

# Determinants of treatment defaulting among tuberculosis patients in Khartoum State, Sudan

Citation for published version (APA):

Ali, A. O. A. (2021). *Determinants of treatment defaulting among tuberculosis patients in Khartoum State, Sudan*. [Doctoral Thesis, Maastricht University]. Maastricht University.  
<https://doi.org/10.26481/dis.20210420aa>

## Document status and date:

Published: 01/01/2021

## DOI:

[10.26481/dis.20210420aa](https://doi.org/10.26481/dis.20210420aa)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

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- The final published version features the final layout of the paper including the volume, issue and page numbers.

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## **The impact of the research**

Tuberculosis (TB) is the major causes of illness and death worldwide for more than three decades. It is classified among the top ten causes of global cause of death, particularly in developing countries. Our objective was to identify factors associated with discontinue treatment among TB patients in Khartoum State, Sudan. Based on our findings, relevant suggestions and recommendations can be made with the aim to help the patient, families, communities, policy makers and health care providers make changes that will improve treatment compliance and treatment outcomes, and leading to a reduction in TB dropout among tuberculosis patients in Khartoum State and Sudan.

The results of our studies have the potential to positively impact TB patient care as the findings of our research identified several factors leading to discontinue TB treatment

### **Impact for patient health care, health care providers, TB control program and the future research:**

The results of these studies show that the patients lack of knowledge, those with with low level of education, and stigma such as feeling shame were strong factors for discontinue TB treatment. It is therefore of vital importance that health care workers provide health education to all TB patients, their families, and the wider community. In order to communicate this effectively, we recommend that health care workers adopt a receptive and welcoming approach to their patients. Furthermore, it is necessary for the national TB program (NTBC) to update the guidelines (plans, procedures and strategies) for health education to include the use of non-traditional health education methods which offer good opportunities for interaction between patients and their health care providers.

Moreover, Our study indicates that special attention is needed for the poor patients, displaced individuals and refugees with a high dropout rate living in camps, rural and remote areas around the big cities in Khartoum State where TB medical services are provided in clinics managed by non-governmental organizations. The national TB control program needs to develop an intervention plan that includes training for health personnel, provision of equipment and tools, and availability of drugs and laboratory services.

Due to lack of resources for the national TB control program in Khartoum State, we strongly recommend that the NTB programme actively encourages more community participation. This can be achieved by coordinating with governmental and non-governmental organisations and charity associations to get them involved in the provision of health services for TB patients. In addition, these nongovernmental organization can participate in overcoming the stigma by active intervention using non-traditional health education methods. To ensure the success of a health education initiative, it is important to have a motivated plan which communicates and emphasizes specific messages, such as the fact that TB is a treatable and preventable disease. Furthermore, it is essential that various outreach methods are employed, including social media, movies, drama, public talks, and brochures.

Also, Our study evaluated the use of new communication technology (short message services (SMS via mobile phone) by the NTCP for the follow-up of TB patients. We found that the use of mobile phones achieved positive results such as: a higher cure rate, a decrease in the dropout rate and an increase in patient knowledge about TB. Our results show that there is

considerable promise in using mobile phone technology to improve the efficiency and quality of TB treatment. While recognising that there are many benefits to using mobile phones in place of landline telephones, other alternative means of communication should also be considered. These might include the use of voice messages for those who cannot read SMS messages, the use of video-observed therapy to follow-up patients taking TB drugs, or the use of reminders to help patients take the correct dose at the right time.

Our studies are the first to evaluate the team tracing the patients who discontinue treatment in Khartoum State, and Sudan as a whole. Based on our results, we recommended that improvements are made to the retrieval tracing teams, by providing additional training for health personnel, and increasing the availability of transportation and communication tools. This team will try to encourage the non-attender TB patients to come back to continue their treatment and reduce dropout rate. The team follow sequence of contact attempts including phone call and home visit. Moreover, we found that some patients may discontinue their treatment during the referral process from one TB clinic to another. There is therefore a need to play special attention regarding the referral system of TB patients, and improve the communication methods in order to ensure information is effectively shared between the TB health units.

As TB is a chronic disease that need treatment with multiple drugs for more than six month duration. This had social, financial and psychological effects for TB patients, their families and the community. Discontinue treatment or taking treatment irregular may enhance the spreading of the disease, In addition, it increases the risk of treatment failure, disease may become active again,, acquisition of drug resistance, prolonged duration of

illness, and death. Furthermore, if left untreated, an infected person is expected to spread infection up to 15 people every year. Hence identification of risk factors leading to discontinue treatment in Khartoum State is therefore essential. Thus our study indicates that TB patients specially those had drug resistant require additional and special attention from the health care providers over the long treatment duration period, due to the fact that patients with drug resistant are associated with a high dropout rate.

Our study reported that there was a substantial group of TB patients in Khartoum State who had not been screened and tested for HIV status, despite the fact that it is the core policy of the NTB programme to screen all TB patients for HIV. It is therefore of vital importance to expand the provision of HIV testing services in all TB clinics.

Our research identified several factors influencing discontinue TB treatment. We believe that the findings are applicable to the current situation of TB management and control in Sudan and in other developing countries. Based on the findings presented in this thesis, we have several suggestions for further research to assess in depth the factors associated with discontinue TB treatment not evaluated in our studies. Also, in the light of our study findings, we recommend the reassessment and evaluation of NTCP strategies. Furthermore, we recommend to evaluate use of mobile phone use in decreasing the dropout rate of TB treatment.