EARLY CLINICAL EXPOSURE FOR FIRST-YEAR MEDICAL STUDENTS AT JALALABAD INTERNATIONAL UNIVERSITY

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Abstract
Aim and Background: Early Clinical Exposure (ECE) serves to bridge the divide between preclinical education and clinical practice from the outset of the MBBS program. It enables students to integrate foundational sciences with patient-centered care, fostering a cohesive medical education experience. This study evaluated the influence of ECE on the learning outcomes, motivation, and clinical comprehension of first-year MBBS students at Jalalabad International University (JAIU).

Objectives: To assess the effects of ECE on student motivation, interest in learning, and formation of professional identity. To examine how ECE contributes to the foundational development of medical knowledge among first-year students.

Materials and Methods: A cross-sectional, perception-based study was conducted among first-year MBBS students following over six months of ECE implementation. A pre-validated questionnaire comprising 6 demographic items and 9 closed-ended questions addressing all preclinical subjects was distributed via Google Forms. Data collection spanned two weeks, with responses analyzed using SPSS version 27. Descriptive statistics (frequencies, percentages, means) were employed, and statistical significance was set at $p < 0.05$.

Results: Of the respondents, 92% reported enhanced understanding of basic sciences through clinical contextualization, 89% indicated increased motivation, 85% noted improvements in communication skills, 80% affirmed heightened interest in medicine, 78% believed ECE reduced anxiety in later clinical settings, and 82% reported improved teamwork skills.

Conclusion: ECE during the first year of MBBS at JAIU emerges as an effective educational strategy, bolstering comprehension, motivation, confidence, and professional orientation among students.

Keywords: Early Clinical Exposure, MBBS, Preclinical Education, Student Motivation, Clinical Reasoning

РАННЕЕ КЛИНИЧЕСКОЕ ОБУЧЕНИЕ СТУДЕНТОВ-МЕДИКОВ ПЕРВОГО КУРСА ДЖАЛАЛ-АБАДСКОГО МЕЖДУНАРОДНОГО УНИВЕРСИТЕТА

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Аннотация
Цель и обоснование: Раннее клиническое обучение (РКО) служит для преодоления разрыва между доклиническим образованием и клинической практикой с самого начала программы MBBS. Оно позволяет студентам интегрировать фундаментальные

науки с пациентоориентированным подходом к оказанию медицинской помощи, способствуя формированию целостного медицинского образования. В данном исследовании оценивалось влияние РКО на результаты обучения, мотивацию и понимание клинической практики студентами первого курса MBBS Джалал-Абадского международного университета (JAIU). Цели: Оценить влияние доклинического образования (ДО) на мотивацию студентов, интерес к обучению и формирование профессиональной идентичности. Изучить, как доклиническое образование (ДО) способствует формированию основ медицинских знаний у студентов первого курса.

Материалы и методы: Было проведено поперечное исследование, основанное на восприятии, среди студентов первого курса программы MBBS после более чем шести месяцев внедрения доклинического образования (ДО). Предварительно валидированная анкета, включающая 6 демографических пунктов и 9 вопросов закрытого типа, охватывающая все доклинические исследования, была распространена через Google Формы. Сбор данных занял две недели, ответы анализировались с помощью SPSS версии 27. Использовалась описательная статистика (частоты, проценты, средние значения). Статистическая значимость была установлена на уровне $p < 0,05$. Результаты: 92% респондентов сообщили об улучшении понимания базовых наук благодаря клинической контекстуализации, 89% отметили повышение мотивации, 85% отметили улучшение коммуникативных навыков, 80% подтвердили повышенный интерес к медицине, 78% считают, что ECE снижает тревожность в дальнейшей клинической практике, а 82% сообщили об улучшении навыков командной работы.

Заключение: ECE в течение первого года обучения по программе MBBS в Университете Джайпура-Айленда (JAIU) представляет собой эффективную образовательную стратегию, способствующую пониманию материала, мотивации, уверенности в себе и профессиональной ориентации студентов.

