



Screening and brief interventions for hazardous and harmful alcohol use among patients with active tuberculosis attending primary public care clinics in South Africa: results from a cluster randomized controlled trial

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Introduction

- Increasing emphasis has been placed on the detection and treatment of hazardous and harmful drinking disorders, particularly among patients who are seen in primary health care settings
- There are no studies on screening for alcohol misuse and brief interventions (SBI) amongst individuals with TB
- The aim of this study was to conduct a cluster randomized control trial to assess the effectiveness of SBI for alcohol use disorders among TB patients in public primary care clinics

Introduction

- Consenting patients who started TB treatment and screened for risky consumption of alcohol using a standardized tool were randomized, with the public primary care clinic being the unit of randomization into one of two arms:
- The first arm being a Brief Intervention for alcohol misuse arm (treatment arm) and the second arm being the treatment as usual in addition to receiving an alcohol education leaflet (control arm).

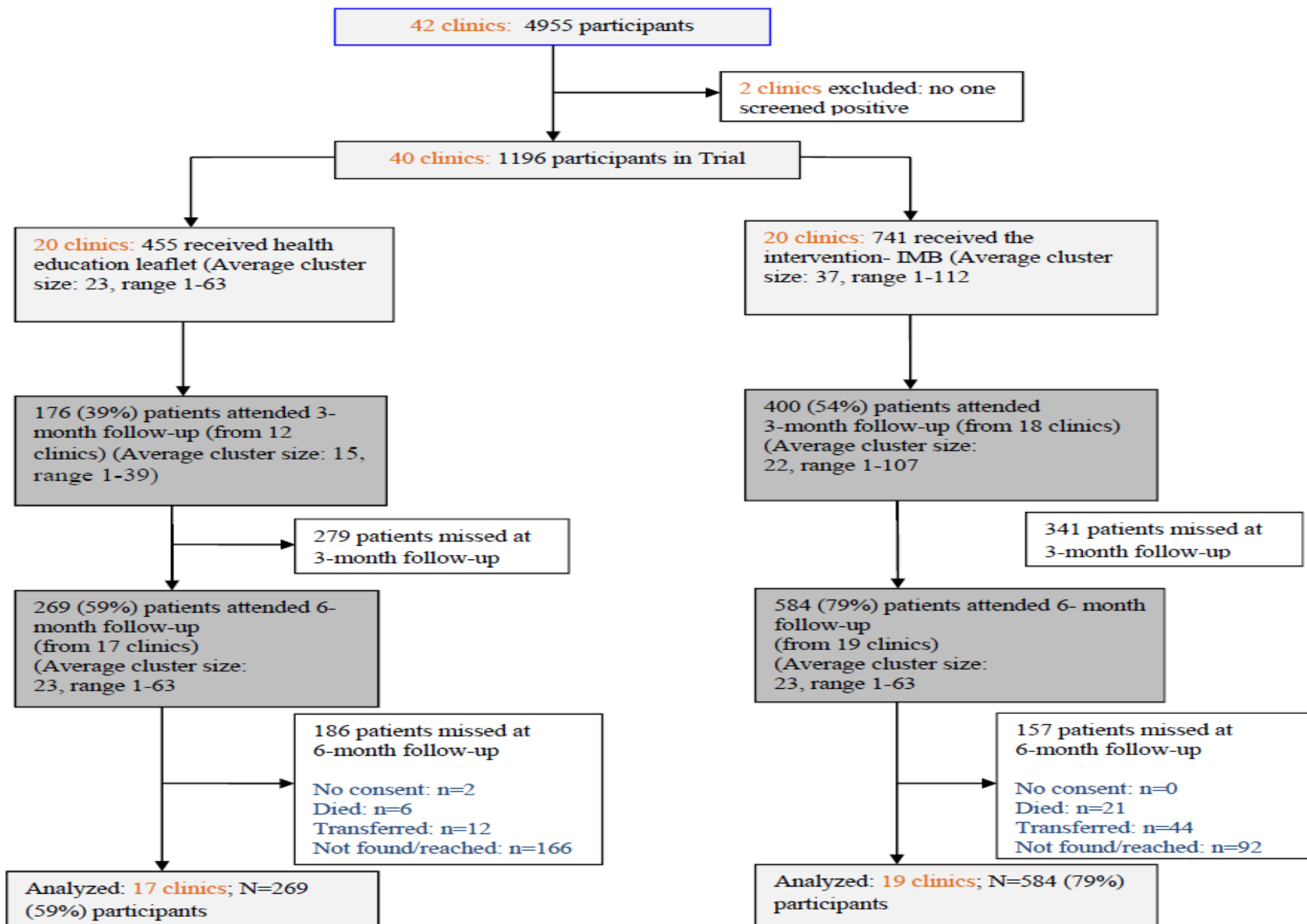
Interventions

- *Health Education Leaflet* on responsible drinking.
- *Brief Counselling* on alcohol.

The goals for brief counselling were as follows:

- 1) To identify any alcohol- related problems ,
- 2) To introduce the sensible drinking leaflet,
- 3) To provide feedback on the relationship between alcohol and TB treatment,
- 4) To work through the first 3 sections of the problem solving manual while mentioning the value of reviewing the other sections,
- 5) To describe drinking diary cards,
- 6) To identify a helper, and
- 7) To plan a follow-up counselling session.

