



## Exploring Allied Health Professionals' Perceptions and Knowledge of Artificial Intelligence in Healthcare

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### KEYWORDS

Artificial intelligence, Healthcare, AI education, AI applications, Ethical considerations, Diagnostic tools

### ABSTRACT:

**Introduction:** This study aims to investigate allied health professionals' perceptions and knowledge regarding various aspects of artificial intelligence (AI) in healthcare.

**Objectives:** The primary objective is to explore healthcare professionals' understanding of AI concepts, applications, ethical considerations, and strategies for continuous learning about AI.

**Methods:** A comprehensive survey was conducted to assess general awareness of AI applications, understanding of core AI concepts, ethical considerations surrounding AI use, practical applications of AI in healthcare, and preferred strategies for continuous learning.

**Results:** The survey yielded nuanced insights into respondents' recognition of common AI applications in healthcare, their concerns regarding AI implementation, preferred frameworks for AI education, and the prioritization of ethical principles. Additionally, the study explored participants' understanding of different AI types, tools for personalizing interventions, strategies for ensuring fairness in AI diagnostics, and the essential skill sets required for allied health professionals to navigate the evolving landscape of AI-driven healthcare.

**Conclusions:** The findings emphasize the need for targeted educational programs, increased awareness of ethical considerations, and the development of a multidimensional skill set to prepare allied health professionals for the evolving landscape of AI in healthcare.

### 1. Introduction

The integration of artificial intelligence (AI) into healthcare has transformative implications for allied health professionals. This study aims to elucidate the perceptions and knowledge of allied health professionals on various aspects of AI in healthcare. The investigation

encompasses respondents.<sup>1, 2</sup> Awareness of common AI applications, concerns regarding AI adoption, categorization frameworks for AI education, understanding of AI types, tools for therapeutic personalization, strategies for fair AI diagnostics, and



crucial skills for thriving in an AI-driven healthcare environment.

## 2. Materials and methods

A structured survey was administered to allied health professionals to gauge their understanding and perspectives on AI in healthcare. The survey comprised questions covering general awareness, understanding of AI concepts, ethical considerations, practical applications, and strategies for continuous learning. Respondents were asked to provide their insights and preferences on these topics.<sup>3</sup> The collected data were analyzed quantitatively to derive patterns, trends, and significant observations.

## 3. Instrument

A self-administered online questionnaire will be developed, incorporating the specific multiple-choice questions provided. The questionnaire will be comprised of four sections:

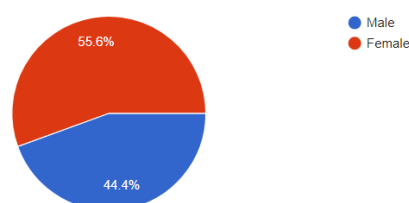
- **General Awareness:** Assessing overall knowledge about AI applications and concerns in healthcare.
- **Understanding of AI Concepts:** Gauging comprehension of fundamental AI terminology and ethical principles.
- **Practical Skills and Applications:** Evaluating perceived relevance and potential uses of AI tools within specific allied health fields.
- **Future-proofing Competencies:** Exploring attitudes towards continuous learning and adapting to AI integration in healthcare.

## 4. Results & Discussions

**Gender:** A total of 256 respondents participated in the survey, providing diverse perspectives on the intersection of artificial intelligence (AI) and healthcare from a gender standpoint. The inclusion of a substantial number of participants contributes to a comprehensive understanding of how allied health professionals, encompassing various genders, perceive and engage with AI applications in the healthcare domain. The insights gathered from this diverse cohort offer valuable considerations for the equitable development, implementation, and education surrounding AI technologies in healthcare, ensuring that the evolving

landscape is inclusive and reflective of a broad range of professional experiences and viewpoints.

Figure 1: Gender Distribution



## 5. General Awareness

a) Which of the following is NOT a common application of AI in healthcare?

