

## *Tuberculosis and co-existing common mental and substance-use disorders: A case for including mental healthcare and substance-use prevention as part of the tuberculosis treatment package in high-burden provinces*

South Africa is one of the 22 High Burden Countries that contribute approximately 80% of the total global burden of all TB cases. South Africa has the seventh highest TB incidence in the world.

(Department of Health, RSA 2007: 5)

### **Executive summary**

South Africa has 0.7% of the world's population and 28% of the world's population of the human immunodeficiency virus (HIV) and tuberculosis (TB) co-infected individuals. It has been estimated that approximately 60% of people with TB are co-infected with HIV (WHO 2012). Co-infected individuals have almost double the chances of getting multi-drug resistant TB (MDR-TB) and extreme-drug resistant TB (XDR-TB). These individuals also have a high mortality rate due to co-infection with HIV (Department of Health, RSA 2007).

Individuals who are infected with both TB and HIV and also have a co-existing mental disorder with an associated substance-use disorder may be considered to suffer a quadruple burden of disease leading to poor health outcomes. There is a relatively high prevalence (about 10%) of common mental disorders (CMDs) in low- and middle-income countries (LMICs),

including South Africa. Individuals infected with HIV and/or TB are nested in the general population, and the reported rates of TB with co-existing cardiac and metabolic diseases, such as diabetes mellitus, range from 30% to 70%. The co-existing prevalence of alcohol-use disorders ranges from 4% to 62% (Peltzer et al. 2012a). This scenario places huge pressure on healthcare financing for integrated health services.

In 2011, the Human Sciences Research Council (HSRC) conducted a cluster-randomised control trial (C-RCT) study in three selected provinces in South Africa using a public primary clinic-based sample receiving anti-TB treatment (Peltzer et al. 2011, 2012b). On analysis of the baseline and post-intervention results of this study, as well as corroborating evidence in the literature (Santha et al. 2000; Shinn et al. 2010), the following improvements in healthcare provision for individuals with TB are recommended:

- Make mental healthcare, including intervention programmes for

substance-use disorders, an integral part of the anti-TB treatment package in provinces with a high burden of TB disease.

- Allocate more resources to 'high TB disease burden' areas, especially for the provision of psychological and social services to TB patients.
- Develop a financing model to address the implications for human resources towards implementation of this intervention.
- Continue the World Health Organization (WHO) DOTS strategy as an effective TB management strategy.

### **Background and context: The epidemiological pattern of TB, HIV, and common mental and substance-use disorders**

In 2011, 8.7 million people worldwide fell ill with TB and 1.4 million people lost their lives to this communicable disease (WHO 2012). Tuberculosis ranks as the second leading cause of death from an infectious disease worldwide, after HIV. The WHO and the Global Fund to Fight AIDS, TB and Malaria estimate that between 2014 and 2016 there will be an annual anticipated demand for at least US\$1.6 billion in international support to bridge the funding gap in 118 LMICs (WHO 2013).

In South Africa, the health outcomes of TB-infected individuals are influenced by many factors, including low socio-economic status, inequalities, mental and substance-use disorders and other behavioural risk factors. While the social determinants of TB have been given much attention and acknowledgement, mental and substance-use disorders and other behavioural risk factors have been understudied and neglected as a determinant, mediator and outcome of TB disease.

CMDs are a cluster of psychiatric conditions, including depression, anxiety and psychiatric disorders, in which people report physical symptoms but deny psychiatric problems (somatoform

disorders), and which make a significant contribution to the burden of disease and disability in LMICs (Naidoo et al. 2009; Wood et al. 2011). These conditions are responsible for up to 10% of the total global disease burden. At least one-third of all individuals seen in public primary care facilities in LMICs suffer from CMDs, which are not recognised nor treated in the majority of these individuals. A number of studies have reported co-morbidity of TB and CMDs, although fewer studies have investigated CMDs among TB patients in LMICs (Naidoo & Mwaba 2010; Peltzer et al. 2012c). Studies conducted in LMICs report CMD rates ranging from 30% to 70%. South Africa in particular reports a rate of 46% co-morbidity between TB and CMDs (Naidoo & Mwaba 2010).

This policy brief makes a case for mental health services to be an integral part of the anti-TB treatment package in South Africa, given the relatively high rates of CMDs, symptoms of post-traumatic stress disorder (PTSD) and substance-use disorders. The factors that contribute to a high prevalence of TB in the country are complex. While the high prevalence is associated with HIV infection, social and psychological factors also play a role. There has to be a stronger drive for case detection, prevention and treatment of TB, given the burden of the disease. It is important to address factors that impact health outcomes associated with the disease.

### **Key research findings**

Baseline assessments for this C-RCT revealed that the prevalence for psychological distress and PTSD symptoms was found to be 26.3% and 29.6% respectively in individuals being treated with anti-TB drugs and who were a part of the study (Peltzer et al. 2012c). The prevalence of hazardous alcohol consumption in this sample was found to be 22.5% among men and 9.5% among women, and current tobacco use (past month) was 27.6% (Peltzer et al. 2012a).

