Chapter 8
Timeliness and Appropriateness of Cross-Sectional Study Design in the Study of Online Health Information Seeking Using AI

Shujin Lin
https://orcid.org/0009-0009-2840-7316
Xiamen University Malaysia, Malaysia

ABSTRACT

Users using AI such as ChatGPT and Gemini for health consultation and self-diagnosis is becoming a popular way of health information-seeking for the public, which marks a noticeable change in the ways people interact with health information. Under such a status quo, it leads to a need to systematically study on the users' behaviour in key factors including perceived trust, motivations and levels of satisfaction. This study proposes that the Cross-sectional Study Design is the timely and appropriate approach to explore in this new-appearing phenomenon. In addition, to sufficiently explain the use of cross-sectional studies in the research of using AI for health information-seeking, this study also constructs a preliminary conceptual research framework based on the Planned Risk Information Seeking Model (PRISM) and Health Belief Model (HBM) with several exemplary research questions, aiming to discuss how factors from different groups including perceived

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trust on AI-generated information, usage motivations and the perceived accuracy of information affect their behavioural intentions.

1. INTRODUCTION

In recent years, Artificial Intelligence (AI) technologies have experienced rapid development and shown enormous implemental potential in different fields, the healthcare field is no exception. Traditional medical research and clinical practices often rely on experienced professionals and structured data, which requires a huge amount of human material resources, and even leads to lower efficiency and higher expenditure (Wang et al., 2024). To solve these issues, researchers have started to study on the possibility of using AI to improve the quality and efficiency of medical services.

During the COVID-19 pandemic, the increasing pressure on the healthcare system accelerated a new form of "doctor" – digital symptom checkers. The emergence of COVID-19 quickly rose people's interests in remote medical assessment tools. Such rapid increase of interest was also based on the growing demand of obtaining immediate and convenient information (Esmaeilzadeh et al., 2025). Although the traditional online platforms such as the search engines and social media hold comparatively high accessibility and various contents, these platforms are generally lack for real-time interaction, contextual guidance and personalised support, which makes it functionally limited in dealing with complicated health issues (Jibril & Adzovie, 2022). The web-based symptom checkers are artificial intelligence-supported software which function as chatbots in supporting diagnosis and classification (Morse et al., 2020). OpenAI introduced ChatGPT on December 22, 2022, which is a large language model AI trained based on a large amount of text data and is able to generate responses just like humans. By February 2025, the worldwide weekly active users of ChatGPT have reached 400 million (Backlinko, 2025). Shen et al. (2024) suggested that compared to traditional web search, ChatGPT had a more outstanding performance in answering the questions from patients which were related to symptom-based diagnoses, and has an equivalent result in providing medical knowledge and established policies. ChatGPT can effectively deliver information and support to the patient in multiple scenarios, such as mental health assessment, consultation, education, and medication management (Cascella et al., 2023). Instead of treating AI as a pure technical tool, it is more like an interactive object which holds impact on human behaviour, decision-making and health information processing styles. As the promising performance in searching for healthcare knowledge, there underlines a big possibility that AI tools like ChatGPT may replace traditional search engines such as Google Search in the coming future (Duarte, 2025; Incerti Parenti et al.,

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www.irma-international.org/article/management-of-new-automatic-ticket-vending-machine-system-in-urban-rail-transit/344796