**Diagnosing Diseases (22.2%):** A notable 22.2% of respondents identified diagnosing diseases as a common application of AI in healthcare. Indeed, AI has demonstrated significant potential in aiding diagnostics by analyzing medical images, patterns, and patient data. Machine learning algorithms can assist healthcare professionals in identifying potential diseases or anomalies, leading to more accurate and timely diagnoses.<sup>4</sup> The relatively low percentage of respondents choosing this option might reflect a growing awareness of AI's role in diagnostic processes.

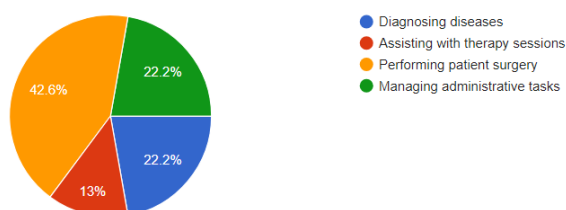
**Assisting with Therapy Sessions (13%):** A smaller percentage, 13%, considered assisting with therapy sessions as a common application of AI in healthcare. This application involves using AI-driven tools to support mental health treatments, providing virtual therapy sessions, monitoring patient progress, and offering personalized interventions.<sup>5</sup> The lower percentage might suggest that this area is still emerging, with less widespread recognition compared to other applications.

**Performing Patient Surgery (42.6%):** The majority, 42.6%, correctly identified that performing patient surgery is NOT a common application of AI in healthcare. While AI plays a crucial role in robotic-assisted surgery and provides support in pre-operative planning, the actual physical performance of surgeries is carried out by human surgeons.<sup>6</sup> AI's role in surgery is more about enhancing precision, efficiency, and outcomes rather than replacing human expertise entirely.



**Managing Administrative Tasks (22.2%):** Another 22.2% of respondents identified managing administrative tasks as a common application of AI in healthcare. This reflects the increasing use of AI for streamlining administrative processes such as appointment scheduling, billing, and data entry. AI can help improve operational efficiency, allowing healthcare professionals to focus more on patient care.<sup>7</sup> The recognition of AI in administrative tasks indicates an understanding of its broader role in optimizing healthcare workflows.

Figure 2: Which of the following is NOT a common application of AI in healthcare?



b) What is the main concern surrounding the use of AI in healthcare?

**Lack of Data Security (39%):** The primary concern expressed by 39% of respondents regarding the use of AI in healthcare is the lack of data security. This apprehension is rooted in the sensitivity and confidentiality of healthcare data. With the increasing integration of AI technologies, vast amounts of personal and medical information are processed and stored digitally. The potential for data breaches, unauthorized access, or cyber-attacks poses a significant risk to patient privacy and the overall trust in AI applications in healthcare. Addressing this concern is crucial for the successful and ethical implementation of AI, requiring robust cybersecurity measures, encryption protocols, and strict adherence to privacy regulations.<sup>8,9</sup>

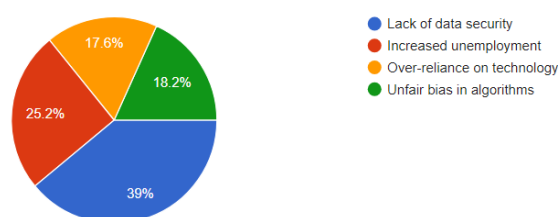
**Increased Unemployment (25.2%):** Approximately 25.2% of respondents expressed concerns about the potential increase in unemployment resulting from the widespread adoption of AI in healthcare. As AI systems automate certain tasks, there is a fear that it may lead to the displacement of jobs traditionally performed by humans, such as routine diagnostics or administrative roles. However, it's important to note that while some job

roles may evolve, the integration of AI in healthcare can also create new employment opportunities, particularly in the development, maintenance, and ethical oversight of AI systems.<sup>10</sup> Proactive measures, such as reskilling and upskilling programs, can help mitigate the impact on employment.