Geographically, the burden of TB is highest in Asia and Africa. India and China together account for almost 40% of the world's TB cases. The African Region has 24% of the world's cases and the highest rates of cases and deaths per capita.

(World Health Organization 2012: 2)

About 14% of the global burden of disease has been attributed to neuropsychiatric disorders, mostly due to the chronically disabling nature of depression and other common mental disorders, alcohol-use and substance-use disorders, and psychoses.

(Prince et al. 2007: 859)

Almost 80% of TB cases among people living with HIV reside in Africa. (World Health Organization 2012: 2)

Furthermore, it was found that the anti-TB treatment non-adherence rate (those who missed medication at least once over the past ten days) was 24.5%. The anti-TB/ARV non-adherence rate (those who missed medication at least once in the last seven days) was 11.8% (Naidoo et al. 2013).

The results of this C-RCT study show that it is important to screen individuals with mental and substance-use disorders who also have co-existing TB and/or HIV infection. Individuals who screen positive for mental and/or substance-use disorders should be provided with the appropriate medical and/or socio-psychological treatment, which will improve their well-being and positively influence their 'adherence to treatment'.

The intervention arm in this C-RCT study consisted of a brief psychological intervention, and the control arm consisted of a health education leaflet. The aim of the intervention was to reduce alcohol consumption among those individuals who participated in the study. While the results of the study did not show a significant intervention effect across all categories of alcohol consumption, it did indicate which category of drinking, as defined by the Alcohol Use Disorder Identification Test (AUDIT), benefited from the intervention, and which category of drinking benefited from receiving the education leaflet (the control condition). The results indicated that brief psychological intervention may be adequate for alcohol-dependent or heavy episodic drinkers, while health education may be sufficient for high-risk drinkers.

Adding a mental health component to the integrated approach to TB/HIV care and treatment can be implemented using health workers who are enabled to use screening tools to assess for the presence of symptoms of mental disorders, including identifying the adult patients engaging in harmful or hazardous alcohol

consumption and/or excessive tobacco/illicit drug use as shown in this study. The effect of treating mental disorders will be improved adherence to anti-TB treatment and/or ARVs, which will improve TB cure rates and the quality of life of TB- and/or HIV-infected individuals (Naidoo et al. 2013).

## Critique of policy options

While the WHO recommends Directly Observed Treatment Short Course (DOTS) as an effective strategy at a global level for TB cure, patient outcomes are expected to be poor if the infected individual also has a co-existing CMD and/or a substance-use disorder and is unable to cope with this additional emotional burden (Naidoo et al. 2013). The DOTS approach, while simple to implement, is by nature fairly prescriptive and perhaps not sufficiently 'patient-centred'. The implementation of DOTS is based on the assumption that all those requiring treatment have the social and individual resources to follow through on the treatment. The DOTS strategy is, unfortunately, entirely located within a biomedical model and does not sufficiently address social and psychological aspects in the treatment protocol.

It is recommended, therefore, that once a TB case is detected, screening tools for CMDs, PTSD symptoms, substance-use disorders and other associated risk factors should be administered to the infected individual to ascertain his or her social and psychological functioning. In addition, other social-economic measures, such as poverty levels, should be obtained (Naidoo et al. 2013). A good knowledge of the contextual factors associated with TB-infected individuals will assist in developing a more comprehensive treatment programme that includes mental health and social services support.

## Conclusion and policy recommendations

In light of the evidence presented, it is recommended that the DOTS strategy recommended by the WHO for TB-infected individuals continue to be implemented. In addition, screening for CMDs, substance-use and other mental disorders should be carried out as part of the integrated health service offered to clinic patients (Peltzer et al. 2012b; Naidoo et al. 2013). This additional screening component can be implemented by using existing TB clinic staff who can administer quick and reliable tools to measure CMD symptoms, PTSD symptoms and behavioural indicators to identify those at risk for substance-use disorders. TB patients who require psychological and psychiatric care may increase the cost of healthcare in the immediate term. However, in the medium to long term, overall healthcare costs should decrease because patient health outcomes will improve with these health promotion and disease prevention efforts (Perez et al. 2013; Prince et al. 2007). Allocation of resources to 'high disease burden' areas needs to be reviewed. It is proposed that existing mental health workers, such as lay counsellors, psychological counsellors and social work practitioners, also be utilised to provide psychological and social services to TB patients.

Policy recommendations are as follows:

1. Screening for mental and substance-use disorders must be conducted for TB patients in high-burden provinces within public health facilities in all districts.
2. TB patients who are HIV-positive and have co-existing mental and substance-use disorders require comprehensive care from the health service sector.
3. A financing model for additional human resources to implement the therapeutic interventions for mental and substance-use disorders should be developed.
4. Provincial health managers for TB care should compile a resource booklet for patients who may require psychological or social services that fall outside the domain of the clinic facility.
5. Health managers at national, provincial and district levels should develop a monitoring and evaluation mechanism using sound methodologies to assess the impact of screening and treating for mental disorders while continuing to use the anti-TB DOTS strategy recommended by the WHO.
6. National-level health managers should develop an awareness campaign for TB prevention and treatment available at public health facilities.

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