ABSTRACT

Artificial Intelligence (AI) promises improved care and patient outcomes through early detection, improvement in workflow, reduction in error, and cost in healthcare. The commercial use of AI in healthcare has been growing rapidly recently, and several AIbased diagnostic tools for use by both medical practitioners and consumers/patients have come up. However, despite the promises and apparent benefits, the adoption has been slow, and failure rates have been high. Literature suggests that several unique concerns could impede the adoption in this context. Despite the importance, the academic research into the various issues related to adopting these tools has been sparse and fragmented. Based on the gaps identified in the literature, this research aims to conduct a comprehensive assessment of the factors (enabling and inhibiting) influencing the medical practitioners' intentions to use AI-based intelligent clinical diagnostic decision support system (ICDDSS) (study 1) and investigate the determinants of consumers' trust in AI-based Chatbots for Self-Diagnosis (AICSD) and the impact of trust on intention to use (study 2). A sequential mixed-methods empirical design consisting of an exploratory qualitative stage followed by a confirmatory quantitative survey was used to address the objectives of study 1. Similarly, for study 2, a free simulation experimentbased research was conducted. The empirical results of study 1 revealed that initial trust in ICDDSS, performance expectancy and social influence are the key enablers of intentions to use, while resistance to change the main inhibitor. Further, inertia, perceived threat, performance risk, and medico-legal risk determine resistance to change. As per study 2, perceived anthropomorphism, information quality, perceived explainability, disposition to trust technology, and service quality predict consumers' trust in AICSD. Trust, privacy risk, and health risk, in turn, determine intention to use. The study (study 1) contributes by providing a framework for understanding medical practitioners' response to the change introduced by the ICDDSS in practice. It offers measures that can aid in managing user resistance and enhancing user adoption. Similarly, study 2 contributes by identifying and validating unique antecedents of consumer trust in AICSD. It also provides insights that can help developers and marketers formulate strategies to improve perceived trust/use of AICSD.

Keywords: Artificial Intelligence, Intelligent clinical diagnostic decision support systems, Health Chatbot, Technology adoption, User resistance, Trust in Technology