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

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(HIV/AIDS/SIT & TB (HAST) Research programmes)

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Background

- South Africa has 0.7% of the world's population and 28% of the world's population of HIV and TB co-infected individuals.

- It has been estimated that there is approximately 60% of people with TB who are co-infected with HIV (WHO, 2010)

Alcohol and TB

- Alcohol's role in the onset of TB,

- there is also strong evidence of a negative influence of heavy drinking/alcohol use disorder (AUD) on the clinical course of TB, higher relapse rates and experiencing the most destructive forms of TB [Rehm et al., 2009; Lönnroth et al., 2008].

Prevalence alcohol use disorder in TB patients

- 10% to 50% in studies carried out in Australia, Canada, Russia, Switzerland, and the USA [Lönnroth et al., 2008].

- only a few studies in low and middle income countries, e.g. India: 14.9-32% alcohol abusers/alcoholics [e.g., Suhadev et al., 2011];

- Brazil: 14-24% alcohol abusers [e.g., Paixão et al., 2007]

- South Africa: 31-62% alcohol misuse [Schoeman et al., 1994].

Aim of study

- The aim of the study is to estimate prevalence of recent alcohol use and hazardous or harmful drinking among TB patients attending public primary care clinics in South Africa.

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Methods

- Cross-sectional survey with tuberculosis patients in 42 public primary care clinics in South Africa.

- 42 public primary health care facilities were selected on the basis of the highest TB caseloads per clinic, 14 each from three districts with highest TB caseload Siyanda in Northern Cape Province, Nelson Mandela Metro in the Eastern Cape Province, and EThekwini in KwaZulu-Natal Province.

- All new TB and retreatment patients were consecutively screened using the Alcohol Use Disorder Identification Test (AUDIT) within one month of anti-tuberculosis treatment

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Measures

- Socio-economic and demographic
- *Alcohol consumption:* The 10-item Alcohol Disorder Identification Test (AUDIT)
- *Tobacco use*
- The *Kessler Psychological Distress Scale* (K-10)
- *Perceived general health*
- TB treatment status, HIV status and antiretroviral treatment was assessed by self-report and from medical information

Results- Screening: Socio-economic

Variable	Total (n=4900)		Men (n=2671) (54.5%)		Women (n=2229) (45.5%)	
			Hazardous or harmful alcohol use			
	N	%	N	%	N	%
Socio-demographics						
Age						
18-34	1769	32.0	259	31.4	114	12.6
35-44	2018	44.2	341	30.6	109	13.1
45 or more	1040	21.5	211	34.9	51	13.0
Marital status						
Never married	3323	72.7	560	32.9	195	12.4
Married/cohabitating	982	21.5	176	30.0	54	14.2
Separated/divorced/widowed	265	5.8	37	26.4	21	17.2
Education						
Grade 7 or less	1269	26.3	255	34.7	94	19.0
Grade 8-11	2213	45.9	299	33.1	135	14.3
Grade 12 or more	1336	27.7	153	25.2	49	7.1
Poverty index (5-20)						
Low (5)	1592	35.0	243	27.8	65	9.2
Medium (6-12)	2195	48.2	384	33.2	129	12.8
High (13-20)	768	16.9	451	35.4	52	15.9

Health-treatment characteristics

Variable	Total (n=4900)		Men (n=2671) (54.5%)		Women (n=2229) (45.5%)	
			Hazardous or harmful alcohol use			
	N	%	N	%	N	%
Health variables						
New TB patient	3650	76.6	566	29.4	194	11.6
TB retreatment patient	1113	23.4	247	39.1	83	17.9
HIV positive	2585	59.9	367	30.4	178	13.2
HIV negative	1728	40.1	392	32.4	81	12.5
Daily or almost daily tobacco use	980	20.0	401	52.0	74	40.0
Psychological distress (Kessler 10 >15)	3970	81.0	686	33.0	230	13.6
Perceived health status Excellent/very good	912	19.1	140	26.9	47	12.3
Good	1646	34.6	287	33.1	102	13.4
Fair/poor	2205	46.3	383	32.8	130	13.0
Diagnosed with diabetes	188	4.4	27	30.7	9	9.1
On antiretroviral therapy	899	22.1	105	26.6	57	11.5

Alcohol use by sex

	AUDIT score	Total N (%)	Men N (%)	Women N (%)	χ^2 or *	P
Abstainers and low-risk drinkers	0-7	3688 (76.8)	1759 (68.2)	1878 (81.6)	233.41	0.000
High risk drinkers	8-19	799 (16.6)	579 (22.5)	206 (9.5)	234.10	0.000
Probable alcohol dependence	20+	321 (6.6)	241 (9.3)	74 (3.4)		
Hazardous or harmful drinkers	8+	1120 (23.2)	820 (31.8)	280 (13.0)	233.41	0.000
		M (SD)	M (SD)	M (SD)		
Total AUDIT score		4.3 (8.1)	5.7 (8.1)	2.4 (6.0)	*	0.000

