Chapter 5
Cultural Competence in AI-Driven Health Information

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ABSTRACT

John McCarthy is credited as the first person to use the term artificial intelligence (AI) in 1956. The debate regarding replacing humans with AI has become increasingly plausible due to technological advancements. The application of AI in healthcare has expanded, enhancing quality, diminishing expenses, and preserving lives. Ensuring inclusion in AI-driven health systems requires the utmost importance of cultural knowledge. Obstacles encompass prejudice, cultural obstacles, and heterogeneity in datasets. Gaining a comprehensive understanding of cultural diversity in healthcare is crucial for successfully adopting AI. Researchers and policymakers must emphasise cultural competence in AI systems to ensure fair and impartial treatment for all individuals.

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1. BRIEF OVERVIEW OF THE INCREASING ROLE OF AI IN HEALTHCARE

According to Kostic et al. (2019), John McCarthy introduced the term artificial intelligence (AI) in 1956. Artificial intelligence (AI) primarily depends on analysing extensive databases, identifying interconnections, comparing intricate symptoms and indicators, and formulating algorithms to address issues (Jiang et al., 2017). In recent decades, there has been a notable rise in the number of peer-reviewed papers on artificial intelligence (AI), which can be attributed to the growing interest in this field (Tran et al., 2019).

AI's use in the healthcare sector is expected to experience significant expansion (Gerke et al., 2020). Current applications encompass disease diagnostics, pharmaceutical advancements, individualised treatment approaches, supportive healthcare services, and genetic manipulation. AI's application in medicine can be categorised into two broad domains: visual and physical. The scope of Visual AI encompasses electronic medical records, reminders for outpatient appointments, and applications for health tracking. On the other hand, physical AI includes activities like robotic surgeries and robotic drug dispensers. AI has experienced a substantial enhancement in its capabilities. Technological singularity (TS) is an alternative term for AI-enabled systems. TS refers to a theoretical scenario wherein artificial intelligence (AI) develops an unmanageable superintelligence that is anticipated to exceed human intelligence, leading to unpredictable consequences (Solez et al., 2013; Smolin, 2020). This scenario is projected to unfold between 2040 to 2050 (Solez et al., 2013).

At its most fundamental level, TS in healthcare will necessitate the substitution of human physicians with peripheral systems and AI-enabled robotics. An instance of TS in the future of healthcare was demonstrated during the production of the American science fiction series Star Trek Voyager (1995-2001). The programme featured an AI hologram of a physician who attended to the personnel of the spaceship. With the current rate of technological advancements in AI, the argument about the potential of AI replacing humans has evolved from fictitious to realistic. Some scientists think AI in healthcare can perform on par with humans. Others remain sceptical regarding the substantial transition in healthcare towards Artificial Intelligence and its subsequent advancement. Artificial Intelligence has seen significant growth over time since it can enhance the calibre of healthcare, diminish expenses, and save lives. Nevertheless, it is imperative to guarantee the ethical and transparent use of artificial intelligence (AI) in the healthcare sector while safeguarding patients' privacy and to thoroughly evaluate these advancements' potential socio-legal and moral implications and equip society to adopt and accommodate such transformations when they occur effectively.