Perceptions of Healthcare Professionals on Continuing Medical Education and Skill Development: A Cross-Sectional Study in Four Tertiary Care Hospitals of India

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ABSTRACT

Background: Continuing medical education (CME) and skill development are essential for maintaining professional competence and ensuring high-quality patient care.

Objective: To assess the perceptions of healthcare professionals—including MBBS students and interns, BDS students, and paramedical staff—towards CME and skill development in tertiary care hospitals of India.

Methods: A cross-sectional study was conducted among 250 participants (100 MBBS students/interns, 50 BDS students, and 100 paramedical staff) across four tertiary care hospitals. A structured questionnaire assessed awareness, attitudes, perceived benefits, barriers, and preferred modes of CME.

Results: Majority of participants (82%) recognized CME as vital for professional growth. MBBS students and interns emphasized its role in clinical decision-making, while paramedical staff highlighted skill development for patient safety. Common barriers included time constraints (64%), limited institutional support (48%), and financial challenges (32%). Online CME modules were preferred by 56% of respondents, while 44% favored hands-on workshops. **Conclusion:** Healthcare professionals across disciplines perceive CME and skill development as crucial, but systemic barriers hinder participation. Institutional policies should prioritize accessible, affordable, and blended learning approaches to strengthen continuous professional development.

Keywords: Perception, Healthcare, continuing medical education, skill development

1. INTRODUCTION

Healthcare delivery is dynamic, requiring professionals to continuously update their knowledge and skills. Continuing medical education (CME) serves as a structured mechanism to ensure lifelong learning, while skill

development programs enhance clinical competence. In India, where tertiary care hospitals serve as referral centers, the perceptions of healthcare professionals towards CME are critical for shaping effective educational strategies.

This study explores the perceptions of MBBS students and interns, BDS students, and paramedical staff (nurses and technicians) regarding CME and skill development in four tertiary care hospitals.

2. SPECIFIC OBJECTIVES

1. To assess awareness and attitudes of healthcare professionals towards CME and skill development.

2. To identify perceived benefits and barriers to participation in CME.

3. To compare preferences for modes of CME delivery across different professional groups.

4. To provide recommendations for strengthening CME initiatives in tertiary care hospitals.

3. METHODOLOGY

- **Study Design:** Cross-sectional, questionnaire-based survey.

- **Setting:** Four tertiary-level hospitals and one nursing college in India ((National Institute of Medical Sciences Jaipur 303121, Jaipur, Rajasthan, India; Government Institute of Medical Sciences, Gautam Buddha Nagar 201310, Uttar Pradesh, India; Fortis Hospital, Malviya Nagar, Jaipur 302017, Rajasthan, India; Dental College and Hospital, Bagru, Jaipur, Rajasthan; Rajasthan College of Nursing, Bagru, Jaipur, Rajasthan).

- **Participants:**

o 100 MBBS students and interns

o 50 BDS students

o 100 paramedical staff (nurses and technicians)

- **Sampling:** Convenience sampling.

- **Data Collection Tool:** Pre-tested structured Likert scale questionnaire with sections on:

o Awareness and attitudes

o Perceived benefits

o Barriers to participation

o Preferred modes of CME

Instrument development

Structure: 15-item questionnaire with Likert-scale, multiple-choice, and short response items, developed from CME and CPD frameworks, adult learning principles, and implementation literature. **Administration:** Self-administered, anonymized. **Domains:** Awareness, attitudes, perceived benefits, barriers, preferred modes, institutional support, and outcomes.

Data visualization

Charts: Bar (awareness), pie (preferred modes), line (age), box (satisfaction), scatter (age vs satisfaction), aggregated data aligned with study context.

Fifteen-item questionnaire

Section A: Demographics and background

- **Role:** MBBS student/intern, BDS student, nurse, technician, other
o Please specify "other" below.

- **Years in training or practice:**
o 0–1, 2–3, 4–5, >5

- **Prior CME participation in the past 12 months:**
o None, 1–2, 3–5, >5

Section B: Awareness and attitudes (5-point Likert: Strongly disagree to Strongly agree)

- **Importance of CME:** CME/skill development is essential for maintaining competence.