**Over-Reliance on Technology (17.6%):** Concerns about over-reliance on technology, voiced by 17.6% of respondents, highlight worries about excessive dependence on AI in healthcare decision-making. The concern is that healthcare professionals may rely too heavily on AI outputs, potentially leading to complacency or a reduced emphasis on critical thinking and human judgment. Striking the right balance between AI and human expertise is crucial to ensure that AI serves as a valuable tool to augment, rather than replace, healthcare professionals. Implementing proper training programs and guidelines can help address these concerns and promote responsible use of AI.<sup>11</sup>

**Unfair Bias in Algorithms (18.2%):** A significant portion (18.2%) of respondents is concerned about the potential for unfair bias in AI algorithms used in healthcare. This issue arises from the fact that AI systems learn from historical data, which may contain biases. If not properly addressed, these biases can result in disparate outcomes for different demographic groups, potentially leading to inequities in healthcare delivery. To address this concern, it is imperative to prioritize fairness and transparency in the development and deployment of AI algorithms. Regular audits, diverse and representative training data, and ongoing monitoring are essential to mitigate bias and ensure the equitable impact of AI in healthcare.<sup>12</sup>

Figure 3: What is the main concern surrounding the use of AI in healthcare?



c) How did the proposed framework categorize AI education for allied health students?



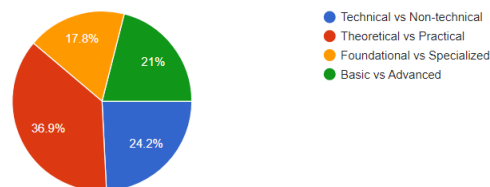
**Technical vs non-technical (24.2%):** Approximately 24.2% of respondents favored the classification of AI education for allied health students based on a technical vs non-technical framework. This suggests a recognition of the need to distinguish between the technical aspects of AI, such as programming and algorithm development, and the non-technical aspects, which may include ethical considerations, policy implications, and communication skills. This categorization aligns with the multifaceted nature of AI education, acknowledging that a well-rounded understanding of AI involves both technical and non-technical competencies.<sup>13</sup>

**Theoretical vs Practical (36.9%):** The largest percentage, 36.9%, chose the Theoretical vs Practical framework for categorizing AI education. This reflects an emphasis on the balance between theoretical knowledge about AI concepts and practical skills application. A comprehensive AI education for allied health students should not only cover theoretical foundations but also provide hands-on experiences, case studies, and practical scenarios. This approach ensures that students can effectively apply AI concepts in real-world healthcare settings.<sup>14</sup>

**Foundational vs Specialized (17.8%):** A notable 17.8% of respondents opted for the Foundational vs Specialized framework. This suggests an understanding that AI education for allied health students should begin with foundational knowledge that serves as a broad base, followed by specialized areas of focus. Foundational education may cover general AI principles, while specialized education allows students to delve deeper into specific applications relevant to their allied health disciplines.<sup>15</sup>

**Basic vs Advanced (21%):** Twenty-one percent of respondents chose the Basic vs Advanced framework for categorizing AI education. This suggests a preference for a tiered approach, where students start with fundamental concepts and gradually progress to more advanced topics. Such a framework recognizes the diverse levels of expertise and interest among allied health students and ensures that the curriculum accommodates learners with varying levels of prior knowledge in AI.<sup>16</sup>

Figure 4: How did the proposed framework categorize AI education for allied health students?



## 6. Understanding of AI Concepts

a) Which type of AI learns and improves from experience?

