

# Mobile health (mHealth) interventions to support self-management in HIV: a systematic review

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# Background

- Mobile technologies offer the potential to efficiently deliver interventions to facilitate HIV self-management
- The last comprehensive review of HIV mHealth interventions was conducted in 2011 [1]
- This study aimed to describe and evaluate current evidence-based mHealth interventions to support self-management in HIV

## Method

- Databases (Medline, Scopus, Embase, PsycINFO, Cochrane, Global Health CAB, IEEE explore, Web of Science) and reference lists searched
- Search terms (mHealth OR mobile phone\* OR handheld device\* OR cellular phone\* or mobile device\* OR handheld computer\* OR iPAD\* OR android tablet\* or smart device\* OR smart phone\*) AND (HIV or Human Immunodeficiency Virus)

**Study characteristics** 

Feasibility

- Searches limited to January 2012 onwards
- Data on intervention content and evaluation methodology extracted and appraised by two researchers

#### **Inclusion criteria**

- Systematic investigation of mHealth intervention
- mHealth intervention is HIV-focused
- Study design and methods described
- Feasibility, acceptability, patient reported outcomes, adherence and/or cost effectiveness reported

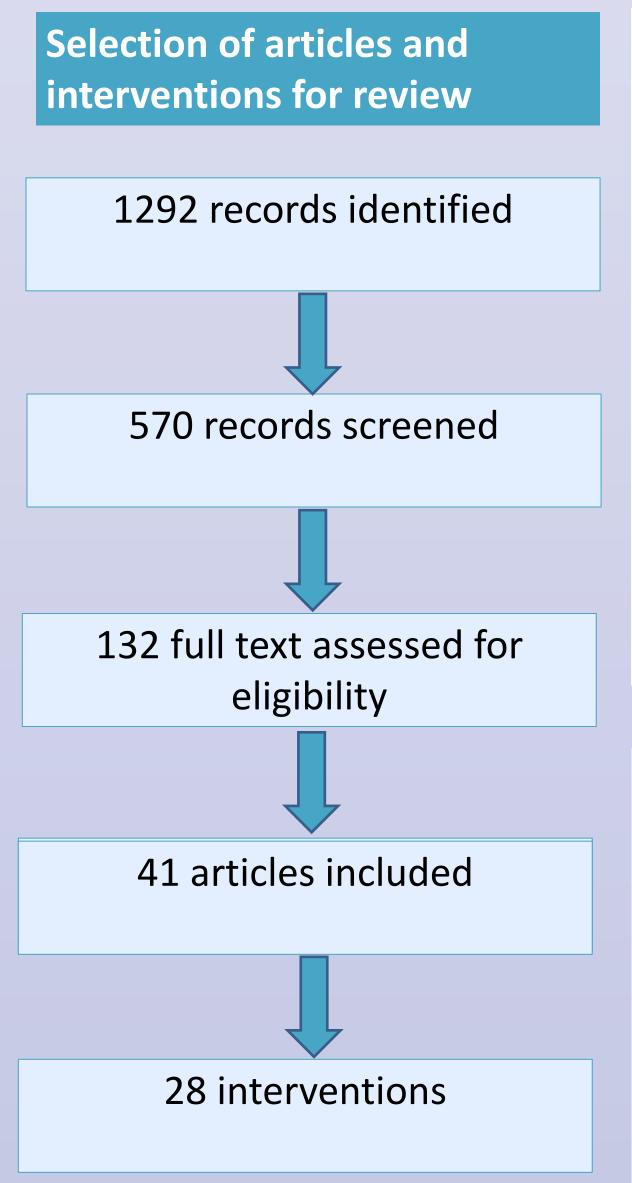
#### **Exclusion criteria**

- mHealth is focused on prevention of HIV
- mHealth is focused on HIV testing
- mHealth was developed for children
- mHealth was developed for healthcare workers

## Results

n (%)

9 (32)



Evaluative	19 (68)
Intervention	n (%)
User involvement	14 (50)
Personalisation	20 (71)
Incentive	14 (50)
Focus of intervention	n (%)
Single focus	20 (71)
-Improving adherence	16 (57)
-Increasing engagement	3 (11)
	3 (11) 1 (4)

Functions included	
Medication reminder	57%
Behaviour monitoring	46%
Patient-provider communication	36%
Personalised feedback	29%
Appointment reminders	21%
Motivational messages	14%
Laboratory reports	11%
Medication log	7%
Mood monitoring	4%
Health monitoring	4%
Medication review	4%
Signposting to resources	4%
Peer education	4%
Smoking cessation monitor	4%

Mode of delivery	
SMS only	57%
Арр	18%
Phone calls	11%
nteractive voice response (IVR)	4%
SMS + IVR	4%
Video	4%
Choice of delivery modes	4%

7%	Functions	n (%)
	1	8 (29)
	2	6 (21)
	3	8 (29)
	4	4 (14)
	5	1 (4)
	6	1 (4)

Adherence to ART
Viral load
Care engagement
HIV knowledge
Smoking cessation
Quality of life
Depression/ anxiety

Significant impact on:

Self efficacy

# Conclusions

- In contrast to earlier reviews [1] the majority of studies were evaluative rather than feasibility studies suggesting progress in the development and evaluation of mHealth interventions
- Interventions impacted a range of outcomes however no studies evaluated cost-effectiveness. This may be necessary to convince healthcare providers of the value of wide scale implementation
- Most interventions contained only a small number of limited functions (e.g. medication reminders) failing to encompass many of the mHealth functions identified as desirable by people living with HIV (PLWH) [2]
- There is a need to develop, implement and evaluate more comprehensive mHealth interventions to address self-management needs of PLWH

# References

- 1. Catalani C. et al. mHealth for HIV treatment and prevention: a systematic review of the literature. Open AIDS Journal 2013; 7: 17-41
- 2. Schnall R. et al. Comparison of a user-centred design, self-management app to existing mHealth apps for persons living with HIV JMIR Mhealth Uhealth 2015; 3 (3)
- 3. Cooper V, Clatworthy J, Whetham J mHealth interventions to support self-management in HIV: A systematic review. The Open AIDS Journal, 2017, 11.

