



كلية الإدارة
قسم / تخصص الإدارة الصحية

Title

Use of Artificial Intelligence (AI) Among Medical Interns at King Abdulaziz University: Usage Patterns, Perceptions, and Challenges

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1.Introduction

Artificial Intelligence (AI) has rapidly evolved into a foundational component of modern healthcare, influencing diagnostics, management decisions, patient safety, and medical education. AI tools—such as machine learning–based decision support systems, natural language processing applications, automated documentation tools, and generative models—are increasingly integrated into clinical workflows. In medical education, AI is transforming how trainees learn, access information, and develop clinical reasoning.

The internship year represents a crucial transition between academic study and independent clinical practice. Medical interns rotate across specialties, manage real patients, document clinical cases, and make time-sensitive decisions under supervision. This stage demands rapid learning, efficient information retrieval, and strong problem-solving abilities. However, the exponential growth of medical knowledge, time pressure, and limited access to immediate expert consultation—especially during on-call rotations—pose significant challenges.

AI offers solutions by enabling rapid access to updated evidence, generating differential diagnoses, assisting in clinical interpretation, and supporting learning. Studies show that AI enhances diagnostic accuracy, clinical efficiency, and learner confidence. Despite these advantages, concerns exist regarding accuracy, potential over-reliance, and lack of contextual understanding.

While Saudi Arabia promotes AI adoption under Vision 2030, research specifically examining how *medical interns* use AI remains limited. Existing studies typically focus on medical students or practicing physicians, leaving a gap in understanding AI's role among interns. This study addresses that gap by assessing AI usage patterns, perceived usefulness, and challenges among medical interns at King Abdulaziz University.

2. Research Problem

Medical interns face demanding workloads, time-sensitive decision-making, and continuous learning needs. AI tools are increasingly accessible to support these responsibilities, yet the extent to which interns at King Abdulaziz University use AI—along with the benefits they perceive and the challenges they encounter—remains unclear.

Therefore, the research problem is:

There is insufficient evidence describing AI usage patterns, perceived usefulness, and challenges among medical interns.

3. Importance of the Study

Academic Importance

This study contributes to the literature on AI in clinical training by focusing on interns, a group with significant responsibility yet limited research representation.

Clinical Importance

Understanding how interns use AI may help identify tools that improve efficiency, support decision-making, and reduce cognitive load.

Institutional Importance

Findings will help inform AI training programs, usage guidelines, and integration strategies aligned with **Saudi Vision 2030**.

Future Development

The results may guide development of standardized AI competencies for medical interns and support safe integration of AI in clinical settings.

4.Objectives

Main Objective:

To assess AI usage, perceptions, and challenges among medical interns at King Abdulaziz University.

Specific Objectives:

1. To determine the frequency and patterns of AI tool usage among medical interns.
2. To measure interns' perceived usefulness of AI in clinical reasoning and learning.
3. To identify challenges and limitations encountered while using AI.
4. To evaluate interns' attitudes toward integrating AI into medical training.

5.Research Questions

1. What benefits do interns perceive from using AI?
2. What challenges do interns face while using AI tools?
3. What are interns' overall attitudes toward AI integration in medical training?

6.Methodology

6.1 Study Design

Cross-sectional descriptive study.

6.2 Setting

Internship Program, King Abdulaziz University, Jeddah, Saudi Arabia.

6.3 Participants

Medical interns enrolled in the KAU internship program in 2025.

6.4 Data Collection Tool (Questionnaire)

A structured, self-administered questionnaire adapted from validated tools used in AI perception and readiness studies (Amisha et al., 2019; Oh et al., 2021).

Sections of the Questionnaire:

Section 1 – Demographics

- Gender
- Age
- Months in the internship year
 - < 6 months
 - 6-12 months
 - > 12 months

Section 2 – Perceived Usefulness (Likert scale: 1 = Strongly Disagree to 5 = Strongly Agree)

- AI helps me understand various medical concepts.
- AI supports my clinical reasoning and decision-making.
- AI helps me retrieve updated medical information quickly.

Section 3 – Challenges (Likert scale: 1–5)

- AI sometimes provides inaccurate or unreliable information.
- I am concerned about becoming over-reliant on AI systems.

Section 4 – Overall Attitude (Likert scale: 1–5)

- AI is a valuable tool during internship training.
- AI should be integrated into medical education.
- I believe AI will play an essential role in future clinical practice.

6.5 Data Analysis

- Descriptive statistics (frequencies, percentages, means, SD).
- Inferential tests (t-test or chi-square) to examine differences between demographic groups.
- Data will be analyzed using **SPSS v26**.

7. References

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