UNC GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH

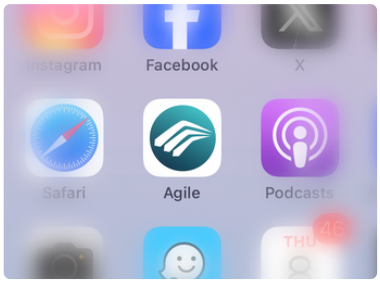
Gillings Innovation Labs
Harnessing gAI in Public Health

Revolutionizing Health Interventions

How AI-Powered Chatbots are Transforming Mobile Health Programs

Leveraging Generative AI in Mobile Health Promotion Programs: A Use Case for Enhancing Tailored Messaging and Engagement in a Mobile Healthy Weight Program

A new project funded by a Gillings Innovation Labs award aims to revolutionize health behavior interventions using generative AI. While mobile health (mHealth) programs have shown promise by delivering tailored behavior change techniques via text messages and apps, they often lack the depth of personalization and human interaction needed for maximum effectiveness. This project will leverage generative AI to enhance user engagement by engaging them in conversation and collecting contextual information that can be used to provide more informed in-the-moment behavioral support. By integrating high-tech solutions with personalized support, the project seeks to improve engagement, adherence, and health outcomes, extending the reach and efficiency of public health interventions.



Aim One: Ensure the Quality and Safety of AI-Delivered Health Messages

The first aim of the study is to ensure the quality and safety of program and health-related conversations with the AI chatbot. This involves building the infrastructure to integrate and fine-tune the LLM as a chatbot, enabling it to deliver tailored intervention messages and collect qualitative data. The chatbot will be tested to ensure it delivers accurate, helpful, reliable, and safe behavior change messages, ultimately enhancing future interventions.

Aim Two: Test the Chatbot's Effectiveness in a Weight Management Program

The second aim is to evaluate the feasibility and preliminary effects of adding a chatbot to the AGILE mobile weight management program. A proof-of-concept study will involve 20 young adults, randomly assigned to receive the existing evidence-based just-in-time adaptive intervention, called AGILE, alone or AGILE plus the chatbot for 12 weeks. The study will assess the message accuracy, safety, engagement, adherence, and weight change among participants in AGILE plus chatbot compared to AGILE alone.

Impact!

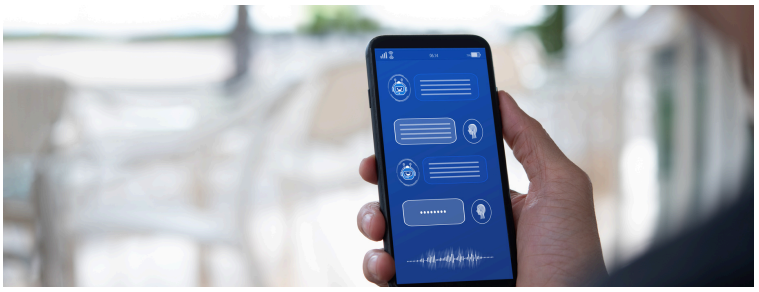
Integrating generative AI with personalized health support can revolutionize weight loss treatment and other health promotion programs for young adults. This groundbreaking project will use an AI-based chatbot to deliver tailored behavioral support messages via a chatbot in a mobile app, creating a scalable model for highly personalized interventions. This innovative approach aims to improve engagement and health outcomes locally and globally.

Goal

Develop and evaluate an AI-driven chatbot to enhance weight management for young adults, creating a scalable model for personalized health interventions and improving engagement and outcomes.

Partners

UNC CHAI Core, Amazon Web Services



Leadership

MPI: Brooke Nezami, PhD, is an assistant professor in the Department of Nutrition at UNC Gillings School of Global Public Health. Her research focuses on using technology to increase adherence and improve dietary behaviors and physical activity among young adults, adults, and families with young children. Dr. Nezami's research interests include smartphone-based interventions for weight control, improving adherence to dietary recommendations, and using technology to adapt and disseminate weight control interventions for larger reach. Together, Drs. Nezami, Tate, and Valle are working to study methods of improving message personalization and engagement in health promotion programs using just-in-time adaptive intervention (JITAI) approaches.

MPI: Deborah Tate, PhD
Deptartment of Nutrition

MPI: Carmina G Valle, PhD
Department of Nutrition

Data Scientist: Vincent Toups, PhD
Department of Biostatistics