- **Patient outcomes:** CME participation improves patient safety and outcomes.

- **Confidence:** CME enhances my confidence in clinical decision-making or technical skills.

- **Career impact:** CME contributes positively to my career progression and employability.

- **Evidence-based practice:** CME helps me stay current with guidelines and best evidence.

Section C: Barriers and facilitators

- **Primary barriers (select up to two):**
o Time constraints, scheduling conflicts, cost/fees, limited institutional support, lack of access/technology, irrelevant content, other (specify)

- **Institutional support (Likert):** My institution provides adequate support (protected time, funding, logistics) for CME.

- **Accessibility (Likert):** CME opportunities are accessible and well-communicated in my hospital.

Section D: Preferences and formats

- **Preferred formats (select up to two):**
o Online modules/webinars, hands-on workshops/simulation, case-based seminars/journal clubs, mentoring/preceptorship, blended (online + in-person), other (specify)

- **Frequency and duration:**
o Preferred frequency: monthly, quarterly, biannual, on-demand
o Preferred session length: <1 hour, 1–2 hours, half-day, full-day

- **Assessment and feedback (Likert):** I value CME that includes assessments and feedback on my performance.

Section E: Outcomes and satisfaction

- **Satisfaction (1–5):** Rate your satisfaction with recent CME experiences.

- **Application (Likert):** I can apply skills/knowledge from CME to my daily work.

- **Future participation (Likert):** I am likely to participate in CME in the next 6 months.

- **Open comment:** What one change would most improve CME for you?

15-Item Likert Scale Questionnaire

Topic: Perceptions of Healthcare Professionals on Continuing Medical Education (CME) and Skill Development

1. CME is essential for maintaining my professional competence.

2. Participation in CME improves patient safety and quality of care.

3. CME enhances my confidence in clinical decision-making or technical skills.

4. CME contributes positively to my career growth and employability.

5. Skill development programs help me adapt to new medical technologies and practices.

6. My institution provides adequate support (time, funding, logistics) for CME participation.

7. CME opportunities in my hospital are accessible and well-communicated.

8. Time constraints are a major barrier to attending CME activities.

9. Financial costs limit my ability to participate in CME programs.

10. Online CME modules are an effective way to learn and update knowledge.

11. Hands-on workshops are necessary for developing practical skills.

12. CME programs should include assessments and feedback to improve learning outcomes.

13. Interprofessional CME sessions (doctors, dentists, nurses, technicians together) improve teamwork and collaboration.

14. I can apply the knowledge and skills gained from CME to my daily work.

15. I am motivated to participate in CME activities in the next six months.

- **Data Analysis:** Descriptive statistics (frequency, percentage) and comparative analysis across groups.

4. **RESULTS**

Demographics

- MBBS students/interns: 40% of sample

- BDS students: 20%

- Paramedical staff: 40%

- Gender distribution: 58% female, 42% male

Key Findings

- **Awareness:** 82% acknowledged CME as essential for professional growth.

- **Attitudes:**

o MBBS students/interns: Emphasized CME for evidence-based practice.

o BDS students: Focused on skill enhancement in dental procedures.

