Smartphone Intervention to Reduce Heavy Drinking in HIV Care: Effect on ART Adherence

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BACKGROUND

Heavy drinking among People Living With HIV (PLWH) reduces ART adherence and worsens health outcomes. Brief interventions to reduce heavy drinking in primary care patients are effective, but in PLWH with alcohol dependence, more extensive intervention are needed. Lengthy interventions are not feasible in most HIV primary care settings, and patients seldom follow referrals to outside treatment. HeatlhCall was developed to harness the visual and video capacities of smartphone technology (**Fig 1**) to extend the benefits of brief intervention to reduce drinking and improve ART adherence in PLWH.

FIG 1. EXAMPLES OF HEALTHCALL INTERACTIVE SCREENS



METHODS

- Alcohol-dependent patients at a large urban HIV clinic were randomized to receive 1 of 2 brief (~25 min) baseline drinking-reduction interventions: NIAAA Clinician Guide (CG) or Motivational Interviewing (MI) plus ART adherence (**Fig 2**), and HealthCall (daily use on the smartphone, ~5 min/day) or standard of care (SoC) for 60 days (**Fig 3**).
- HealthCall addresses drinking and ART adherence.
- Patients had 15-min check-in sessions at 30 & 60 days.
- Primary outcomes assessed at 30-, 60-days, 3, 6 & 12 months: drinks per drinking day; ART adherence (unannounced phone pill-count method; possible adherence scores: 0%-100%).
- Statistical analysis: generalized linear mixed models with pre-planned contrasts.

HealthCall, a smartphone app, enhanced the effects of brief intervention to reduce drinking and improve ART adherence among alcohol-dependent patients in HIV care.

Fig 2. Interventions at baseline

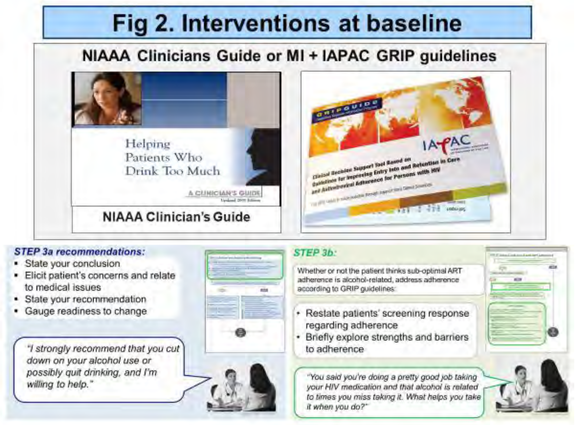
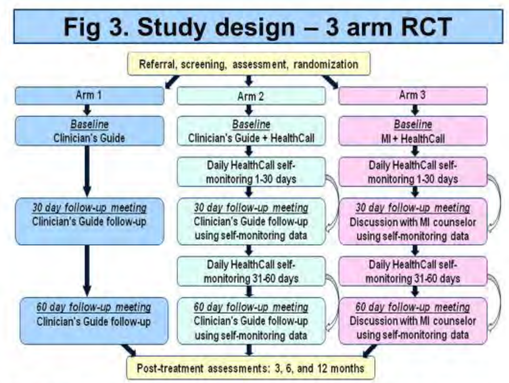


Fig 3. Study design – 3 arm RCT

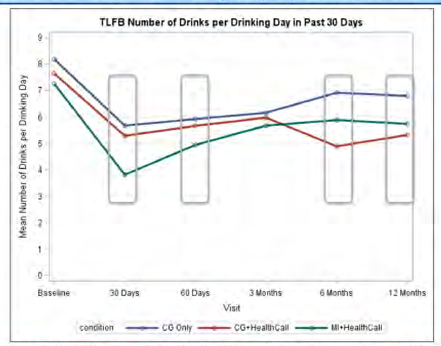


HealthCall, 30- and 60- day meetings covered drinking *and* ART adherence

RESULTS

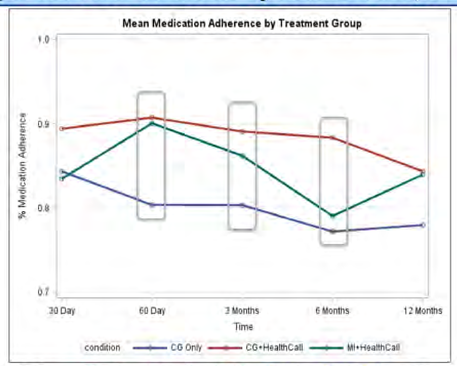
- Patients were randomly assigned to CG+SoC (n=37), CG+HealthCall (n=38) or MI+HealthCall (n=39).
- Participants: 58% male, 28% Hispanic, 75% black, no differences by treatment arm.
- Study retention excellent (85%-94%), unrelated to treatment arm or patient characteristics.
- Drinking decreased overall during treatment, continued to decline at follow-up in CG+HealthCall arm.
- During treatment, patients in MI+HealthCall drank less than others (p=0.07-0.003). At 6 & 12 months, drinking was lower among patients in CG+HealthCall (p=0.04-0.06) (**Fig 4**).
- Overall ART adherence declined slightly by 12 months; at 60-days, 3 & 6 months, ART adherence was significantly better among patients in CG+HealthCall than CG+SoC (p=0.03-0.09) (**Fig 5**).

Fig 4. Mean drinks per drinking day by treatment arm, N=114



30 days: MI+HealthCall vs Clinicians Guide+HealthCall, p<.004 MI+HealthCall vs Clinicians Guide, p<.003
60 days: MI+HealthCall vs Clinicians Guide Only, p=.07
6 months: Clinicians Guide+HealthCall vs Clinicians Guide Only, p=.06
12 months: Clinicians Guide+HealthCall vs Clinicians Guide Only, p=.04

Fig 5. Mean ART adherence by treatment arm, N=105



60 days: Clinicians Guide+HealthCall vs Clinicians Guide Only, p=.048
MI+HealthCall vs Clinicians Guide Only, p=.065
3 months: Clinicians Guide+HealthCall vs Clinicians Guide Only, p=.09
6 months: Clinicians Guide+HealthCall vs Clinicians Guide Only p=.03

CONCLUSIONS

- HealthCall paired with MI resulted in less drinking during treatment than other treatment conditions.
- HealthCall paired with CG resulted in less drinking after treatment than the other treatment conditions.
- HealthCall paired with CG resulted in better ART adherence than the other treatment conditions.
- Given the importance of ART adherence and the low costs & time needed for HealthCall, pairing HealthCall with brief interventions in HIV primary care settings merits widespread consideration.