

Mobile gaming app enhances HIV care

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Researchers at the University of North Carolina at Chapel Hill and Duke University improved HIV care by gamifying it with a mobile gaming application.

Gaming features—like those used to drive airline loyalty and track daily

steps — helped young men living with HIV achieve viral suppression and doubled their chances for reaching near perfect adherence to medication plans, according to a study in *AIDS and Behavior*.

Gamification can inspire changes in behavior when a doctor's advice or a patient's good intentions are not enough. In this case, motivating those living with HIV to stick to the antiretroviral therapy (ART) that can keep them healthy by suppressing the HIV virus.

Study authors include Lisa Hightow-Weidman and Kate Muessig, [health](#) behavior specialists at the UNC Gillings School of Global Public Health, Alyssa Vecchio of the UNC Institute for Global Health and Infectious Diseases, and Alyssa Platt and Joseph R. Egger of the Duke Global Health Institute.

"The app delivered daily health messages in a digestible form that was more fun than sitting in a class and more consistent than a clinic visit scheduled every three to six months," said lead study author Hightow-Weidman, professor of medicine and health behavior and mHealth researcher who directs the UNC Behavior and Technology Lab in the UNC School of Medicine.

Gamifying health promotion

Researchers teamed up with the web application development company Cactus Group to create a mobile phone app that could help patients to better adhere to HIV medication plans.

Specifically, the app was designed with the goal of improving medication adherence among young men who have sex with men who are living with HIV. It's the population most affected by HIV in the United States.

The app made use of game mechanics and social networking features to improve adherence to HIV medications. In addition to medication reminders and adherence tracking, Epic Allies used gaming elements to create a compelling and engaging experience that could motivate and support behavior change.

Gamers were awarded points and badges for their own successes and providing support and encouragement to others.

Rates of viral suppression and ART adherence increased over the course of the study among its 146 participants, even among those who were randomized to receive the control app—weekly text-based information about adherence.

At 26 weeks, viral suppression among app users was 62.9% while viral suppression in the control group was 73.5%. When use of the Epic Allies app, which is no longer available, ended, viral suppression leveled out to about 64% for all study participants, who were ages 16-24.

Notably, the app appeared to provide a head start to controlling the HIV virus. Participants who used the app regularly—four or more days a week—had a reported 56% higher likelihood of achieving [viral suppression](#) at 13 weeks compared to those who didn't use the app. Regular app users were more than twice as likely to report near perfect ART adherence at both 13 weeks and 26 weeks compared to non-app users.

Digital bridges to care

Study limitations include the [small sample size](#) and authors write that issues with app use metrics limit the ability to say that the app was effective in causing behavior changes that improved health.

But Hightow-Weidman said technology is emerging to support high-risk patients who may have life circumstances—homelessness, mental health issues, substance abuse issues—that may make it harder for them to focus on the long term. For young people, it can be especially difficult to connect today's decisions to future health, she said.

And as telehealth and virtual visits gained momentum during COVID-19 shutdowns, lessons were learned about providing needed care for everyone.

"Apps and digital tools are a bridge to care," she said. "They cannot replace a network of doctors and nurses and care management, but they can be a bridge to that real world and inspire change."

The project was supported by a grant from the National Institutes of Health.

More information: Lisa Hightow-Weidman et al, Epic Allies: A Gamified Mobile App to Improve Engagement in HIV Care and Antiretroviral Adherence among Young Men Who have Sex with Men, *AIDS and Behavior* (2021). [DOI: 10.1007/s10461-021-03222-y](https://doi.org/10.1007/s10461-021-03222-y)

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