Perceptions and Ethical Concerns Surrounding AI in Diagnostic Decision-Making: Insights from Thai Healthcare Professionals

Author: Nontat Sutham
Institution: Montfort College, Secondary Section

Abstract

Artificial Intelligence (AI) is rapidly transforming healthcare across Southeast Asia, with Thailand emerging as a leader in adopting diagnostic AI technologies. AI's potential in enhancing accuracy, speed, and coverage in diagnostics is evident; however, ethical and operational challenges persist, especially in the Thai socio-cultural context. This study explores the perceptions of 122 Thai healthcare professionals toward AI-based diagnostics. While there is broad support for its implementation, concerns about transparency, autonomy, patient consent, and legal accountability prevail. This paper calls for culturally sensitive policy frameworks and ethical standards to guide AI's responsible use in Thai medicine.

1. Introduction

Thailand is advancing toward smart healthcare systems through initiatives such as Thailand 4.0, integrating AI into diagnostics, hospital systems, and patient monitoring. Despite the technological momentum, ethical considerations and policy frameworks remain underdeveloped. This research addresses three questions:

- What are Thai healthcare professionals' views on AI in diagnostics?
- What ethical concerns are most urgent?
- What policy levers can ensure responsible AI implementation?

2. Literature Review

2.1 AI in Global and Thai Diagnostics

AI applications in diagnostic imaging and electronic health records have seen implementation in top Thai hospitals like Siriraj, Ramathibodi, and Bumrungrad (Chokpatcharavate & Muthitacharoen, 2021). Yet, rural hospitals face infrastructure and staffing challenges, exacerbating healthcare inequality.

2.2 Ethical Challenges

Globally, AI in healthcare raises key concerns:

- *Transparency*: Systems often lack explainability.

- *Bias*: Algorithms may perpetuate systemic inequalities.
- *Autonomy and Consent*: Patients may be unaware of AI involvement.
- *Accountability*: Unclear responsibility in diagnostic errors (Morley et al., 2020).
  In Thailand, these issues are magnified by cultural norms like "Kreng Jai," which may deter open patient-clinician dialogue.

2.3 Local Policy Gaps

Thailand's PDPA is not specific to clinical AI. Neither the Medical Council nor the Ministry of Public Health has issued AI-specific diagnostic guidelines, creating uncertainty.

3. Methodology

This descriptive cross-sectional study used structured questionnaires with both quantitative and qualitative questions.

Participants (N = 122):

- Medical Students / Residents: ~50%
- Nurse Practitioners / PAs: ~40%
- Others: ~10%

Data Analysis: Descriptive statistics and thematic clustering were applied.

4. Results

4.1 AI Use

- 74% reported using AI in clinical settings.
- *AI Tools Used:*
  - Radiology AI: 77%
  - Decision Support: 54.1%
  - EHR Prediction: 50.8%

- Symptom Checker Apps: 66.4%

Usefulness Ratings:

- Daily: 4.9%
- Weekly: 50%
- Occasionally: 34.4%
- Rarely/Never: 10.7%

4.2 Ethical Concerns

- Loss of Clinical Autonomy: 26.2%
- Algorithmic Bias: 19.7%
- Lack of Transparency: 22.1%
- Privacy: 18.9%
- Legal Liability: 13.1%

4.3 Perceived Benefits

- Efficiency and Accuracy: 32% each
- Support in Complex Cases: 24.6%
- Reduced Diagnostic Errors: 11.5%

Support for Broader Integration:

- Yes: 20.5%
- No: 49.2%

- Unsure: 30.3%

5. Discussion

There is growing AI usage, especially in radiology and decision support, but trust is limited due to lack of explainability. Most clinicians demand human oversight. Cultural sensitivity and legal clarity are needed to prevent erosion of patient autonomy and clinician confidence. Legal ambiguity and lack of accountability mechanisms further inhibit adoption.

6. Conclusion

Thailand's healthcare professionals show cautious optimism toward AI. Broader adoption must be matched by transparent algorithms, clinician education, and culturally attuned ethical regulations. With the right infrastructure and safeguards, Thailand can lead the region in responsible AI deployment.

7. References

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