Flow-chart of clinics and participants in the trial



Measures

- A health survey questionnaire : face-to-face interview in scheduled appointments at the clinic at 3 and 6 months following the baseline assessment.
- Medical file information for HIV and TB treatment status and outcome.
- The primary outcome: (1) change in the mean score on the AUDIT in the last 3 months and the number of AUDIT negative drinkers in the last month of the study period compared with baseline, as measured by the AUDIT.
- The secondary outcome was the successful TB response, classified by WHO as cured or treatment completed (versus treatment failure, defaulted, died or transferred out to another health facility)

Table 1: Baseline descriptives

Variables	Control N=455 (%)	Intervention N=741 (%)
Socio-demographic variables		
Gender (N, % male)	328 (73.4)	545 (74.9)
Age (M, SD)	35.9 (10.8)	37.2 (11.0)
Education		
Grade 7 or less	134 (29.9)	251 (34.5)
Grade 8-11	237 (52.5)	329 (45.2)
Grade 12 or more	79 (17.5)	148 (20.3)
Poverty index (5-20)		
Low (5)	134 (31.0)	191 (28.2)
Medium (6-12)	235 (54.4)	307 (45.3)
High (13-20)	63 (14.6)	179 (26.4)
Health variables		
Perceived health status		
Excellent	47 (10.4)	55 (7.5)
Very good	68 (15.0)	60 (8.2)
Good	133 (29.4)	282 (38.4)
Fair	130 (28.8)	254 (34.6)
Poor	74 (16.4)	83 (11.3)
AUDIT total (M,SD)	14.2 (6.0)	16.5 (6.5)
AUDIT (7-19)	369 (80.7)	507 (68.6)
AUDIT (20-40)	88 (19.3)	232 (31.4)
New TB patient	344 (78.0)	592 (81.3)
Retreatment TB patient	97 (22.0)	136 (18.7)
Daily or almost daily tobacco use	171 (38.1)	267 (39.8)
HIV positive	210 (46.5)	435 (59.0)
HIV negative	215 (47.6)	245 (33.2)
HIV unknown	27 (6.0)	56 (7.6)
On antiretroviral therapy	91 (29.8)	142 (32.3)

Table 2: Alcohol-related outcome measures at baseline, 3-month and 6-month follow-up and TB treatment outcome at 6-month follow-up

