

"YES, I'M READY, AND I'M TAKING THEM!"

HIV-infected young men who have sex with men and transgender women evaluate the Epic Allies gamified smartphone app for improving antiretroviral uptake and adherence

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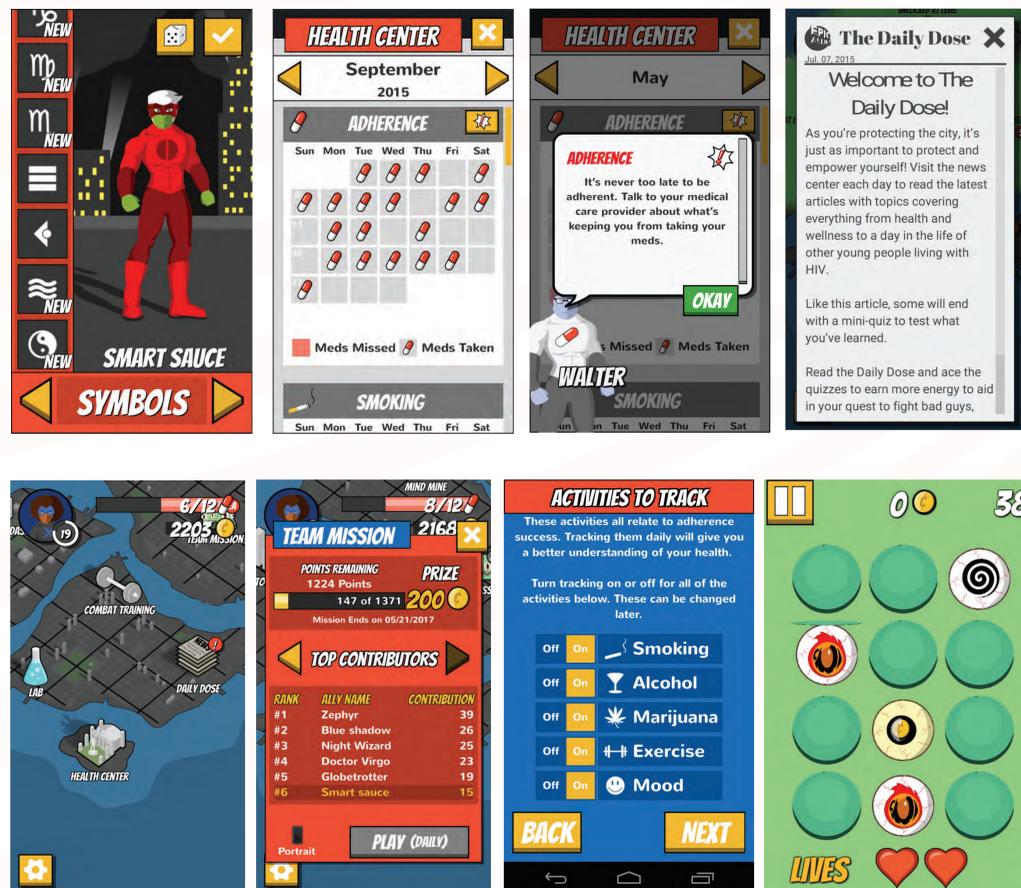
BACKGROUND

Young men who have sex with men and transwomen who have sex with men (YMSM/TW) have suboptimal antiretroviral therapy (ART) use and viral load (VL) suppression. We designed the Epic Allies theory-based smartphone application (app) to improve ART uptake and adherence.

METHODS

A five-site (Tampa, Chicago, Bronx, New Orleans, Raleigh-Durham) randomized controlled trial began in October 2015 enrolling new-to-care and ART non-adherent HIV-positive YMSM/TW ages 16 to 24. Participants were randomized to Epic Allies or weekly text messages. Main study outcomes (baseline, weeks 13, 26 and 39) include VL and self-reported adherence. We report on qualitative interviews conducted at week 26 evaluating app acceptability and behavioral impact.

APP SCREENSHOTS



RESULTS

Twenty-two interviewees (mean age 22.1, 21 black/African American) used the app on average 2 to 4 times per week and 21/26 (80.8%) would recommend it to others. All participants not on ART at baseline (n=10) started ART during the study. Participants reported the social support feature of the app motivated them to take ART consistently (75%) and provided precise information needed about ART (75%). More than half of participants would be willing to pay for the app. Participants described how daily app use modeled and encouraged daily ART use and made them feel supported by others living with HIV. The health dashboard enabled participants to see patterns in missed doses and tracked behaviors (e.g. marijuana, alcohol, mood). The app's superhero theme resonated well; mini-games and medication alarms were rated highly and encouraged regular use. Security features (password, discrete app icon), were described as promoting regular use. See "Top 10 app recommendations".