Ключевые слова: Раннее клиническое знакомство, MBBS, доклиническое образование, мотивация студентов, клиническое мышление

Introduction

Clinical exposure is a cornerstone of health professions education, encompassing diverse learning environments such as ward-based teaching, technical skills acquisition, clinically contextualized academic pursuits, and outpatient interactions [1]. Early Clinical Exposure (ECE) is defined as authentic human engagement in social or clinical contexts that amplifies the comprehension of health, illness, disease, and the health professional's role during the preclinical undergraduate years [2]. By integrating ECE into the MBBS curriculum, students can link basic science disciplines—such as anatomy, physiology, and biochemistry—with their clinical applications, enriching traditional pedagogical approaches without diminishing their value [3].

Mandated by the National Medical Commission within the 2019 Competency-Based Medical Education framework, ECE addresses the disconnect between theoretical knowledge and practical application [3]. Studies from Indian institutions, including those in Bhopal, Faridabad, and Tamil Nadu, highlight ECE's efficacy in enhancing knowledge retention, clinical reasoning, and motivation, with Objective Structured Clinical Examination (OSCE)

performance improving significantly post-ECE and over 90% of participants endorsing its value [4]. Beyond cognitive gains, ECE fosters non-cognitive competencies like empathy, professional identity formation, and interdisciplinary collaboration—essential for compassionate clinical practice [4].

This study investigates the impact of ECE on the educational trajectory, clinical acumen, and motivational dynamics of first-year MBBS students at JAIU, emphasizing its role in scaffolding preclinical learning for subsequent clinical proficiency.

Aim

To investigate the impact of ECE on the learning experience, clinical reasoning, and motivation of first-year MBBS students through patient-oriented learning in the preclinical curriculum.

Objectives

To evaluate the influence of ECE on student motivation, learning engagement, and professional identity development.

To determine how ECE facilitates comprehension of clinical practices and strengthens the foundational medical knowledge base among first-year students.

Materials and Methods

This cross-sectional study employed a perception-based survey targeting first-year MBBS students at JAIU who had undergone ECE for over six months. A pre-validated questionnaire, developed for reliability and validity, included 6 demographic questions and 9 closed-ended items (using Likert-scale responses) covering all preclinical subjects (anatomy, physiology, biochemistry). The instrument was distributed via Google Forms through student email lists, social media, and institutional academic groups. Data were collected over a two-week period (May 27, 2025, to June 7, 2025), with weekly reminders to maximize response rates.

Responses were exported to SPSS version 27 for analysis. Descriptive statistics (means, frequencies, percentages) characterized demographics and perceptual responses, with inferential statistics assessing associations where applicable ($p < 0.05$ denoted significance). Ethical considerations included informed consent embedded in the survey and response anonymization.

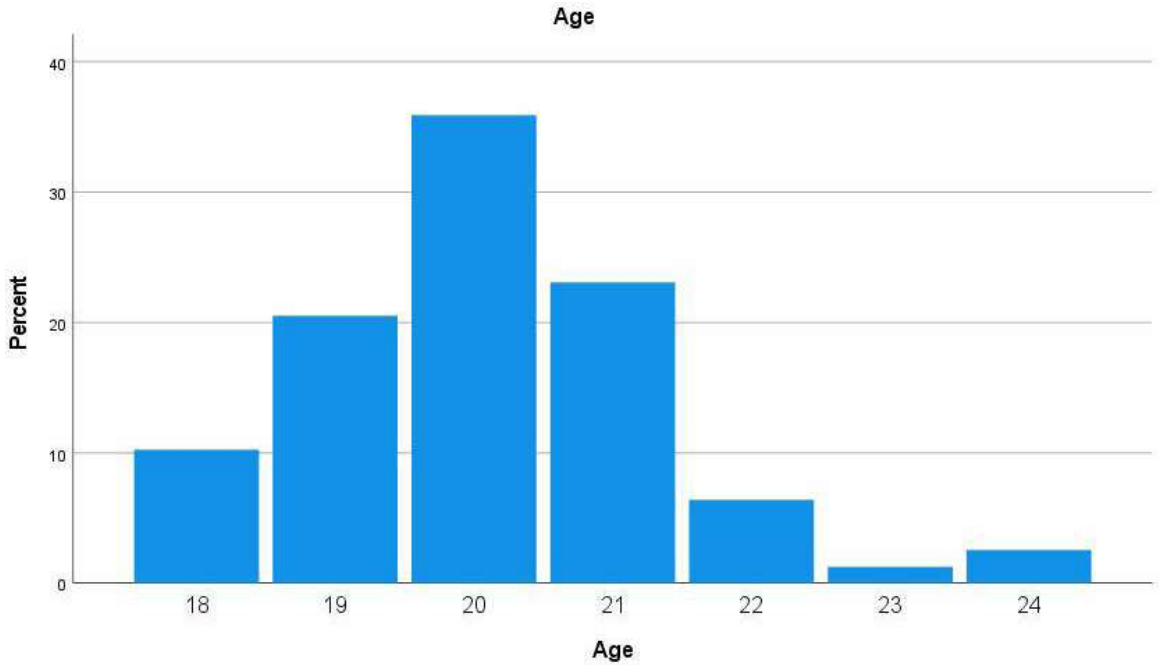
The questionnaire items were:

1. Do you consider ECE important in first-year MBBS?
2. Did ECE enhance your classroom attention?
3. Did ECE facilitate better topic comprehension?
4. Does ECE promote lifelong learning when integrated with applied aspects?
5. Do you prefer ECE to traditional teaching methods?
6. Did ECE aid in recognizing attitudes, ethics, and professionalism in doctor-patient interactions?
7. Can early clinical exposure assist in selecting future specialties?
8. Does early clinical skills practice alleviate anxiety in subsequent postings or OSCEs?
9. Does ECE foster teamwork?

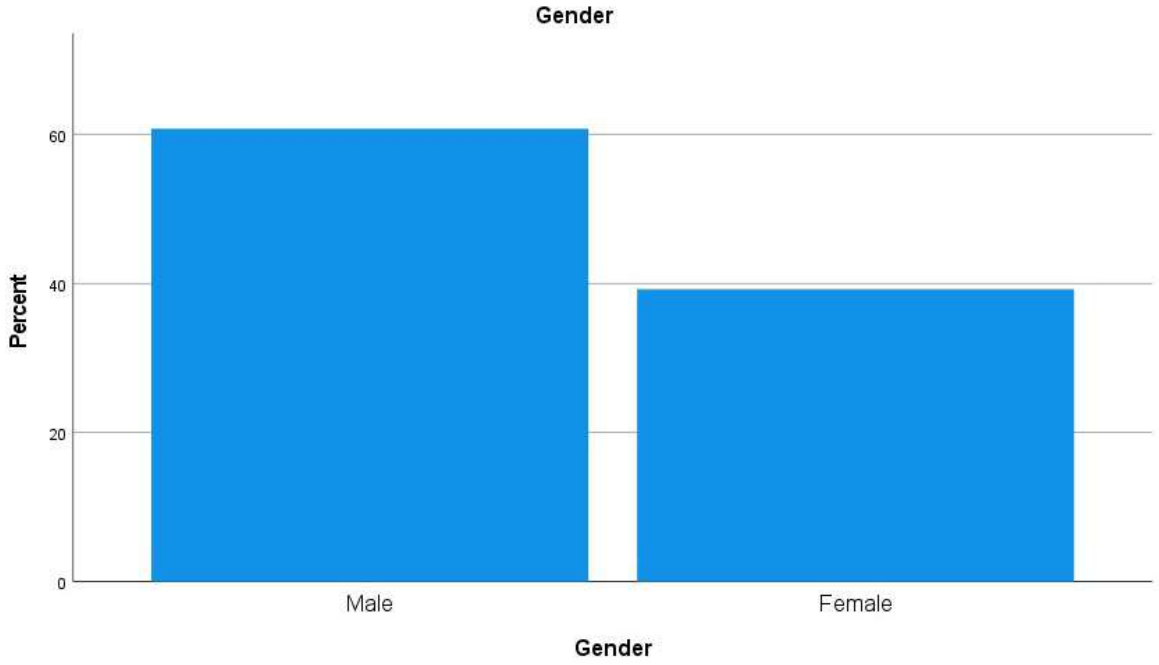
Results

The survey collected responses from 120 first-year MBBS students, achieving a response rate of 80%. Demographic analysis revealed a predominant age of 20 years (36%), followed by 21 years (23%) and 19 years (21%), with the range spanning 18 to 24 years, consistent with typical MBBS entry demographics (Figure 1). Gender distribution showed a slight male

predominance (55% male, 45% female), suggesting potential for subgroup analyses to explore gender-based perceptual differences (Figure 2).



