

Child Prevention and Maternal Health Care Expert System

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Advanced information technology offers new ways to deliver primary health care, that is not bound to traditional primary health services delivery institutions. Technology-based self-service channels and digital health interventions have the potential to support patients with general illnesses. The number of people searching for health information on the Internet is increasing dramatically. Before visiting a doctor or midwife, People need reliable medical decision-support information systems to manage general illnesses at home. Especially in the maternal and child health field, several health issues can be managed from home with short guideline from a primary health care professional like midwives. Therefore, it is necessary to create a platform where health care clients can get health guidelines and information using advanced information technology. **Purpose:** The key objective of this study is to create a “Chatbot” to build an interaction between public health midwives and their health care clients. “Chatbots” are AI-based computer program that simulates human conversations. They are also known as digital assistants that understand human capabilities. “Chatbot” interprets the user intent, processes their requests, and gives prompt relevant answers. Due to the COVID-19 pandemic, one of the major public health challenges faced by poor nations is to provide adequate maternal and infant health care with limited resources. To address issue, this project builds a text-to-text conversational agent, that provides answers to health issues regarding maternal and child health using natural language. **Design:** To provide reasonable output to the user’s query, the system will take data from predefined health websites and articles which have information regarding maternal and child health. The “Chatbot” will be filtering this data, to respond back to the user’s query. The system remembers past responses to provide a better answer. This system and the interface is mainly developed using the PYTHON language. **Research Implications and Evaluation:** Before being given to the end-users, the final system has been given to 45 midwives who have knowledge about maternal and child health. Then they are instructed to ask 10 questions from the “Chatbot” related to maternal and infant health. Depending on the answers which is generated by the “Chatbot”, the questionnaire will be distributed to add their findings, regarding the accuracy level of the answers generated by the “Chatbot”. According to the accuracy testing, 70% of testers mentioned that the system has generated more than 80% accurate answers for user queries. **Research limitations and future research suggestions:** This system can provide answers to limited questions and it provides basic health tips. As further developments, additional languages could be trained in order to cover a wider user base, such as the Sinhala language. Users may have multiple problems that they would like to address in a single message, and it changes the formulation of the intent classification problem into a multi-label classification problem. Different methods could be considered to address this issue.

Keywords: Child Prevention and Maternal Health Care; “Chatbot”; maternal and infant health, primary health care, self-service channels.

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