



# Feasibility of using a mobile application to collect data on pre-exposure prophylaxis adherence and sexual behaviour among men who have sex with men

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## Background

Pre-exposure prophylaxis (PrEP) is an effective way to prevent HIV infection in men who have sex with men (MSM) but adherence is crucial. Data on adherence and sexual behaviour can be collected daily using a mobile application (app) and may be of higher quality than data collected by self-administrated questionnaires.

## Objectives

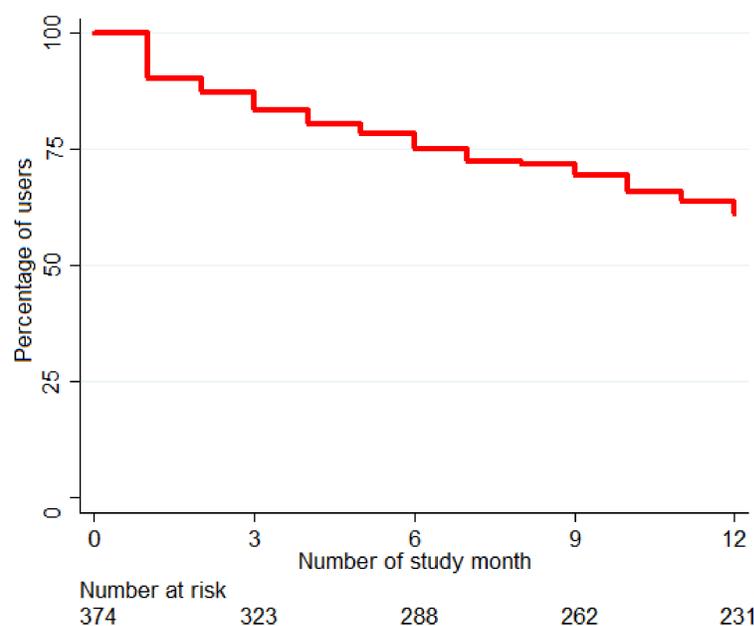
- (1) investigate the use of the app of AMPrEP over time
- (2) assess characteristics of consistent app users
- (3) evaluate differences between data gathered by app and by questionnaire on adherence and sexual behaviour

## Conclusions

- The app of AMPrEP was used frequently by the majority of study participants.
- App use decreased slightly over the first twelve study months.
- Questionnaire and app data regarding adherence and sexual behaviour were similar.
- Consistent app users were more often employed, more often had a middle- or high income and more often had chosen a daily PrEP regimen.
- The AMPrEP app seems a feasible tool to measure PrEP adherence and sexual behaviour.

## Results

374 MSM were enrolled. 89.8% (n=336) used the app at least once, but use decreased slightly over the first twelve study months. 28.1% of participants (n=105) at some point did not use the app for a period of at least 30 days.



- In the daily PrEP group, PrEP adherence by app data and questionnaire data was similar: the median of the monthly number of pills was 30 pills at three, six and nine months.
- Among event-driven PrEP users, the median number of pills reported by app data was slightly lower (medians between 12 and 13) as compared to the questionnaire data (medians between 13 and 18). However, these differences were not statistically significant.
- The number of unknown casual partners reported by daily PrEP users was similar by app data and questionnaire data. The median number of casual partners was between 9 and 10 in app data and the median number of unknown casual partners was 10 in questionnaire data.
- For event-driven PrEP users, the number of unknown casual partners reported was similar by app data and questionnaire data. The median number of unknown casual partners was between 4 and 6 in app data and between 4 and 7 in questionnaire data.

**Table 1.** Characteristics associated with being a consistent app user versus an inconsistent app user among MSM participating in AMPrEP, Amsterdam 2015-7

Variables	PR	95% CI	aPR	95% CI
Daily PrEP				
Event-driven PrEP	0.60	0.47, 0.77	0.62	0.48, 0.79
Unemployed				
Employed	1.40	1.02, 1.93		
Student	1.43	0.95, 2.14		
Low income				
Middle income	1.29	1.03, 1.61		
High income	1.28	1.01, 1.63		

PR = prevalence ratio  
 Only participants who completed the first six study months are included in this analysis (N=363)  
 Consistent app users are participants who reported data in the app  $\geq 90\%$  of the days each month the first six study months

## Methods

Data from MSM participating in an existing open-label PrEP demonstration project (AMPrEP) were used. Men chose between a daily and an event-driven PrEP regimen. Data on sexual behaviour and PrEP adherence were collected through three-monthly questionnaires and via the project's app allowing daily data entry. Negative binomial regression was used to assess characteristics of consistent users. Data on adherence and sexual behaviour as reported in app and questionnaire were compared by paired t-test.



**Figure 1.** Interface of the AMPrEP app