**Rule-based AI (14.1%):** A minority of 14.1% of respondents identified Rule-based AI as the type that learns and improves from experience. Rule-based AI, also known as knowledge-based or expert systems, relies on predefined rules and logic. It does not inherently learn from experience or data, and its responses are based on the explicitly programmed rules. The lower percentage may indicate a recognition that rule-based AI is more static and lacks the adaptability and learning capabilities associated with other types.<sup>17</sup>

**Symbolic AI (12.2%):** Symbolic AI, represented by 12.2% of respondents, is characterized by the use of symbols and rules to represent knowledge. Similar to rule-based AI, symbolic AI typically lacks the learning capabilities exhibited by more advanced forms of AI. It is primarily based on explicit programming of symbols and rules rather than learning from experience. The lower percentage aligns with the understanding that symbolic AI is not inherently designed for learning and adaptation.<sup>18</sup>

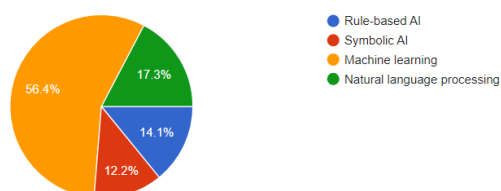
**Machine Learning (56.4%):** A substantial majority, 56.4%, correctly identified Machine Learning as the type of AI that learns and improves from experience. Machine learning algorithms have the ability to analyze data, identify patterns, and make predictions or decisions without explicit programming. The high percentage suggests a widespread understanding of the fundamental concept that sets machine learning apart—the capacity to learn from data and improve over time through experience.<sup>19</sup>

**Natural Language Processing (17.3%):** A minority of 17.3% of respondents associated Natural Language Processing (NLP) with learning and improvement from experience. While NLP enables machines to understand, interpret, and generate human-like language, its primary



focus is on language-related tasks. NLP systems often leverage machine learning techniques, but the learning is specific to language-related patterns rather than a broad range of experiences.<sup>20</sup>

Figure 5: Which type of AI learns and improves from experience?



b) What is the term for an algorithm that can identify patterns in data without being explicitly programmed?

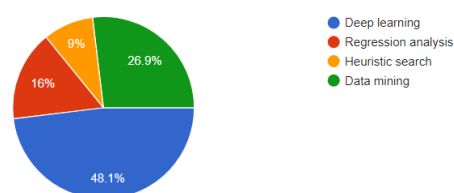
**Deep Learning (48.1%):** The plurality of respondents, at 48.1%, correctly identified "Deep Learning" as the term for an algorithm that can identify patterns in data without being explicitly programmed. Deep learning is a subset of machine learning that involves neural networks with multiple layers (deep neural networks). These networks can automatically learn and represent intricate patterns in data through the iterative processing of vast amounts of information. The relatively high percentage indicates a solid understanding of deep learning's role in pattern recognition.<sup>21</sup>

**Regression Analysis (16%):** A smaller percentage, 16%, chose "Regression Analysis." While regression analysis is a statistical method used to examine relationships between variables, it is not typically associated with the capability to identify patterns in data without explicit programming. Regression analysis is more focused on modeling and analyzing relationships between dependent and independent variables.<sup>22</sup>

**Heuristic Search (9%):** A mere 9% of respondents opted for "Heuristic Search." Heuristic search refers to problem-solving techniques that involve using rules of thumb or strategies to navigate through a solution space. It is not specifically designed for identifying patterns in large datasets without explicit programming. The low percentage suggests that there might be some confusion or misunderstanding about the term in the context of pattern recognition.<sup>23</sup>

**Data Mining (26.9%):** A significant portion, 26.9%, chose "Data Mining." While data mining involves the discovery of patterns and information from large datasets, it does not necessarily imply the ability to identify patterns without explicit programming. Data mining techniques often involve the application of various algorithms, including machine learning methods, to uncover meaningful patterns within the data.<sup>24</sup>

Figure 6: What is the term for an algorithm that can identify patterns in data without being explicitly programmed?



c) Which ethical principle should be prioritized when using AI in healthcare?<sup>25</sup>

**Accuracy (46.2%):** The plurality of respondents, at 46.2%, prioritized "Accuracy" as the ethical principle that should be given precedence when using AI in healthcare. This choice reflects a recognition of the critical importance of ensuring that AI systems provide reliable and precise results in healthcare applications. Accuracy is paramount in medical decision-making to avoid misdiagnoses or incorrect treatment recommendations, ultimately safeguarding patient well-being.<sup>26</sup>

