



Drinking motives and alcohol intervention for patients with HIV

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BACKGROUND

- For individuals with HIV, heavy drinking can interfere with medication adherence and impair liver function. Yet, many with HIV drink heavily.
- A recent clinical trial [1] indicated that a motivational interviewing intervention (MI) with a technological enhancement (HealthCall) was effective at reducing drinking in HIV patients.
 - It remains unclear whether MI+HealthCall or other interventions also affect patients' attitudes toward drinking, including their drinking motives
- Using the same sample, Elliott et al. [2, 3] showed that patients' drinking motives at baseline were associated with past-year and end-of-treatment (60-days post-baseline) drinking.
 - Whether drinking motives also predict long-term drinking patterns (e.g., drinking a full year later) remains unclear

AIMS

- The aims of the current study were to investigate:
 - Whether motivational interventions decrease patients' motives to drink
 - Whether baseline drinking motives continue to predict drinking at end-of-study (i.e., 12-months post-baseline)

METHODS

Sample: 254 HIV-infected patients with past-month heavy drinking, participating in a clinical trial of brief alcohol interventions [1]

- 78% male
- 94.5% minority (African American or Hispanic)



Intervention conditions:

- DVD educational control
- Motivational Interviewing (MI) only
- MI + HealthCall (electronic self-monitoring + feedback discussed w/counselor)

Measures (baseline, end-of-treatment, end-of-study)

- Drinking motives (Reasons for Drinking Scale)
 - Drinking to cope with negative affect
 - Drinking for social facilitation
 - Drinking due to social pressure
- Alcohol consumption (Timeline FollowBack)
- Alcohol dependence symptoms (AUDADIS)



Analysis Plan

- Generalized linear models
- Specification of outcome distribution (normal, negative binomial, Poisson)
- Use of control covariates specified in Tables 1 & 2

| | Baseline | 60 days | 12 months |
|--------------|----------|---------|-----------|
| Assessment | x | x | x |
| Intervention | x | x | |

REFERENCES

- Hasin DS, Aharonovich E, O'Leary A, Greenstein E, Pavlicova M, Arunajadai S, Waxman R, Wainberg M, Helzer J, Johnston B. Reducing heavy drinking in HIV primary care: a randomized trial of brief intervention, with and without technological enhancement. *Addiction*. 2013 Jul;108(7):1230-40.
- Elliott JC, Aharonovich E, O'Leary A, Wainberg M, Hasin DS. Drinking motives among HIV primary care patients. *AIDS Behav*. 2014 Jul;18(7):1315-23.
- Elliott JC, Aharonovich E, O'Leary A, Wainberg M, Hasin DS. Drinking motives as prospective predictors of outcome in an intervention trial with heavily drinking HIV patients. *Drug Alcohol Depend*. 2014 Jan 1;134:290-5.

RESULTS

- The intervention conditions evidenced few differences in drinking motives at 60 days (MI+HealthCall evidenced higher drinking due to social pressure, $p<0.05$), and no differences at 12 months (Table 1).

Table 1. Patients' drinking motives at end-of-treatment and end-of-study, by intervention condition.

| | End-of-treatment (60 days) | | | | End-of-study (12 months) | | | |
|---------------------------------------|------------------------------|------------------------------|--------------------|--|--------------------------|----------------|---------------|--------------------------------|
| | DVD | MI | MI+HealthCall | Sig | DVD | MI | MI+HealthCall | Sig |
| Drinking to cope with negative affect | 2.51 (1.05) | 2.67 (1.10) | 2.74 (1.10) | $\chi^2(2)=1.72$, $p=0.42$ | 2.03 (0.84) | 2.25 (0.98) | 2.27 (1.02) | $\chi^2(2)=3.46$, $p=0.18$ |
| Drinking for social facilitation | 3.04 (1.13) | 2.85 (1.03) | 3.05 (1.10) | $\chi^2(2)=0.60$, $p=0.74$ | 2.66 (1.11) | 2.45 (1.12) | 2.78 (1.14) | $\chi^2(2)=3.93$, $p=0.14$ |
| Drinking due to social pressure | 1.70 (0.81) | 1.86 (0.84) | 2.04 (1.00) | $\chi^2(2)=6.78$, $p<0.05$ | 1.52 (0.54) | 1.46 (0.53) | 1.63 (0.79) | $\chi^2(2)=2.91$, $p=0.23$ |

Note. Bolded differences are significant. Motives scores indicate: 1 = Disagree Strongly; 2 = Disagree Somewhat; 3 = Not Sure; 4 = Agree Somewhat; 5 = Agree Strongly. Models control for age, sex, race, education, language of study completion, HIV medication status, and years since HIV diagnosis.

- Baseline motives predicted alcohol consumption and dependence symptoms at end-of-study (drinking to cope with negative affect associated with more past-month drinks and dependence symptoms, drinking due to social pressure with fewer drinks) (Table 2).

Table 2. Predictive models: Baseline reasons for drinking & 12 month drinking, dependence symptoms.

| Outcome | Reason for drinking | Incidence Risk Ratio (95% Confidence Interval) | P-value |
|--|---------------------------------------|--|-------------------|
| Total number of drinks at 12 months | | | |
| | Drinking to cope with negative affect | 1.23 (1.03, 1.48) | 0.03 |
| | Drinking for social facilitation | 1.05 (0.88, 1.24) | 0.58 |
| | Drinking due to social pressure | 0.60 (0.49, 0.73) | <0.0001 |
| Alcohol dependence symptoms at 12 months | | | |
| | Drinking to cope with negative affect | 2.13 (1.13, 4.01) | 0.02 |
| | Drinking for social facilitation | 0.86 (0.52, 1.43) | 0.57 |
| | Drinking due to social pressure | 0.99 (0.57, 1.74) | 0.98 |

Note. Bolded values are significant. Models control for intervention condition, baseline total drinks or dependence symptoms, age, sex, race, education, language of study completion, HIV medication status, and years since HIV diagnosis.

CONCLUSIONS

- MI+HealthCall reduces drinking but does not generally affect reasons for drinking
 - The exception: individuals in MI+HealthCall were more likely to transition to drinking due to social pressure at end-of-treatment, an indicator of lower-risk drinking [2].
- Drinking to cope with negative affect was predictive of alcohol consumption and dependence symptoms one year later, suggesting that individuals who drink for this motive are most at risk for prolonged and problematic drinking.
- Drinking due to social pressure remained a predictor of lower levels of drinking one year later.
- In sum, drinking motives are robust predictors of drinking, but current interventions have little impact on patients' drinking motives.
 - Further research to tailor interventions to address drinking motives may be beneficial.

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