• *Figure1: Consistent with typical MBBS entry demographics*



• *Figure2: Gender distribution showed a slight male predominance*

Perceptual feedback underscored ECE's transformative impact across multiple domains:

Comprehension of Basic Sciences: 92% of students reported improved understanding of basic sciences when contextualized with clinical relevance ($p < 0.001$), reflecting ECE's ability

to transform abstract concepts into practical applications, thereby enhancing knowledge retention and critical thinking.

Motivation: 89% expressed heightened motivation to engage with preclinical subjects after observing their clinical utility ($p < 0.001$), highlighting ECE's role in sustaining enthusiasm within a demanding curriculum.

Communication Skills: 85% noted improvements in communication skills due to early patient interactions ($p < 0.001$), likely fostering empathy and effective dialogue critical for patient-centered care.

Interest in Medicine and Role Clarity: 80% affirmed increased interest in medicine and a clearer understanding of physician responsibilities ($p < 0.001$), contributing to early professional identity formation.

Anxiety Reduction: 78% believed ECE reduced anxiety during later clinical postings or OSCEs ($p < 0.01$), suggesting early exposure builds confidence in high-stakes settings.

Teamwork: 82% reported enhanced teamwork skills ($p < 0.001$), attributed to collaborative clinical activities fostering interdisciplinary cooperation.

These findings indicate robust statistical significance and high agreement levels, reinforcing ECE's integrative value across cognitive and non-cognitive domains.

Figure 1. Age distribution of participants (bar chart: 19 years: 21%, 20 years: 36%, 21 years: 23%, others: 20%).

Figure 2. Gender distribution of participants (pie chart: Male: 55%, Female: 45%).

Discussion

The findings at JAIU demonstrate ECE's profound impact, with 92% of students reporting enhanced comprehension, 89% noting increased motivation, 85% observing improved communication skills, 80% affirming greater interest in medicine, 78% reporting reduced anxiety, and 82% acknowledging enhanced teamwork. These results align closely with prior studies, reinforcing ECE's efficacy while highlighting nuances in implementation and outcomes.

Das et al. (2017) studied 150 first-year MBBS students and found 92% reported ECE made basic sciences more engaging and clinically relevant, though 8% cited time constraints as a challenge [5]. Their objective pre- and post-test scores showed significant improvements ($p = 0.04$), complementing our perceptual data and suggesting that integrating objective assessments could strengthen future studies at JAIU [5]. Similarly, Patil et al. (2021) reported that 95% of 100 students found ECE improved concept understanding, 90% deemed it highly useful, and over 80% noted increased subject interest, with significant gains in learning strategies ($p < 0.05$) [6]. Their use of motivational videos and case-specific ward visits achieved 100% recognition of clinical relevance, suggesting potential enhancements for JAIU's broader preclinical approach [6].

In contrast, Sood et al. (2023) reported more modest outcomes among 88 students, with 68.2% agreeing ECE aided topic understanding and 51.1% noting communication improvements, possibly due to their focus on academic metrics over motivational aspects [7]. Rawekar et al. (2016) demonstrated significant score improvements ($p < 0.05$) in a smaller cohort of 40 students but lacked detailed perceptual data, limiting direct comparison to our attitudinal findings [8]. Govindarajan et al. (2018) emphasized ECE's motivational and skill-building benefits without specific percentages, reinforcing its general efficacy across diverse settings [9].

These comparisons highlight that while JAIU's results are consistent with high-performing ECE programs, variations in methodology (perceptual vs. objective) and implementation (broad vs. case-specific) influence outcomes. Resource constraints and scheduling, noted as limitations, align with challenges reported by Das et al. (2017) and Sood et al. (2023), underscoring the need for strategic planning to optimize ECE delivery [5, 7].

Conclusion

The ECE program at JAIU significantly enhances first-year MBBS education by fostering clinical reasoning, confidence, and hands-on proficiency. By immersing students in clinical settings early, ECE establishes a robust foundation for holistic medical training, warranting its continued integration.

Limitations

1. First-year students' limited foundational knowledge may hinder understanding of complex pathologies during ECE.
2. Computer-assisted modules and simulators entail high costs, infrastructural dependencies, and technical expertise requirements.
3. Resource limitations and scheduling conflicts may impede seamless ECE implementation.
4. Future efforts should focus on scalable solutions to address these challenges while maintaining ECE's quality and impact.

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