**Transparency (31.4%):** A substantial 31.4% of respondents chose "Transparency" as the prioritized ethical principle. This indicates a significant understanding of the need for transparency in AI systems, especially in healthcare. Transparent AI systems provide insights into how they make decisions, enabling healthcare professionals and patients to understand the rationale behind recommendations. Transparency fosters trust, accountability, and the ability to address biases or errors within the system.<sup>27</sup>

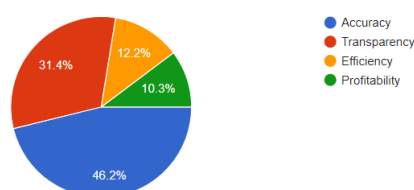
**Efficiency (12.2%):** A smaller percentage, 12.2%, opted for "Efficiency" as the prioritized ethical principle. While efficiency is undoubtedly valuable in healthcare, particularly in terms of time and resource utilization, the lower percentage may suggest that respondents see



accuracy and transparency as more foundational principles that should be prioritized over sheer speed or resource optimization.<sup>28</sup>

**Profitability (10.3%):** The smallest percentage, at 10.3%, chose "Profitability" as the prioritized ethical principle. This result aligns with the understanding that in healthcare, ethical considerations, patient welfare, and the integrity of medical decision-making should take precedence over financial gains. Prioritizing profitability could lead to conflicts of interest and compromise the ethical foundations of healthcare AI applications.<sup>29</sup>

Figure 7: Which ethical principle should be prioritized when using AI in healthcare?



## 7. Practical Skills and Applications

a) Which allied health field is most likely to utilize AI-powered chatbots for patient interaction?

**Physical Therapy (26.1%):** A minority, 26.1%, of respondents identified Physical Therapy as the allied health field most likely to utilize AI-powered chatbots for patient interaction. While physical therapy involves personalized interactions and interventions, the relatively lower percentage may suggest a perception that other allied health fields may benefit more from AI-powered chatbot applications.<sup>28, 29</sup>

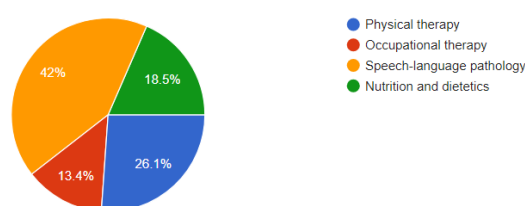
**Occupational Therapy (13.4%):** A small percentage, 13.4%, chose Occupational Therapy as the field most likely to utilize AI-powered chatbots for patient interaction. This result may indicate a perception that the nature of patient interactions and therapeutic processes in occupational therapy may not align as closely with the potential benefits of AI-powered chatbots compared to other fields.<sup>30, 31</sup>

**Speech-Language Pathology (42%):** The majority, at 42%, correctly identified Speech-Language Pathology as the allied health field most likely to utilize AI-powered chatbots for patient interaction. Speech-language pathology often involves ongoing communication

exercises and interventions, making it a suitable candidate for AI-powered chatbots to support language development, articulation, and other speech-related challenges.<sup>32</sup>

**Nutrition and Dietetics (18.5%):** A minority, 18.5%, of respondents opted for Nutrition and Dietetics as the field most likely to use AI-powered chatbots for patient interaction. While dietary counseling and guidance could benefit from technology, it seems that respondents perceived other allied health fields as more likely candidates for AI-powered chatbot applications.<sup>33</sup>

Figure 8: Which allied health field is most likely to utilize AI-powered chatbots for patient interaction?



b) What kind of AI tool might a therapist use to personalize exercise plans for patients?