QUOTES

Engagement

"You know how every time you got a streak you got an award or something? I always wanted to get the reward to make my level go higher. So, I guess that made me take my medicine too."

"The games and rewards and all that made it a lot easier to use the app. Had it just been the medication reminders I could say it would have been boring and I might not have used it. So having the games gave it just that slight entertainment factor that made me able to use it."

Encouragement

"[The app] indirectly showed that it wanted me to stay healthy...it made me feel good about things that normally would make me feel really bad. It got my mind off of the negative side effects and more on like the positive future."

"I know sometimes, me personally when I was dealing with finding out my condition, I was very, very negative about it...With that [app] though it made it a little easier to think about."

Motivation

"It pretty much asked me where are you on a scale of readiness to take medication...it made me feel good once I did start taking medication, and I was able to click, 'yes, I'm ready, and I'm taking them,' and then to start tracking it."

Self-Reflection

"I just went back and looked over... to see if there was like a pattern, or to see if I was slowing down on my cigarette usage, drinking usage, make sure I'm on top of my medication, what days I missed."

Reminders

"[The app] actually worked perfectly, because like, it actually notified me...it helped me remember to take my meds, because I set a schedule up, like, you know, with the timer...it's fun, but actually helpful."

Social Support

"Made me feel like everybody else [is] with me, even though I'm not really interacting with them, and it just gave me a bit more confidence that everything would be fine...in a way it is somewhat of a support system."

CONCLUSION

Epic Allies shows high acceptability for increasing ART uptake and adherence. App tailoring and gamification created a positive, patient-centered experience that may foster sustained intervention engagement while meeting informational ART needs.

Table 1: Baseline survey demographics of 26 HIV-positive YMSM

	Interviewees (n=26)
Age, mean (range)	22.08 (19-24)
Current gender identity	
Male or Man	25
Trans female, trans woman, or male-to-female	1
How do you identify?	
Gay	18
Bisexual	6
Questioning	1
Other	1
Hispanic or Latino heritage	6
Race/ethnicity*	
American Indian	1
Asian	1
Black or African American	21
White	3
Multiple race/ethnicities selected	2
Rather not answer	2
Current relationship status	
Not in a relationship	15
Committed relationship with a man	10
Committed relationship with a woman	1
Education (highest level completed)	
Eighth grade or less	1
More than eighth grade, less than high school	6
High school graduate	2
Some college/technical education	12
College/technical school graduate	5
Currently employed	15
Any app use to manage health, past month	7
Any interruption in mobile phone service, past month	7

* Total exceeds 26 as participants could select more than one race/ethnicity

Table 3: App Usage and Acceptability

	Week 13 (n=26)	Week 26 (n=26)
Days per week using app		
0 - 4 days	13	12
5 - 7 days	13	14
Hours per week using app		
≤ 1 hour	16	21
> 1 hour	10	5
Willing to pay for app?	7	-
Evaluation of the app (n=26)	Agree/Strongly %	
Information content met my needs	73.1	
Learned something new by using Epic Allies	84.6	
Would share information I learned from the app	76.0	
App was easy to use	88.5	
App was visually appealing	76.9	
Mini games were fun	73.1	
Likely to use app in the future	80.8	
Would recommend the app to someone else	80.8	
Asked of those on meds at 3 months	N=24	
App provided precise information I needed about ART adherence	75.0	
App helped motivate me to take my meds every day as prescribed	66.7	
Ally feature improved my motivation to take my meds	75.0	
Asked of those reporting not on meds at baseline	N=10	
App provided the precise information I needed about getting on ART	62.5	
App helped motivate me to get on HIV meds	50.0	
Ally feature improved my motivation to get on meds	33.3	

Table 2: HIV Treatment and Care Outcomes

	Baseline (n=26)	Week 13 (n=26)	Week 26 (n=26)
HIV visits missed, past 3 months	0.50 (0-2)	0.46 (0-2)	0.50 (0-2)
Currently on ART	16	24	26
ART doses missed, past week	1.81 (0-7)	1.00 (0-5)	1.35 (0-7)
Last VL undetectable	6	9	17

TOP 10 APP RECOMENDATIONS

1. More different types of mini-games
2. More levels to unlock
3. Increase the ability to connect with other users (e.g. via chat wall, personalized messages)
4. Increase the number of knowledge quizzes after Daily Dose articles
5. More personalization features (e.g. ability to change or select app theme)
6. Add archive for Daily Dose knowledge articles
7. Add ability to create different types of alarms, reminders & notifications
8. Increase the number of badges & medals you can earn and make them harder to get
9. Ability to edit HIV medication adherence history data
10. Improve app graphics and add music

