



# Targeting harmful use of alcohol for prevention and treatment of tuberculosis: a call for action

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**Harmful use of alcohol favors development of tuberculosis and poor outcomes** <http://ow.ly/oWKS30cyHcx>

**Cite this article as:** Raviglione M, Poznyak V. Targeting harmful use of alcohol for prevention and treatment of tuberculosis: a call for action. *Eur Respir J* 2017; 50: 1700946 [<https://doi.org/10.1183/13993003.00946-2017>].

Over the past few years, the increasing role of risk factors and determinants of tuberculosis (TB) has been sufficiently elucidated [1, 2]. A number of noncommunicable conditions that are associated with TB have been identified [3]. These are particularly important at the start of the new millennium, as more and more low- and middle-income countries have entered a phase of epidemiological transition characterised by growing epidemics of noncommunicable diseases and conditions replacing infectious diseases as the main causes of ill health and deaths [4, 5].

The harmful use of alcohol is one of the four key risk factors for major noncommunicable diseases [6, 7] that has also emerged as a risk factor for some infectious diseases, including TB [7, 8]. The WHO Global strategy to reduce the harmful use of alcohol, endorsed by the World Health Assembly in 2010, defines broadly the “harmful use of alcohol” as “drinking that causes detrimental health and social consequences for the drinker, the people around the drinker and society at large, as well as the patterns of drinking that are associated with increased risk of adverse health outcomes” [9].

The links between heavy drinking and TB had been described in the medical literature since the middle of the past century [10], but only recently, due to results of well-designed studies summarised in subsequent systematic reviews and meta-analyses [11, 12], the causal relationship of TB with heavy alcohol consumption and alcohol use disorders had been firmly established and taken into consideration in the estimates of alcohol-attributable disease burden [13–15].

In this context, the article of IMTIAZ *et al.* [16] in the *European Respiratory Journal* is an important step forward in quantifying the contribution of alcohol consumption to the burden of TB at global and national levels, as well as the contribution of the TB-related morbidity and mortality to the overall alcohol-attributable disease burden. These new estimates suggest that in 2014 about 170 000 deaths due to TB were attributable to alcohol consumption worldwide, and as many as 17% of incident cases of TB and 15% of deaths due to TB could be prevented by eliminating the harmful use of alcohol. Hence,

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Received: May 08 2017 | Accepted: May 15 2017

M. Raviglione and V. Poznyak are staff members of the World Health Organization. The authors alone are responsible for the views expressed in this publication and they do not necessarily represent the decisions or policies of the World Health Organization.

Conflict of interest: None declared.

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identification and implementation of effective strategies and interventions to reduce the harmful use of alcohol is of global relevance and significant importance for TB prevention and care. There are several practical implications that follow these findings.

First, to promote public health action one must acknowledge the overall relevance of reducing harmful use of alcohol for TB control. Development, implementation and enforcement of alcohol control policies have a potential to alleviate the role of the harmful use of alcohol among the key risk factors for TB and associated mortality in the population. This is particularly important for high-burden countries suffering from the dual burden of TB epidemics and the harmful use of alcohol.

Second, the implication for action is linked to targeted prevention and treatment interventions focused on high risk groups and individuals, and delivered within health and social care systems. In recent years the role of heavy drinking and alcohol use disorders in the incidence and progression of TB, as well as their impact on TB treatment adherence has been documented in an increasing number of countries in different continents, including India [17], Kazakhstan [18], Poland [19], Vietnam [20], South Africa [21, 22] and Uganda [23]. The role of heavy drinking and alcohol use disorders in favouring development and spread of drug-resistant TB has been confirmed in studies conducted in diverse economic and cultural contexts [24–27]. In spite of increasingly documented and quantified contribution of the harmful use of alcohol to development and progression of TB and poor treatment outcomes, the priority in public health given to addressing this risk factor is still far from what could be expected based on the evidence available. Thus far, very few pilot projects have assessed the feasibility and effectiveness of interventions focused on alcohol use disorders in management of TB [28]; results of integrating alcohol treatment interventions into routine TB care for patients with alcohol dependence in one Russian city are not particularly encouraging [29]. There is an urgent need to invest in identifying the most appropriate and efficient treatment options and delivery models for people affected by TB and alcohol use disorders.

