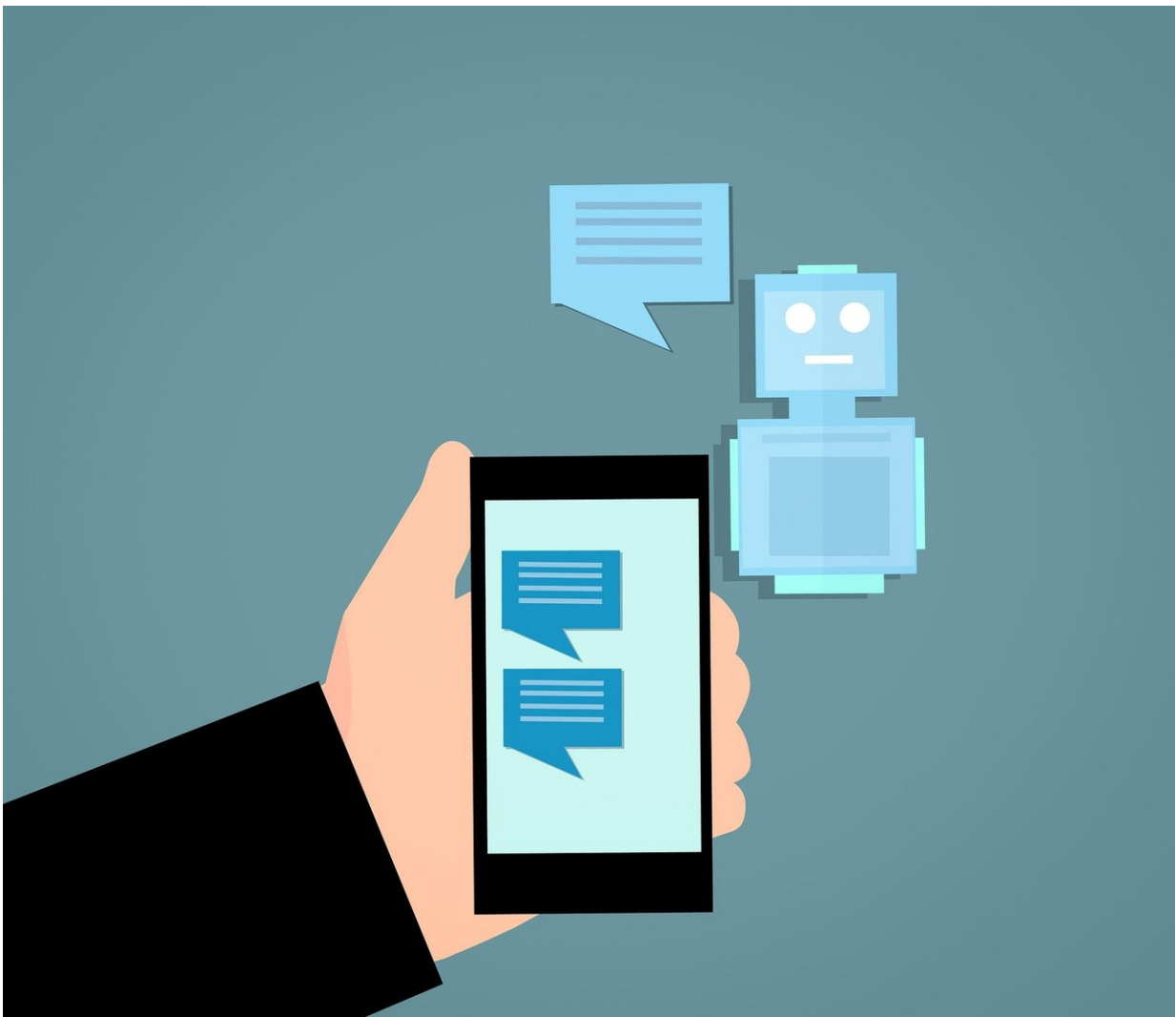


# Promising results from study on AI-based chatbot for anxiety, depression in Spanish-speaking university students

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A study conducted by researchers at Palo Alto University has shown artificial intelligence-based chatbots to be effective as a psychological intervention in Spanish speaking university students. The study took place in Argentina and showed promising evidence for the usability and acceptability of the mental health chatbot, Tess. The findings were published by *JMIR Publications*, which is dedicated to advancing digital health and open science.

The study's objective was to evaluate the viability, acceptability, and potential impact of using Tess, a [chatbot](#), for examining symptoms of depression and anxiety in Spanish speaking [university students](#). Chatbots are a novel delivery format that can expand the mental health services offerings and facilitate early access to those in need. This represents an opportunity for addressing delays associated with access to treatment for depression and anxiety.

"While research conducted in the United States has reported decreased depressive and anxiety symptoms in college students, no studies have been performed on chatbots used for addressing mental health disorders in Spanish-speaking populations," said Eduardo Bunge, Ph.D., and Director for the Children and Adolescent Psychotherapy and Technology (CAPT) Lab at Palo Alto University.

The study assesses the viability and acceptability of psychological interventions delivered through Tess to college students in Argentina for the most prevalent disorders in Argentina; anxiety (16.4%) and mood (12.3%) disorders. The average age for the onset of these conditions is 20 years. The Pan American Health Organization (PAHO) and the Argentinian Ministry of Health have highlighted the importance of optimizing [health](#) care services for individuals who are not receiving any form of psychological care.

## Results

The initial sample consisted of 181 Argentinian [college students](#) aged 18 to 33. On an average, 472 messages were exchanged, with 116 of the messages sent from the users in response to Tess. A higher number of messages exchanged with Tess was associated with positive feedback. No significant differences between the experimental and control groups were found from the baseline to week 8 for depressive and anxiety symptoms. However, significant intragroup differences demonstrated that the experimental group showed a [significant decrease](#) in anxiety symptoms; no such differences were observed for the control group. Further, no significant intragroup differences were found for [depressive symptoms](#).

## Conclusions

The students spent a considerable amount of time exchanging messages with Tess and positive feedback was associated with a higher number of messages exchanged. The initial results show promising evidence for the usability and acceptability of Tess in the Argentinian population. Research on chatbots is still in its initial stages and further research is needed.

**More information:** Maria Carolina Klos et al, Artificial Intelligence-Based Chatbot for Anxiety and Depression in University Students: Pilot Randomized Controlled Trial, *JMIR Formative Research* (2021). [DOI: 10.2196/20678](#)

Provided by Palo Alto University

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