

EVALUATING THE ROLE OF DIGITAL HEALTH AND CHATBOTS IN
HYPERTENSION MANAGEMENT: A SCOPING
LITERATURE-BASED REVIEW

Submitted to



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by

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Introduction

Hypertension is a major global public health challenge, affecting over 1.3 billion people and remaining difficult to control due to poor adherence and limited monitoring. This internship was conducted at IIHMR University, Jaipur (March 10 – May 31, 2025) under the guidance of Dr. Swapnil Gadhave. During this period, I worked on the topic of “Digital Health and Chatbots in Hypertension Management,” building on my MBA dissertation. The internship experience combined academic research with practical learning on digital innovations for chronic care. In particular, it examined how digital health technologies (mobile health apps, telemonitoring systems, wearable sensors) and AI-driven chatbots can support patient engagement, medication adherence, and blood pressure (BP) control. These tools are seen as promising adjuncts to traditional care, offering scalable and personalized support for hypertension self-management.

Objectives of Internship

- **Understand digital health technologies:** Gain in-depth knowledge of various digital health interventions (e.g. mHealth apps, telehealth platforms, wearable devices) and how they can transform chronic disease care by providing scalable, accessible, and personalized.
- **Explore AI-driven chatbots:** Learn how chatbots function as AI-powered conversational agents in healthcare, assisting patients with medication reminders, BP tracking, education, and lifestyle coaching. This included studying their usability, patient acceptability, and potential to extend care beyond clinical settings.
- **Learn hypertension care context:** Deepen understanding of hypertension management challenges (e.g. treatment adherence, continuous monitoring, healthcare access) and strategies to improve outcomes (e.g. remote monitoring, patient education).
- **Develop research skills:** Acquire practical experience in conducting a systematic scoping literature review following PRISMA guidelines. This involved designing search strategies across databases (PubMed, Embase, CINAHL, Cochrane, IEEE Xplore) using keywords like “hypertension,” “digital health,” and “chatbots,” and synthesizing evidence thematically. The goal was to sharpen skills in data gathering, critical appraisal, and evidence synthesis.

Key Learnings from Internship

- **Digital tools improve blood pressure control:**

I learned that using digital health tools like mobile apps and telemonitoring systems can help reduce systolic blood pressure by 3–5 mmHg. These tools support regular tracking and healthy habits, making them helpful in managing hypertension.

- **Chatbots are easy to use and effective:**

Chatbots were found to be user-friendly and well-accepted by patients. Some had a 98% success rate in task completion and scored high in usability tests. They reminded patients to take their medicines, track their BP, and provided useful health tips—making them useful for improving patient engagement.

- **Gained experience in research methods:**

I followed the PRISMA method to search and review studies from various medical databases. I grouped the findings based on chatbot features and results. This helped me improve my skills in analyzing and summarizing health research.

- **Identified research challenges:**

Many studies had small sample sizes, short durations, and different ways of measuring results. This made it harder to compare their findings. It showed the need for more long-term studies with standard methods.

- **Understanding the bigger picture:**

I understood that digital health tools, especially chatbots, can reduce the burden on healthcare systems by supporting patients outside clinics. But for success, these tools must be easy to use, respect privacy, and fit well into existing healthcare setups.