There are many challenges which need still to be addressed. For population-based epidemiological studies it is important to further explore the thresholds of alcohol exposure that have an impact on incidence and progression of TB. The article by IMTIAZ *et al.* [16] indicates alcohol exposure thresholds used in the analysis which are based on currently available evidence and are different for men and women. However, this issue definitely requires further research as the operationalisation of alcohol exposure and the use of compatible, comparable and clinically relevant measures across the studies continues to be a challenge; this hampers translation of research findings into clinical practice and their use in prevention strategies and interventions. For clinicians it is important to identify precisely defined health conditions such as alcohol dependence or alcohol use disorder of specified severity, and preferably discrete patterns of alcohol use, including the hazardous use of alcohol, so that the most effective interventions and treatment options for patients with TB can be designed. Currently a range of treatment options with proven effectiveness is available for management of hazardous drinking and alcohol use disorders from screening and brief interventions for risky patterns of alcohol consumption to pharmacological and structured psychosocial interventions for management of alcohol dependence [30–32].

In spite of current gaps in our knowledge, there are two major public health approaches that are justified in view of all accumulated evidence and new data presented by IMTIAZ *et al.* [16]. The first approach is related to systematic screening for alcohol use and early identification of alcohol use disorders in all patients engaged with prevention and treatment services for TB. Health professionals in these settings should be trained to identify not only alcohol use disorders, but also patterns of alcohol use associated with increased risk of negative health consequences including TB-related risks. In other words, hazardous patterns of alcohol consumption and alcohol use disorders must be recognised and appropriate interventions and treatment options implemented. These may include simple advice and brief interventions or expand to pharmacotherapy of alcohol dependence, if this is diagnosed, and referral to specialists for support in organising and implementing structured treatment.

The second approach is related to active screening and identification of TB cases among people with alcohol use disorders, including those enrolled in special treatment programmes for alcohol dependence. Special attention would need to be paid to high risk groups for these conditions including the homeless, people released from prisons, and those using other psychoactive substances such as tobacco and illicit drugs. Individuals with alcohol and comorbid drug use disorders present a particularly high risk for TB [27], and, in addition, injection drug use is a well-established risk factor for HIV and hepatitis C [33, 34].

Management of TB and alcohol use disorder comorbidity requires intensive patient support and social protection measures. Though this means additional resources, the cost-effectiveness of these interventions is likely to be high in view of potential to increase adherence to treatment regimens, prevent multidrug-resistant TB and mitigate socioeconomic effects and risk of further impoverishment associated with high societal costs. Health education, counselling, psychosocial and material support to patients are

emphasised as important elements of TB case management in the new WHO TB treatment guidelines released in 2017 [35].

Finally, at population level, success can be achieved only if the variety of available public health approaches is effectively supported by coherent and linked policies and strategies aimed simultaneously at ending TB as a public health problem and reducing the harmful use of alcohol. To ensure this happens, the mounting evidence of the impact of the harmful use of alcohol on incidence and treatment outcomes of TB requires appropriate recognition at the level of strategic planning and political commitment backed by resources. The need for an integrated approach to care and prevention of complex public health problems like TB and harmful use of alcohol, built on strong health services and on societies as a whole is obvious. This approach is embedded in the 2030 Agenda for Sustainable Development where both ending TB and prevention and treatment of substance abuse are highlighted [36]. The strong causal relationship existing for noncommunicable conditions and TB, demanding synergistic, combined interventions, is also one of the key issues for discussion at the First WHO Global Ministerial Conference “Ending tuberculosis in the sustainable development era – a multisectoral response” to be held in Moscow on November 16–17, 2017. The expected Ministerial Declaration needs to emphasise the need for synergies and identify bold deliverables that can be subsequently put on the table of heads of state at the High Level Meeting on TB of the UN General Assembly in 2018. This will ensure commitment and willingness to finally respond adequately and reduce dramatically the burden of TB and the harmful use of alcohol that are ravaging humankind.

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