Abstract:

Despite Native American communities having high rates of childhood suicide and psychiatric disorders in comparison to the rest of America, they face a deficiency in behavioral and mental health treatment opportunities. For this reason, the NAU CANIS Lab has been developing ARORA, a behavioral health application designed to help Native American youths develop emotional resilience and healthy coping skills for stress and general mental illness. In order to ensure that the features within ARORA can be successful among its users, I have conducted a literary analysis of previous studies on Human-Computer Interaction (HCI) regarding behavioral health and analyzed the data found in our focus groups. We have found from the results of our focus groups that several of the activities in ARORA are effective in reducing stress and anxiety among its users. Several members of our focus groups have also expressed that the app should be more centered around Native American culture, as it currently does not appear to be directed towards their demographic. These participants gave many suggestions for how their culture could be integrated into ARORA.

Methods:

In order to design ARORA, our team used a community participatory design.

This entailed creating a community advisory board, consisting of members of the Native American community. The community advisory board gave our team insight and advice on how to successfully create a mHealth app for Native American adolescents. Another approach we used for this project is grounded theory, which entails developing a theory based on evidence and data obtained from comparative analysis.

ARORA, our mobile application was developed in Android Studio. Its effectiveness was measured through several user testing studies, in which Native American adolescents would practice using the app and give their feedback. During these testing sessions, we recorded facilitated discussions in which participants explained whether or not they thought the app was effective and gave suggestions for improvements. The recordings from these sessions were then transcribed and analyzed through NVIVO.

We also conducted a literary analysis, in which previous research projects regarding behavioral health mHealth applications for adolescents and young adults were analyzed.

Results:

Upon the completion of our focus groups, we found that behavioral health mHealth apps are most effective in reducing stress and anxiety in Native American youth when they distract their users from the "real world." For example, the more immersive activities within ARORA, such as the walking activity, were the most relaxing in that they helped participants take their minds off of everything else. Participants found the walking activity especially helpful in that it provided consistent and constant audio, which helped immerse them into the activity. They also found that, because this activity prompted them to exercise and constantly think about the environment around them, they were better able to focus on the activity.

Those who participated in these focus groups also provided suggestions for how the app can better help Native American youth coping with stress and behavioral health issues. For example, many participants suggested integrating relaxing music into the app, which would play while they are doing each of the activities or looking at selection screens. Many participants also suggested integrating more Native American themes and features into ARORA, in order to make it better suited for Native American youth. For example, the incorporation of constellations into the design and activities of the app was suggested several times.