued to emphasise the need for supervision.	Keep supervision explicit and avoid autonomy overclaims.
Procedural learning	No objective procedural assessment was performed.	Procedural exposure with persistent hands-on gaps	Exposure did not equal hands-on readiness for higher-acuity or equipment-dependent skills.	Supplement clinical exposure with simulation and task-trainer practice.
Professional development	Not measured quantitatively; identified through reflections and written feedback.	Initial anxiety; role-modelling; patient-safety awareness	Reflective narratives identified learning related to teamwork, safety, and professional identity, which were not captured by quantitative measures.	Include structured debriefing on teamwork, patient safety, and professional boundaries.

[Table/Fig-4]: Joint display integrating contextual score patterns with qualitative findings.

characterised by crowding, time pressure, uncertainty, emotional distress, and rapid decision-making. Reflective narratives suggested that interactions with distressed patients and families, along with competing clinical priorities and high patient volume, shaped communication experiences. These findings highlight that emergency communication requires context-specific skills and support the need for dedicated emergency-focused communication training, rather than assuming that general communication frameworks transfer unchanged to acute-care settings [7].

Procedural learning remained incomplete. Students observed many skills and performed selected lower-risk tasks, but higher-acuity procedures remained largely observational. This finding is consistent with simulation-based trauma education, which suggests that procedural competence requires structured practice, feedback, and repeated rehearsal rather than observation alone [10]. Similarly, Okuda Y et al., highlighted the value of simulation in providing deliberate practice for emergency procedures that may not be encountered consistently during routine clinical exposure [11]. These observations suggest that supervised clinical exposure should be complemented by simulation-based training to strengthen procedural learning. In addition, periodic reinforcement of basic life support training may be necessary because knowledge and skill retention decline over time after initial instruction [12].

Beyond knowledge and procedural exposure, qualitative findings suggested broader professional development. Students described evolving clinical reasoning, increasing awareness of patient safety and teamwork, and learning through observation of clinicians managing uncertainty and coordinating care. Reflective narratives also highlighted empathy-related experiences and the influence of role modelling on understanding professional responsibilities. These observations are consistent with experiential learning theory, which proposes that authentic clinical participation and subsequent reflection facilitate integration of knowledge with professional attitudes and identity formation [13]. Taken together, these observations suggest that the educational value of emergency-based electives extends beyond procedural learning and were relevant to participants' developing professional perspectives.

The main curricular implication is that short, supervised emergency-based electives should include explicit objectives, structured bedside exposure, procedural simulation, reflective writing with feedback, and debriefing after high-acuity encounters. Reflection can be strengthened by providing prompts, guidelines, and feedback, rather than relying only on unstructured daily writing [14].

Strengths of this study include complete paired contextual educational instrument data, 45 longitudinal daily reflections, detailed written feedback, baseline expectation data, and integration of individual learning trajectories. The longitudinal reflections, collected throughout the two-week elective, enabled exploration of how students' experiences evolved over time from initial anxiety and unfamiliarity to enhanced supervised confidence, active participation, and awareness of professional limitations- rather than relying solely on single-point post-elective feedback.

Limitation(s)

The present study has several limitations. It included only four students from a single institution and used retrospective educational data, limiting transferability of the findings. No formal sample-size calculation was performed because all eligible members of the completed elective cohort were included. Thematic saturation was neither sought nor claimed. The pre-post instrument scores were intended only to provide contextual support for qualitative interpretation. The self-efficacy questionnaire and faculty-developed knowledge assessment questionnaire were developed for local educational purposes and did not undergo formal psychometric validation; therefore, their measurement properties should be interpreted with caution. There was no direct observation of competence, no objective procedural assessment, and no long-term follow-up. The Gap-Kalamazoo form was applied as a self-assessment instrument; it was originally designed and validated for observer-rated assessment, and its psychometric properties in a self-assessment context have not been established. The primary investigator's involvement in the elective may have influenced interpretation. Because reflections and feedback were generated within an educational setting, responses may also have been influenced by social desirability or perceived faculty expectations. Furthermore, reliance on written reflections and feedback limited opportunities to probe contradictory responses or explore emerging themes in greater depth, as might have been possible through interviews or focus groups. Finally, expectation closure was derived from integration of baseline expectations with post-elective feedback rather than formal paired outcome questionnaires.

Future research should include larger cohorts, validated educational instruments, objective assessments such as Objective Structured Clinical Examination (OSCE) or Mini-Clinical Evaluation Exercise (mini-CEX), direct observation of procedural and communication skills, simulation-based procedural assessment, and longer-term follow-up to evaluate retention of learning.

CONCLUSION(S)

The present mixed-methods qualitative evaluation suggests that a supervised emergency-based elective may help undergraduate medical students move from initial anxiety toward supervised confidence. Qualitative data described greater confidence and readiness to participate under supervision while retaining awareness of personal limits. These findings should not be interpreted as evidence of independent emergency-care competence but rather as indicators of increasing readiness to participate under supervision. Larger studies using objective assessments, validated measures, and longer follow-up are required.

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