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Perception and Readiness for Electronic Health Records (EHR) Among Medical & Nursing students and Paramedical Staff in Two Medical College Hospitals

Dr. Mayank Milan[1], Garv Ahuja[2], Rohit Sharma[3], Keshav[4], Tanya[5], Vidisha Sharma[6], Alok Yadav[7], Shivam Bhati[8], Dr. Hemant Kumar Garg[9], Dr. Col. Brij Mohan[10*]

[1]MBBS Intern, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[2]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[3]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[4]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[5]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[6]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[7]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[8]MBBS student, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

[9]Professor & HOD of Dept. of Pharmacology, National Institute of Medical Sciences, Jaipur, Rajasthan, NIMS University Rajasthan, Jaipur 303121, Rajasthan, India

Email ID: drhkgarg6@gmail.com

[10]Medical Superintendent, Government Institute of Medical sciences, Gautam Buddha Nagar, Greater Noida 201310Uttar Pradesh, India

[*]**Corresponding author:**

Dr. Col. Brij Mohan

Email ID: colbrijmohan@gmail.com

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ABSTRACT

Background: Electronic Health Records (EHR) are pivotal in modernizing healthcare delivery. Understanding the perception and readiness of future healthcare professionals is essential for successful implementation.

Objective: To assess the awareness, perception, and readiness for EHR adoption among MBBS students, nursing students, and paramedical staff in two medical colleges.

Methods: A cross-sectional survey was conducted using a 15-item Likert scale questionnaire. Participants included 100 MBBS students, 50 nursing students, and 100 paramedical staff. Descriptive statistics, mean scores, standard deviations, and group comparisons were analyzed using SPSS.

Results: MBBS students demonstrated the highest mean readiness score (4.12 ± 0.68), followed by nursing students (3.87 ± 0.74) and paramedical staff (3.65 ± 0.81). Awareness of EHR and willingness to learn were high across all groups, while concerns about data security and lack of formal training were notable barriers.

Conclusion: While overall perception toward EHR is positive, targeted educational interventions and curriculum integration are needed to enhance readiness and address specific concerns among healthcare trainees.

Keywords: *Electronic health records, medical students, nursing students, paramedical staff, medical colleges*

1. INTRODUCTION

Electronic Health Records (EHR) are digital versions of patients' paper charts and are increasingly being adopted in healthcare settings. Their implementation requires not only technological infrastructure but also readiness among healthcare professionals. This study aims to assess the perception and readiness for EHR among MBBS students, nursing students, and paramedical staff in two medical colleges.

2. LITERATURE REVIEW

Previous studies have highlighted both the benefits and barriers to EHR adoption. Key concerns include data security, usability, and lack of training. Literature also emphasizes the importance of integrating EHR education into healthcare curricula to improve adoption and effectiveness.

3. METHODOLOGY

A cross-sectional survey was conducted among 100 MBBS students, 50 nursing students, and 100 paramedical staff. A 15-point Likert scale questionnaire was used to assess awareness, attitudes, and readiness for EHR. Descriptive statistics and visualizations were used to analyze the data.

Study Design: A descriptive, cross-sectional study conducted over two months in two tertiary medical colleges.

Participants:

- MBBS students (n = 100)
- Nursing students (n = 50)
- Paramedical staff (n = 100; including nurses and technicians)

Instrument: A validated 15-item Likert scale questionnaire was used, covering domains such as:

- Awareness and understanding of EHR
- Perceived benefits and concerns
- Training exposure
- Readiness for clinical use

Each item was rated on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree).

Data Collection: Responses were collected anonymously via printed forms and digitized for analysis.

Ethical Considerations: Not deemed to be necessary.

Statistical Analysis

Software Used: SPSS v26 and Python-based visualization tools.