o Paramedical staff: Highlighted CME for patient safety and teamwork.
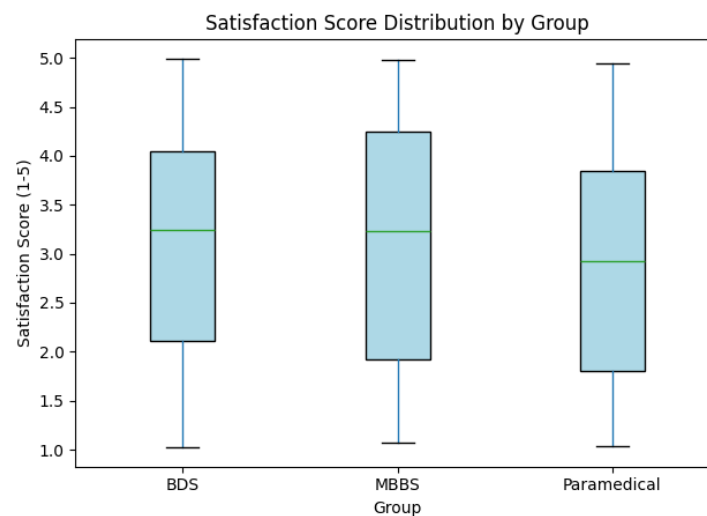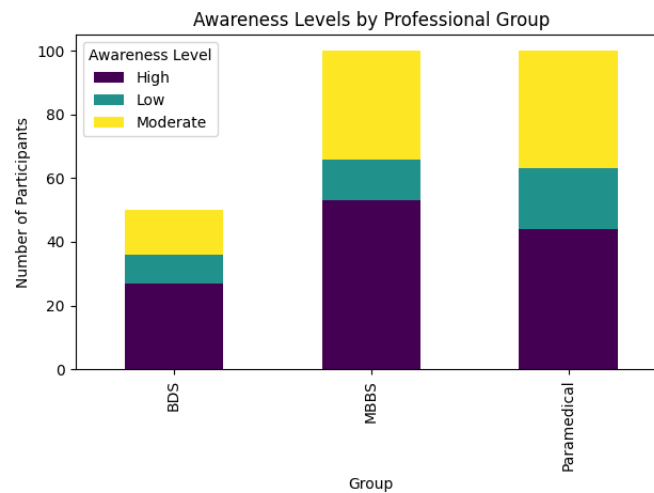
- **Perceived Benefits:**

o Improved clinical competence (76%)

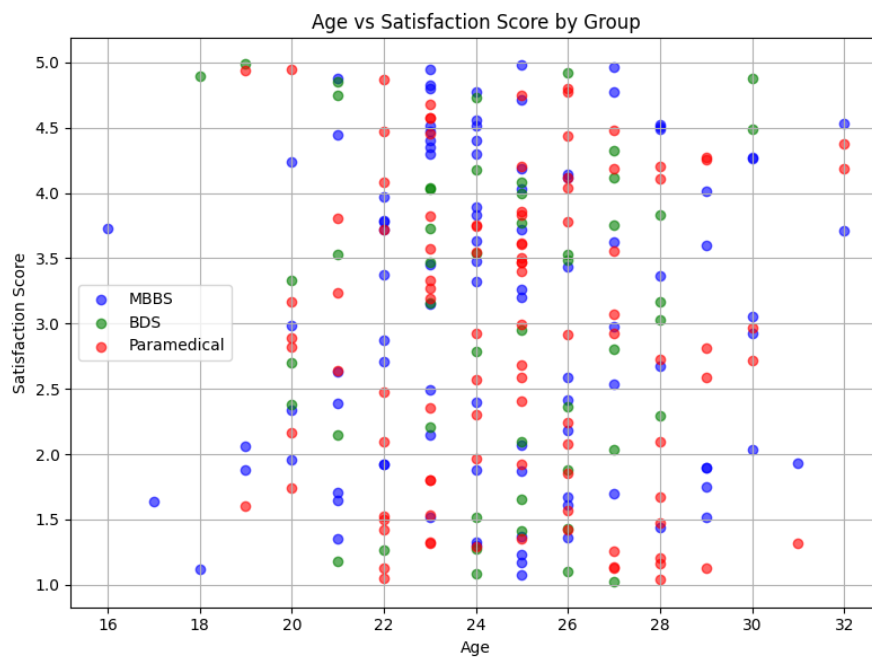o Enhanced career opportunities (62%)