*Mann-Whitney U test= P<.001

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Predictor: hazardous or harmful alcohol use

	Men		Women	
Socio-demographics	Cr OR (95% CI) [a]	Adj OR (95% CI) [a,b]	Cr OR (95% CI) [a]	Adj OR (95% CI) [a,c]
Age				
18-30	1.00	1.00	1.00	1.00
31-44	0.96 (0.79-1.17)	0.89 (0.70-1.13)	1.05 (0.79-1.39)	1.01 (0.76-1.34)
45 or more	1.17 (0.94-1.46)	1.03 (0.72-1.43)	1.04 (0.73-1.47)	1.00 (0.70-1.42)
Marital status				
Not married	1.00	---	1.00	---
Married/cohabitating	0.88 (0.72-1.08)		1.17 (0.84-1.62)	
Separated/divorced/widowed	0.74 (0.50-1.09)		1.47 (0.89-2.40)	
Education				
Grade 7 or less	1.00	1.00	1.00	1.00
Grade 8-11	0.93 (0.77-1.13)	1.34 (0.99-1.83)	0.71 (0.53-0.95)*	0.73 (0.52-1.04)
Grade 12 or more	0.64 (0.50-0.81)***	1.08 (0.74-1.58)	0.32 (0.22-0.47)***	0.33 (0.21-0.51)***
Poverty				
Low	1.00	1.00	1.00	1.00
Medium	1.29 (1.06-1.56)**	1.11 (0.88-1.99)	1.45 (1.06-1.98)	1.35 (0.97-1.89)
Poverty high	1.43 (1.11-1.83)**	1.11 (0.81-1.51)	1.85 (1.25-2.73)**	1.38 (0.90-2.10)
Health variables				
Perceived health status				
Excellent/very good	1.00	1.00	1.00	---
Good/	1.35 (1.06-1.71)*	1.42 (1.06-1.90)*	1.10 (0.76-1.60)	
Fair/poor	1.33 (1.06-1.67)*	1.34 (1.00-1.80)*	1.07 (0.75-1.53)	
New TB patient	1.00	1.00	1.00	1.00
TB retreatment patient	1.54 (1.28-1.86)***	1.30 (1.03-1.65)*	1.67 (1.26-2.21)***	1.44 (1.05-1.97)*
Daily or almost daily tobacco use	3.59 (3.01-4.30)***	3.71 (3.00-4.59)***	5.72 (4.12-7.94)***	6.06 (4.02-9.14)***
Psychological distress (K-10 >15)	1.35 (1.09-1.68)**	1.40 (1.07-1.84)*	1.36 (0.96-1.92)	---
Diabetes	0.91 (0.57-1.44)	---	0.66 (0.33-1.32)	---
HIV negative	1.00	---	1.00	---
HIV positive	0.91 (0.76-1.09)		1.07 (0.81-1.42)	
On ART	0.77 (0.60-0.98)*	0.76 (0.58-0.98)*	0.91 (0.66-1.25)	---

Discussion

- new information on the prevalence of hazardous or harmful alcohol use in patients being treated for TB.
- high rates of hazardous or harmful drinking (23.2%) among tuberculosis public primary care patients in South Africa
- which is consistent with studies conducted in low and middle income countries [6-16].
- Previous studies using the same alcohol measure (the AUDIT) found lower rates of hazardous or harmful alcohol use in general public primary care patients in South Africa 13.3% [36] and 19.2% [37] and in a national population-based survey in South Africa (9%) [38].
- The higher prevalence of hazardous and harmful alcohol use among tuberculosis than general primary care patients may be in line with the causal link between alcohol abuse and tuberculosis [3,4,39].

Discussion

Based on multivariable analysis, in concordance with other studies that male gender [13] and tobacco use [20,23,24] were associated with hazardous or harmful alcohol use.

In univariate analysis this study found greater poverty, as found in other studies [13], to be associated with alcohol use. There is a concern as alcohol users from poor households spend large proportions of their income on alcohol and tobacco potentially leading to a vicious cycle between treatment outcomes and the patient's low financial situation [13,40].

Discussion

•Further, the study showed that being on TB retreatment patient was associated with hazardous or harmful alcohol use. Also other studies found TB retreatment patients category [13] and TB medication non-adherence [5,9,10,11,18], which may have led to retreatment, to be associated with hazardous or harmful alcohol use. This seems to confirm evidence of a negative influence of heavy drinking/alcohol use disorder (AUD) on the clinical course of TB, higher relapse rates and experiencing the most destructive forms of TB [3,4].

•In agreement with other studies [14], this study found no difference regarding association with HIV and alcohol consumption. In agreement with other studies in general patients [21-24,41], this study found among men an association between anxiety or depression with alcohol use disorders.

Conclusion

- The study found a high prevalence of hazardous or harmful alcohol use among tuberculosis public primary care patients.

- This calls for screening and brief intervention and a comprehensive alcohol treatment programme as a key component of TB management in South Africa

Thank you

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