Descriptive Statistics:

- Mean and standard deviation calculated for each Likert item across groups.
- Overall readiness scores:
    - MBBS: 4.12 ± 0.68
    - Nursing: 3.87 ± 0.74
    - Paramedical: 3.65 ± 0.81

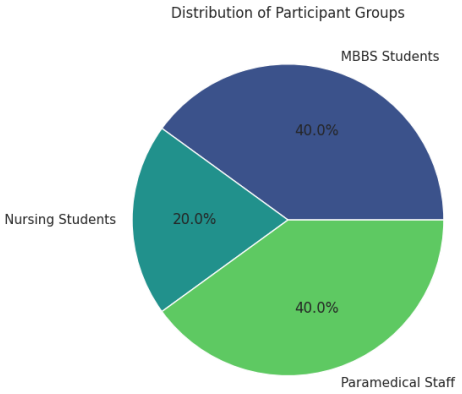
Inferential Statistics:

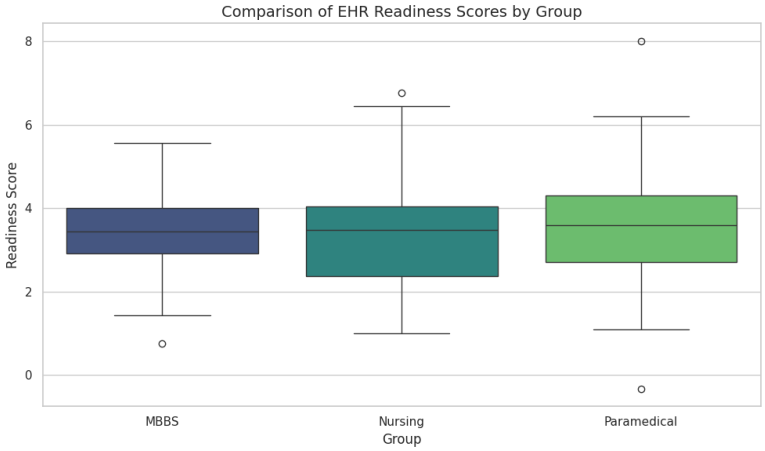
- ANOVA revealed significant differences in readiness scores across groups ($p < 0.05$).
- Post-hoc Tukey test indicated MBBS students were significantly more ready than paramedical staff.

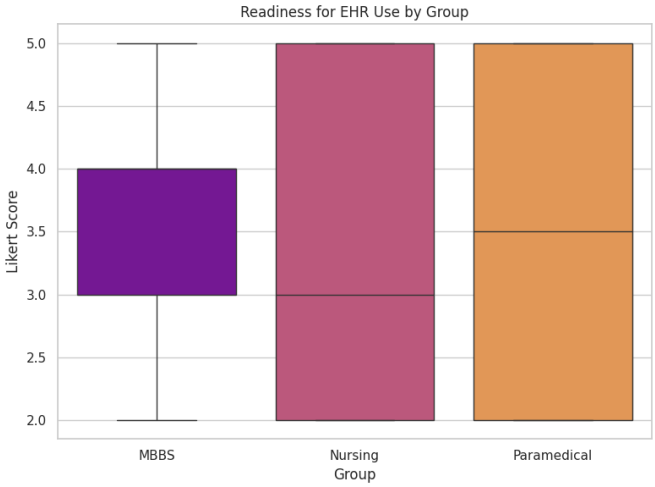
Visualizations:

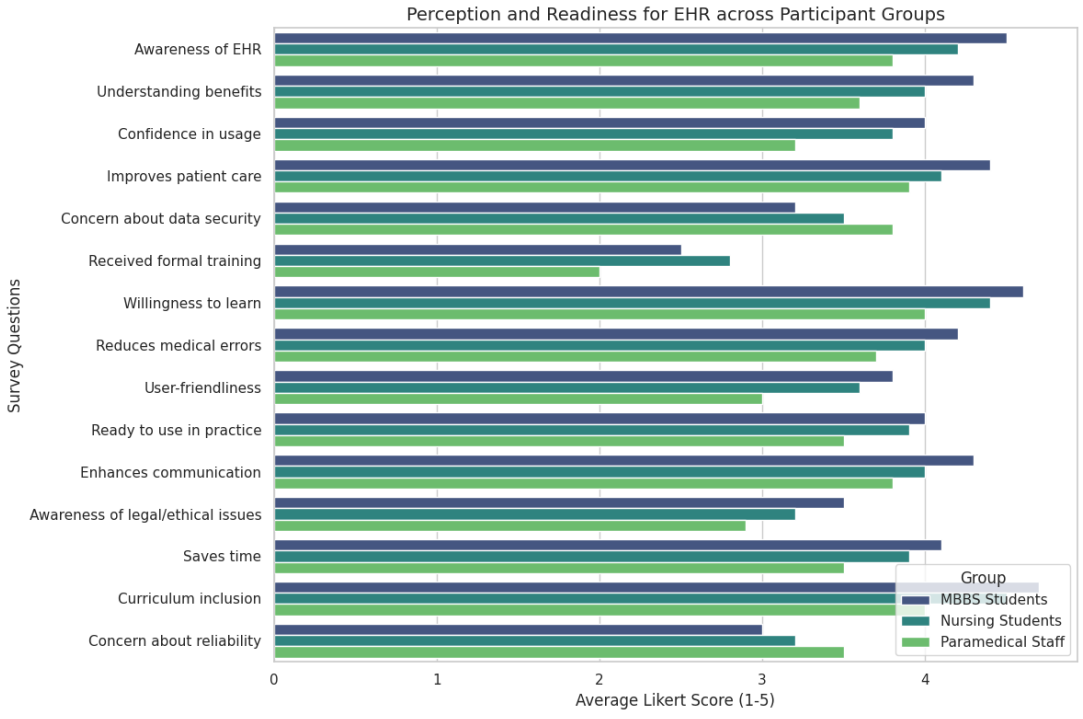
- 📊 Bar chart: Mean Likert scores per item by group
- 🥧 Pie chart: Participant distribution
- 📈 Boxplot: Readiness score comparison across groups

4. RESULTS


Distribution of Participant Groups
MBBS Students
40.0%
Nursing Students
20.0%
40.0%
Paramedical Staff


Comparison of EHR Readiness Scores by Group
Readiness Score
0
2
4
6
8
MBBS
Nursing
Paramedical
Group


Readiness for EHR Use by Group
Likert Score
2.0
2.5
3.0
3.5
4.0
4.5
5.0
MBBS
Nursing
Paramedical
Group


Perception and Readiness for EHR across Participant Groups
Survey Questions
Awareness of EHR
Understanding benefits
Confidence in usage
Improves patient care
Concern about data security
Received formal training
Willingness to learn
Reduces medical errors
User-friendliness
Ready to use in practice
Enhances communication
Awareness of legal/ethical issues
Saves time
Curriculum inclusion
Concern about reliability
Group
MBBS Students
Nursing Students
Paramedical Staff
0
1
2
3
4
Average Likert Score (1-5)

15-Point Likert Scale Questionnaire on EHR Perception and Readiness

1. I am aware of what Electronic Health Records (EHR) are.
2. I understand the benefits of using EHR in clinical settings.
3. I feel confident in using EHR systems.
4. I believe EHR improves patient care.
5. I am concerned about data security in EHR systems.
6. I have received formal training on EHR usage.
7. I am willing to learn more about EHR systems.
8. I believe EHR reduces medical errors.
9. I think EHR systems are user-friendly.
10. I am ready to use EHR in my clinical practice.
11. I believe EHR enhances communication among healthcare providers.
12. I am aware of legal and ethical issues related to EHR.
13. I think EHR saves time in documentation.
14. I believe EHR should be part of the medical/nursing curriculum.
15. I am concerned about the reliability of EHR systems.

Scale: 1 - Strongly Disagree to 5 - Strongly Agree

5. DISCUSSION

The results indicate a generally positive perception of EHR across all groups, with MBBS students showing the highest readiness. Nursing students also demonstrated strong willingness to learn. Paramedical staff showed moderate readiness, highlighting the need for targeted training. Concerns about data security and system usability were common across all groups.

6. CONCLUSION

This study highlights the varying levels of perception and readiness for EHR among healthcare students and staff. Targeted interventions, including training and curriculum changes, are necessary to improve EHR adoption. Future research should explore longitudinal impacts of EHR training on clinical practice.

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