It will remind me to take my doses on time: Views of participating in an antiretroviral therapy adherence intervention in China

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Abstract #144

Background

- China has Asia’s second largest HIV epidemic, with an estimated 780,000 individuals infected; new infections are still increasing.
- As of July 2013, nearly 200,000 individuals in China were on antiretroviral therapy (ART).
- Drug resistance is an emerging problem, yet few rigorous studies have been conducted on ART adherence in China.
- Like HIV-positive individuals elsewhere, Chinese patients need interventions to support better adherence to ART medications.

The China Adherence through Technology Study (CATS)

- The China Adherence through Technology Study (CATS) assessed the effect of an ART adherence intervention in southern China.
- The 6-month intervention trial provided 120 subjects with web-linked medication containers that monitor adherence in real time using cell phone technology (see Figure 1).
- These devices facilitated a ‘real-time feedback’ intervention that encompassed triggered SMS reminders to subjects’ cell phones when doses were not taken on time, supplemented by supportive counseling using patients’ own adherence data (generated by the medication containers) when monitoring indicated sub-optimal adherence (<95%) during the previous month.
- Given the novelty of the intervention, the study incorporated a qualitative component to explore subjects’ experiences during the trial.

Methods

CATS Study Site

- CATS was conducted from December 2012 to April 2014 at the ART Clinic of the Guangxi Provincial Centers for Disease Control and Prevention, in Nanning, a city of 7 million people and numerous ethnic minorities in southern China (Figures 2,3).
- Like many neighboring regions in Southeast Asia, Guangxi has been hard-hit by HIV, largely driven by high rates of heroin use.
- CATS subjects were on or starting ART, aged 18 years or above, owned a mobile phone, and deemed at risk for poor adherence by clinicians or themselves.

Data Collection

- Intervention arm subjects were selected purposefully for participation in in-depth interviews (IDIs) at their sixth and final intervention-period clinic visit.
- IDIs were conducted in Mandarin Chinese using a semi-structured guide, with questions covering views and experiences regarding device use, the triggered SMS reminders, and data-informed counseling.

Data Analysis

- IDIs were audio-recorded, transcribed, and translated into English.
- Transcripts were coded in NVivo software. Perceptions were clustered by component of the intervention: device use, SMS reminders, and counseling.

Results

Study Participants

- 20 CATS intervention subjects participated.
- Two-thirds (13/20) of participants were male; the mean age was 32.3 years.
- Most (18/20) had completed middle school; the majority (17/20) were single.

Use of the EDM Container

- Nearly all participants made positive statements about the container, noting at least one specific benefit, including: using the device improved their dose-taking habits.
- About one-third said they liked being watched/monitored, or that being watched helped them be more adherent.
- The majority noted challenges keeping the container secret due to fear of inadvertent disclosure of their HIV status.

The advantage is that it reminds you to take your medication on time. (#021)

The good thing is that it will remind you to take your doses on time. (#106)

I’d avoid them when it’s time. I’d go to the bathroom to take it … It’s impossible to take it in front of people. (#096)

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Triggered Reminders

- All participants said that they liked the triggered SMS reminders, describing them as “discreet,” “helpful,” and “accurate.”
- For patients like me, this real time reminder reminds me to take my medicine on time and not to miss any. (#113)
- Actually, I have received several text message reminders this month. I forgot and after about half an hour, there would be text messages. It is very helpful. (#059)
- I was not in my bedroom...Later on, the cellphone I carried received the SMS reminder and I remembered that I forgot to take my pills. (#005)

Counseling

- All participants made positive comments about the counseling provided by study clinicians.
- Nearly all said they understood and liked using the container-generated adherence reports.
- It strengthens my compliance. Here it is 98%, but it would be better to be 100%. (#025)
- You get to know about your compliance and then you’ll remind yourself to take the medicine on time. (#106)

Conclusions

- ART patients in southern China were positive about participating in an adherence intervention trial that made use of real-time monitoring technology to deliver triggered reminders and data-informed counseling.
- Real-time feedback appears promising for treatment of HIV and other chronic illnesses.

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