

PERSPECTIVES IN HYPERTENSION

The development of a 'chatbot' for management of hypertension in Pakistan

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The role of artificial intelligence (AI) in cardiovascular medicine & hypertension has been highly recognized.¹⁻³

AI is the science and engineering of developing machines that are capable of simulating human thought process & learning based on applying complex algorithms & advanced computational power to large amounts of data, referred to as big data.¹

Based on these principles PHL introduced a 'chatbot' project at its 27th annual symposium in September 2024. This project is supported by a leading Pakistani Pharma Pharmevo.

Cardiovascular diseases are the leading cause of death globally with hypertension its major risk factor. In Pakistan 44% of the population aged between 30-79 years suffer from hypertension, out of which 56% remain undiagnosed, and 65% known hypertensives are not receiving treatment, highlighting a critical gap in healthcare. Only 11% have their BP under control.

Challenges in hypertension management

Challenges in hypertension management in Pakistan include:

- A high prevalence of hypertension, but low diagnosis & control rates.
- A lack of adherence to treatment and awareness of the complications of hypertension.
- The need for national guidelines & clear blood pressure (BP) control targets.

The objective of the PHL chatbot project is to raise awareness and improve management of hypertension in alignment with WHO recommendations, through the use of the chatbot.

Heart line Chatbot

An AI powered 'Heart line Chatbot' was launched to guide hypertensive patients from initial diagnosis to treatment pathways. It was available in both English and Urdu to ensure easy accessibility and to reach a wider audience across Pakistan. The chatbot not only educates but also connects patients with healthcare providers through a geo-tagging feature. One thousand family physicians will be geo-tagged on Google Maps, enabling patients to easily locate and connect with doctors in their vicinity for timely management of their hypertension.

Heart Line Chatbot impact

The chatbot aims to be an AI-driven solution, addressing gaps in patient education and self-care.

It aims to provide step by step guidance for hypertensive patients, encouraging proactive management.

We are developing a mass awareness initiative for both patients and healthcare providers around the chatbot, enhancing the success of the chatbot.

Public awareness and education

PHL will run an awareness and education campaign, which will involve social media outreach to 40 million people, public information sessions, and mass screening of the population for the early detection of hypertension. We will also promote home BP monitoring to the public.

Healthcare provider training

We will run a training programme around the chatbot for family physicians based on hypertension guidelines, as well as training for non-physician staff who were trained as hypertension counsellors. We will also put details of 1,000 family physicians on Google Maps, so that patients could find these physicians via the chatbot.

Expected outcomes by 2040

Our project aims to save 839,000 lives through improved hypertension control and to enhance patient engagement in management of hypertension. We aim to train and build capacity in 1,000 family physicians and 100 hypertension counsellors, and to develop new national hypertension guidelines aligned with the WHO which include reference to the chatbot.

References

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