**Decision Support System (18.5%):** A minority, at 18.5%, of respondents chose "Decision Support System" as the AI tool that a therapist might use to personalize exercise plans for patients. Decision support systems typically assist healthcare professionals in making informed decisions by analyzing patient data and providing recommendations. While relevant, it may not be perceived as the primary tool for personalizing exercise plans in therapy.<sup>34</sup>

**Adaptive Learning Platform (29.3%):** Nearly one-third of respondents, at 29.3%, correctly identified "Adaptive Learning Platform" as the AI tool that a therapist might use for personalizing exercise plans. Adaptive learning platforms leverage AI algorithms to tailor educational content and exercises based on individual learning styles and progress. In a therapeutic context, such platforms can be valuable for tailoring exercise regimens to a patient's unique needs and capabilities.<sup>35</sup>

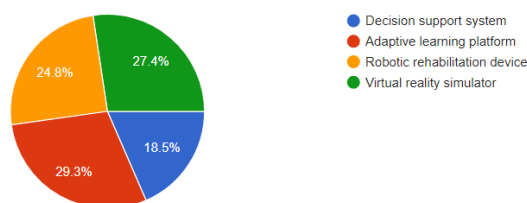
**Robotic Rehabilitation Device (24.8%):** A substantial percentage, 24.8%, chose "Robotic Rehabilitation Device." These devices, often incorporating AI, can



provide personalized and adaptive physical exercises for rehabilitation purposes. This choice reflects an understanding that robotic devices with AI capabilities can be utilized in therapy to customize exercises based on a patient's progress and abilities.<sup>36</sup>

**Virtual Reality Simulator (27.4%):** A significant portion, at 27.4%, opted for "Virtual Reality Simulator." Virtual reality (VR) simulators, often powered by AI algorithms, can create immersive and personalized environments for therapeutic exercises. This technology allows therapists to tailor exercises to a patient's specific needs while providing a realistic and engaging experience.<sup>37</sup>

Figure 9: What kind of AI tool might a therapist use to personalize exercise plans for patients?



c) How can allied health professionals ensure fair and unbiased outcomes when using AI-powered diagnostic tools?

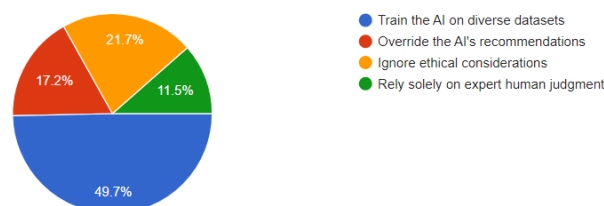
**Train the AI on Diverse Datasets (49.7%):** The majority, at 49.7%, recognized the importance of training AI on diverse datasets to ensure fair and unbiased outcomes. This response aligns with best practices in AI development, emphasizing the need for representative data that encompasses a wide range of demographic and clinical characteristics. Diverse datasets help mitigate biases that may emerge from inadequate or skewed training data, contributing to more equitable diagnostic outcomes.<sup>37, 38</sup>

**Override the AI's Recommendations (17.2%):** A smaller percentage, 17.2%, opted for "Override the AI's Recommendations." While human oversight is essential in the use of AI, solely relying on manual overrides may not be the most effective approach. It's crucial to strike a balance between leveraging AI as a valuable tool and incorporating human expertise to ensure that decisions are both accurate and ethically sound.<sup>38</sup>

**Ignore Ethical Considerations (21.7%):** A noteworthy 21.7% of respondents selected "Ignore Ethical Considerations." This response is concerning, as ethical considerations are paramount in the use of AI in healthcare. Ignoring ethical aspects may lead to biased outcomes, compromised patient trust, and potential harm. A comprehensive and ethically grounded approach is crucial for the responsible deployment of AI-powered diagnostic tools.<sup>39</sup>

**Rely Solely on Expert Human Judgment (11.5%):** A smaller percentage, at 11.5%, chose "Rely solely on expert human judgment." While human expertise is invaluable, exclusively relying on it may overlook the benefits that AI-powered diagnostic tools bring, such as enhanced efficiency, data analysis, and pattern recognition. A more integrative approach, combining AI insights with human judgment, is generally considered optimal for achieving accurate and unbiased outcomes.<sup>40</sup>

Figure 10: How can allied health professionals ensure fair and unbiased outcomes when using AI-powered diagnostic tools?