Variables	Time	Control	Intervention	OR* (95% CI) Adjusted for cluster	P-value	ICC (SE)
AUDIT total (M,SD)	Baseline	14.2 (6.1)	16.5 (6.5)	0.91 (0.78-1.07)	0.264	0.13 (0.04)
	3 months	4.0 (5.9)	5.0 (6.1)			
	6 months	3.6 (6.2)	2.4 (4.8)			
AUDIT (7-40) High risk or alcohol dependence	Baseline	455 (100)	741 (100)	0.70 (0.41-1.19)	0.186	0.11 (0.03)
	3 months	37 (21.0)	139 (34.8)			
	6 months	57 (21.2)	98 (16.8)			
AUDIT (7-19) High risk (N,%)	Baseline	367 (80.7)	507 (68.4)	0.64 (0.43-0.97)	0.035	0.07 (0.02)
	3 months	33 (18.8)	126 (31.5)			
	6 months	45 (16.7)	91 (15.6)			
AUDIT (20-40) Alcohol dependence (N,%)	Baseline	88 (19.3)	233 (31.4)	1.39 (0.75-2.56)	0.296	0.09 (0.03)
	3 months	4 (2.3)	13 (3.2)			
	6 months	12 (4.5)	7 (1.2)			
Heavy episodic drinking¹ (weekly+) (N,%)	Baseline	131 (29.0)	331 (45.2)	0.96 (0.46-2.02)	0.921	0.22 (0.06)
	3 months	11 (9.6)	23 (10.4)			
	6 months	13 (11.6)	16 (10.6)			
Daily or almost daily tobacco use (N,%)	Baseline	171 (39.0)	278 (40.8)	1.12 (0.67-1.89)	0.662	0.09 (0.03)
	6 months	71 (31.8)	93 (18.6)			
TB treatment outcomes (N,%)²	6 months					
Cure		195 (53.6)	289 (45.9)			
Complete		76 (20.9)	135 (21.5)			
Failure		22 (6.0)	29 (4.6)			
Default		65 (17.9)	155 (24.6)			
Died		6 (1.6)	21 (3.3)			
Transfer out		12 (3.2)	44 (6.5)			
TB treatment cure or completion	6 months	271 (74.5)	424 (67.4)	0.93 (0.46-1.88)	0.840	0.15 (0.5)

Brief intervention implementation fidelity analysis

- Assessment of intervention fidelity via the patient monitoring forms found sufficient fidelity.
- In 75% of the intervention sessions, the lay counsellors implemented at least 6 of the 7 requisite intervention steps (including, e.g., to describe drinking diary cards, stage of change, action and intervention plan).
- 96% of the cases of brief intervention, only one session
- Stage of change: 7.4% precontemplation, 38.9% at the contemplation, 34% preparation and 19.7% at the action stage.

Discussion

- Self-reported outcome data suggest that the provision of a health education leaflet can help reduce levels of hazardous and harmful alcohol use in those TB patients attending public primary care in South Africa.
- From baseline to 3- and 6-month follow-up, alcohol consumption declined significantly in both intervention and control groups.
- The intervention effect was, however, not statistically significant on the AUDIT score, hazardous or harmful drinkers and alcohol dependent drinkers (AUDIT: 7-40), alcohol dependent drinkers and heavy episodic drinking, while the control group effect was significant for hazardous drinkers (AUDIT: 7-19).

The significant reduction of hazardous or harmful alcohol use and possible alcohol dependence found in our trial in the control or no-treatment group has at least three possible explanations:

- 1) the intervention effect of alcohol screening/follow-up and provision of health education leaflet on sensible alcohol drinking,
- 2) the intervention effect of standard care (nurses provide advice on alcohol drinking) and
- 3) natural history changes in drinking over time in the course of TB treatment.

Study limitations

- The loss of patients at each follow-up point.
- Despite randomization there were baseline differences between the two groups on several covariate measures.
- Alcohol use was only assessed by self-report.
- Future studies should consider assessing alcohol consumption by both self-report and objective measures, such as blood alcohol level.
- Further, the study only assessed short-term intervention effects (6 months) and longer term assessments (12 months) would be needed, especially because TB patients after having been cured may start drinking again.

Conclusion

The results suggest that alcohol screening and the provision of a health education leaflet on sensible drinking performed at the beginning of anti-tuberculosis treatment in public primary care settings may be effective in reducing alcohol consumption

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