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Survey Report

Knowledge and Practice of Artificial Intelligence Among Medical Students and Healthcare Professionals

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Abstract:

Artificial intelligence (AI) is transforming healthcare by enhancing diagnostic accuracy, treatment planning, and patient management. However, the knowledge and practical application of AI among medical students and healthcare professionals remain variable. This study assesses the awareness, knowledge, and utilization of AI in healthcare among medical students and practitioners. A cross-sectional survey was conducted, and the findings highlight the current understanding of AI, barriers to its adoption, and recommendations for integrating AI education into medical curricula and professional training.

Keywords: Artificial intelligence (AI), healthcare, diagnostic accuracy, cross-sectional survey

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Introduction

Artificial Intelligence (AI) is rapidly transforming the landscape of healthcare, revolutionizing patient care, diagnostics, and medical research. AI-driven technologies, such as deep learning and machine learning, have enabled healthcare professionals to analyze vast amounts of medical data with remarkable accuracy. AI applications in healthcare range from predictive analytics and robotic surgeries to automated diagnostics and personalized treatment plans. Despite the growing significance of AI, there exists a considerable gap in its understanding and practical application among medical students and healthcare professionals. This study aims to evaluate the level of AI awareness, its integration into medical practice, and the challenges faced in its adoption.

Aims & Objectives

The aim of this study is to assess the knowledge and practice of AI among medical students and healthcare professionals. This will help in identifying gaps in AI education and application, thereby enabling better curriculum integration and professional training.

The specific objectives of the study are:

- To evaluate the awareness and knowledge of AI in healthcare among medical students and healthcare professionals.
- To examine the extent of AI adoption in clinical practice.
- To identify the challenges and barriers to AI integration in healthcare settings.
- To recommend strategies for enhancing AI education and training in the medical field.

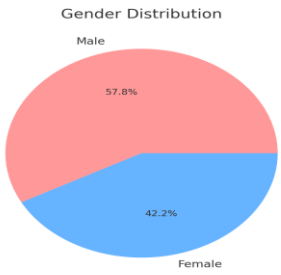
Methodology

A cross-sectional study was conducted at KIMS Amalapuram among medical students and healthcare professionals. A structured questionnaire was used to collect data on AI knowledge, practice, and perceived barriers. The data was analyzed using descriptive statistics.

Results

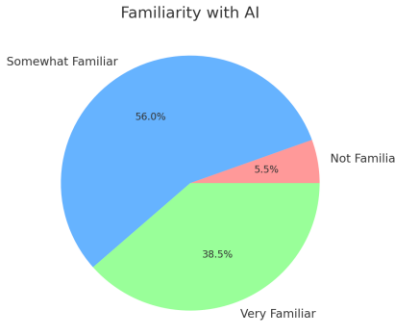
This pie chart illustrates the gender distribution among study participants, indicating a slightly higher proportion of male respondents.

The study included a diverse group of participants, with the gender distribution shown below:



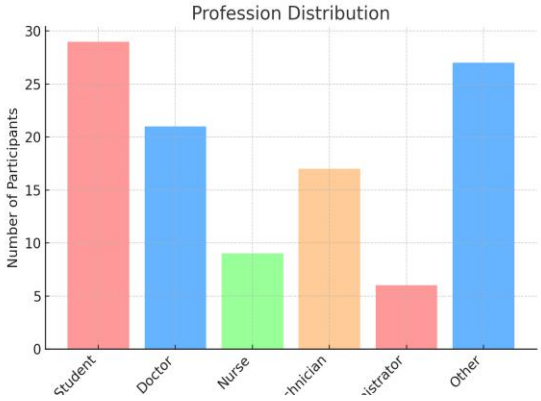
This chart represents the participants' familiarity with AI in healthcare, showing that while some have strong knowledge, the majority are only somewhat familiar.

Participants reported varying levels of familiarity with AI in healthcare:



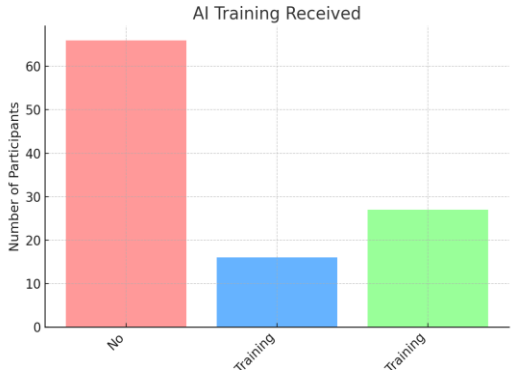
The bar chart categorizes the study participants based on their professional backgrounds, including medical students, doctors, nurses, and other healthcare workers.

The participants belonged to different professional backgrounds:



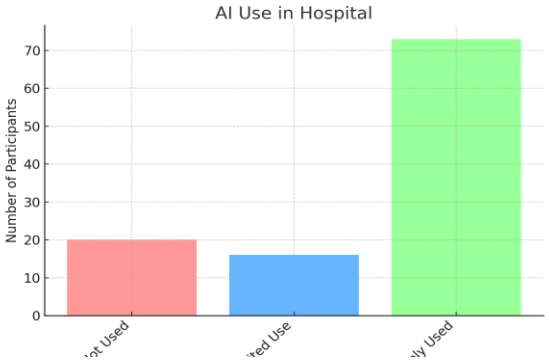
The data highlights that a significant portion of participants have not received any formal AI training, emphasizing the need for educational initiatives.

A majority of participants had not received formal AI training:



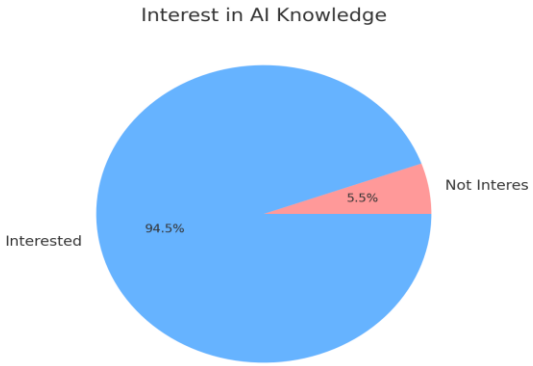
This bar chart represents the level of AI implementation in hospitals, with most participants reporting limited or no use of AI in their workplace.

The extent of AI implementation in hospitals is represented below:



A vast majority of respondents expressed a strong interest in further AI education, showcasing enthusiasm for integrating AI in medical practice.

The majority of participants expressed interest in learning more about AI:



Conclusion

The study highlights a significant knowledge gap regarding AI in healthcare. While awareness is present, practical application remains limited due to a lack of formal training and concerns about its reliability.

Addressing these issues requires integrating AI education into medical curricula and providing hands-on experience.

Recommendations

To improve AI knowledge and practice in healthcare, the following recommendations are proposed:

- Incorporate AI-focused modules in medical curricula.
- Organize workshops and hands-on training sessions for healthcare professionals.
- Encourage collaborations between medical institutions and AI researchers.
- Develop ethical guidelines and policies for AI use in healthcare.

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