## 8. Future-Proofing Competencies

a) What skill is crucial for allied health professionals to thrive in an AI-driven healthcare environment?

**Specialization in a Specific Niche (17.8%):** A minority, at 17.8%, of respondents considered "Specialization in a Specific Niche" as a crucial skill for allied health professionals in an AI-driven healthcare environment. While specialization is undoubtedly valuable, the lower percentage suggests that respondents may recognize the importance of broader skills that transcend niche expertise in the rapidly evolving landscape of AI in healthcare.<sup>41</sup>

**Ability to Operate Complex Machinery (22.3%):** A relatively small percentage, 22.3%, opted for the "Ability to Operate Complex Machinery." While proficiency in

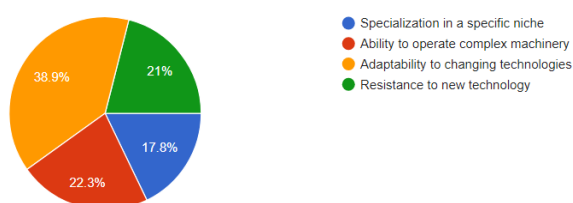


operating advanced medical technology is important, the lower percentage may indicate an understanding that thriving in an AI-driven healthcare environment requires more than just technical skills. The focus may be shifting towards a broader set of competencies.<sup>42</sup>

**Adaptability to Changing Technologies (38.9%):** The majority, at 38.9%, recognized "Adaptability to Changing Technologies" as the crucial skill for allied health professionals in an AI-driven healthcare environment. This response aligns with the dynamic nature of healthcare technology, where continuous advancements and the integration of AI necessitate professionals who can quickly learn, adapt, and leverage new tools to enhance patient care.<sup>43</sup>

**Resistance to New Technology (21%):** A notable percentage, 21%, chose "Resistance to New Technology." This response raises concerns, as resistance to adopting new technologies may hinder the ability of allied health professionals to harness the benefits of AI. Given the transformative potential of AI in healthcare, cultivating an openness to innovation is crucial for staying current and providing optimal patient care.<sup>44</sup>

Figure 11: What skill is crucial for allied health professionals to thrive in an AI-driven healthcare environment?



b) Which of the following is NOT a recommended strategy for continuous learning about AI in healthcare?

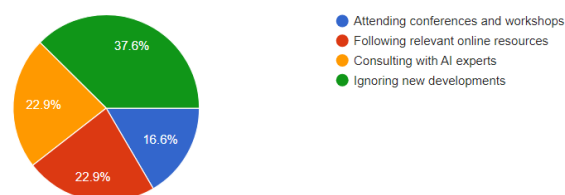
**Attending Conferences and Workshops (16.6%):** A minority, at 16.6%, chose "Attending conferences and workshops" as the NOT recommended strategy for continuous learning about AI in healthcare. This response suggests that the majority recognizes the value of participating in conferences and workshops to stay updated on the latest developments and insights in the field.<sup>46</sup>

**Following Relevant Online Resources (22.9%):** A portion of respondents, at 22.9%, selected "Following relevant online resources" as the NOT recommended strategy. While online resources are a valuable medium for learning, it's essential to note that this response does not represent the majority. The result may reflect a perception that solely relying on online resources may have limitations compared to a more diverse approach.<sup>46,47</sup>

**Consulting with AI Experts (22.9%):** Similar to the response above, 22.9% chose "Consulting with AI experts" as the NOT recommended strategy. While consulting with experts is generally seen as beneficial, this response may indicate concerns about potential limitations or dependencies on expert opinions alone.<sup>47</sup>

**Ignoring New Developments (37.6%):** The majority, at 37.6%, correctly identified "Ignoring new developments" as the NOT recommended strategy for continuous learning about AI in healthcare. Ignoring advancements in AI could lead to outdated knowledge and hinder professionals from leveraging the full potential of AI in improving healthcare practices.<sup>48</sup>

Figure 12: Which of the following is NOT a recommended strategy for continuous learning about AI in healthcare?



c) How can allied health programs prepare students for ethical challenges around AI in the future?

