I. INTRODUCTION

Rapid technology improvements have had a substantial impact on a variety of areas, including healthcare [1]. Chatbots, as an implementation of artificial intelligence (AI), have emerged as a powerful tool to facilitate communication and provide information efficiently. In healthcare, chatbots are increasingly being used to offer personalized health advice, schedule appointments, and disseminate important health information [2]. However, the adoption and customization of chatbots tailored to specific linguistic and cultural contexts remains largely unexplored.

Indonesia, with its large and linguistically diverse population, faces unique challenges in health communication [3]. These challenges include accessibility to reliable health information and overcoming language barriers in underserved areas [4]. To address these challenges, innovative solutions are needed that can provide accurate and contextually relevant information.

Furthermore, while chatbots have been shown to improve health literacy and reduce the burden on healthcare professionals [5], their effectiveness in multilingual or linguistically diverse contexts has not been thoroughly investigated. This highlights a critical research gap in developing chatbot systems that can deliver accurate, contextually relevant, and user-friendly health information in Indonesia.

To address this gap, we propose developing an Indonesian chatbot prototype leveraging NLP technologies. The system incorporates preprocessing techniques using the Natural Language Toolkit (NLTK). It employs machine learning models such as Term Frequency-Inverse Document Frequency (TF-IDF) and Cosine Similarity for semantic understanding. By evaluating the chatbot's ability to understand and respond to user queries in various informal Indonesian dialects, this research aims to assess its effectiveness in providing accessible, accurate, and easy-to-understand health information.

This study contributes to the growing field of AI-assisted healthcare communication by addressing Indonesia's unique linguistic and cultural challenges. It provides a foundation for future developments in multilingual and culturally adaptive health chatbot systems.