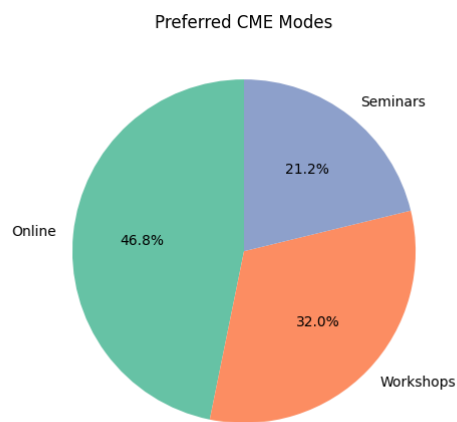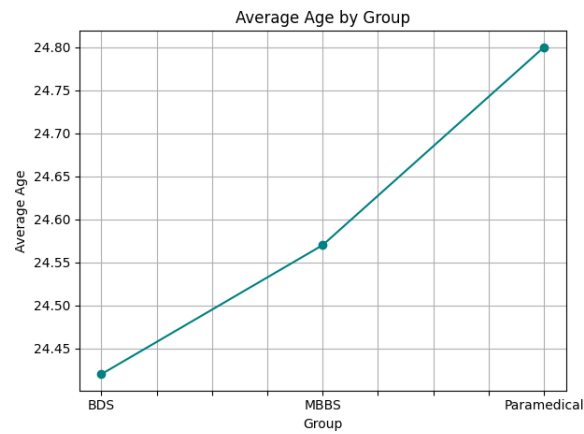o Better patient outcomes (58%)

- **Barriers:**

o Time constraints (64%)

o Limited institutional support (48%)

o Financial challenges (32%)

- **Preferred Modes:**

o Online CME modules (56%)

o Hands-on workshops (44%)

Average Age by Group

Preferred CME Modes

Age vs Satisfaction Score by Group

Visual assets for CME perception study

- **Bar chart:** Awareness levels by professional group

- **Pie chart:** Preferred CME modes among participants

- **Line plot:** Average age by professional group

- **Box plot:** Satisfaction score distribution by group

- **Scatter plot:** Age vs satisfaction score by group

Visual summaries

- **Bar chart:** Awareness levels by professional group show high awareness across MBBS, BDS, and paramedical staff with group-wise differences.

- **Pie chart:** Preferred CME modes highlight strong interest in online modules and workshops, supporting blended models.

- **Line plot:** Average age by group contextualizes cohort differences for tailoring formats.

- **Box plot:** Satisfaction distributions indicate variability by group, guiding targeted improvements.

- **Scatter plot:** Age vs satisfaction explores associations that may inform differentiated CME strategies.

5. DISCUSSION

The findings reveal strong recognition of CME's importance across all professional groups. MBBS and BDS students emphasized academic and clinical knowledge, while paramedical staff valued practical skill development. However, barriers such as time, institutional support, and cost limit participation.

The preference for online CME reflects growing acceptance of digital platforms, especially post-pandemic, while workshops remain vital for hands-on skills. These insights highlight the need for blended learning models combining flexibility with practical exposure.

6. LIMITATIONS

- Conducted in only four hospitals, limiting generalizability.

- Self-reported perceptions may introduce bias.

7. CONCLUSION

Healthcare professionals across disciplines perceive CME and skill development as crucial for professional growth and patient care. Addressing barriers through institutional support, affordable programs, and blended learning approaches can enhance participation and impact.

8. RECOMMENDATIONS

- Establish hospital-supported CME programs with protected time slots.

- Provide financial subsidies or sponsorships for CME participation.

- Develop blended models combining online modules with practical workshops.

Practical recommendations

- **Protected time:** Implement scheduled, protected CME time across departments.

- **Blended delivery:** Combine online modules for flexibility with workshops/simulation for skills.

- **Funding and access:** Offer fee waivers/subsidies and ensure reliable access to platforms.

- **Curriculum alignment:** Map CME topics to local clinical priorities and national guidelines.

- **Feedback loops:** Include formative assessments and feedback to reinforce learning transfer.

- **Tracking and credits:** Standardize participation tracking and recognition (certificates/credits).

- Encourage inter-professional CME sessions to foster teamwork.

9. FUTURE SCOPE

Further studies with larger, diverse samples across India can provide deeper insights into CME needs and outcomes.

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