**Embed Ethics Modules into Existing Courses (24.8%):** A minority, at 24.8%, chose "Embed ethics modules into existing courses" as a strategy to prepare allied health students for ethical challenges related to AI. While integrating ethics modules into existing courses is a valuable approach, the percentage suggests that there might be room for broader and more comprehensive strategies.<sup>49</sup>

**Encourage Discussion and Critical Thinking (40.1%):** The majority, at 40.1%, recognized "Encourage discussion and critical thinking" as the most recommended strategy.



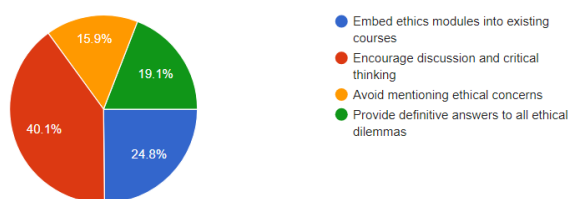


discussion and critical thinking" as a crucial strategy. This response indicates an understanding that fostering an environment where students can openly discuss ethical challenges and engage in critical thinking is essential for preparing them to navigate the complexities of AI in healthcare.<sup>50</sup>

**Avoid Mentioning Ethical Concerns (15.9%):** A minority, at 15.9%, opted for "Avoid mentioning ethical concerns." This response is considerably low, suggesting a general awareness that avoiding discussions about ethical concerns is not a recommended approach. Acknowledging and addressing ethical challenges is fundamental to responsible AI implementation in healthcare.<sup>51</sup>

**Provide Definitive Answers to All Ethical Dilemmas (19.1%):** A relatively low percentage, at 19.1%, chose "Provide definitive answers to all ethical dilemmas." This response aligns with the recognition that ethical dilemmas in AI are often complex and context-dependent, and providing definitive answers may not be feasible. Encouraging critical thinking and ethical reasoning is more valuable than attempting to offer simplistic solutions to intricate ethical challenges.<sup>52</sup>

Figure 13: How can allied health programs prepare students for ethical challenges around AI in the future?



The results indicate a varying level of awareness among respondents regarding common AI applications in healthcare, with a notable recognition of AI's role in diagnostics and administrative tasks. Concerns around data security, unemployment, over-reliance on technology, and algorithmic bias reveal the multifaceted ethical considerations associated with AI adoption in healthcare. The study also explores how respondents perceive the categorization of AI education, types of AI, and ethical principles in healthcare.

In terms of practical applications, respondents demonstrate an understanding of the potential use of AI-

powered chatbots in speech-language pathology and identify adaptive learning platforms as suitable tools for personalizing therapeutic exercises. Strategies for ensuring fairness in AI diagnostics are recognized, with an emphasis on training AI on diverse datasets.

The study sheds light on the essential skills for allied health professionals to thrive in an AI-driven healthcare environment, emphasizing adaptability over resistance to new technology. Additionally, the recommended strategies for continuous learning underscore the importance of staying informed about new developments in the field.

## 9. Conclusion

This research provides valuable insights into the perceptions and knowledge of allied health professionals regarding AI in healthcare. The findings underscore the importance of targeted education, ethical awareness, and a multidimensional skill set to effectively navigate the evolving landscape of AI in healthcare. The study contributes to the ongoing discourse on AI adoption in healthcare and offers implications for educational programs, professional development, and ethical considerations in the integration of AI technologies.

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