

IMPACT OF COVID-19 PANDEMIC ON TB CONTROL PROGRAMME IN NEPAL: AN OVERVIEW

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ABSTRACT

COVID-19 pandemic is affecting worldwide. TB and COVID-19 both are infectious and primarily affect the lungs and show similar symptoms thus, it is essential to diagnose cases. Accurate diagnostic tests are essential for both TB and COVID-19. COVID-19 has reversed minimum five years of progress in fighting TB. The study is based on review of all available reports, literature, published studies in peer reviewed journal related to COVID-19 pandemic impact on TB control program in Nepal. PubMed, Google scholar, HINARI are the major search engines and or databases used for the review. COVID-19 led lockdown had a significant impact on TB services in Nepal. There is decline in the identification of new cases and had impacted on sputum courier, enrolment, diagnosis and follow up. People centered delivery of TB prevention, diagnosis, treatment and care services should be ensured in tandem with the COVID-19 response. Health authorities should maintain support to essential TB services during emergencies.

Key Words: COVID-19, Pandemic, Tuberculosis, Nepal

INTRODUCTION

Tuberculosis is an infectious disease, caused by *Mycobacterium tuberculosis* and spread through the air via respiratory droplets where, COVID-19 caused by SARS-CoV-2 virus. Both are infectious and primarily affect the lungs and show similar symptoms such as cough, fever and difficulty in breathing which might perplex peoples. Tuberculosis is a contagious disease with an estimated 10 million active TB cases with almost 4,000 daily deaths globally⁽¹⁾. A quarter of the world's population has latent TB infection⁽²⁾. Treatment coverage and success rate are on going challenges for low- and middle-income countries^(3,4). TB care and prevention programs

specially in high burden countries are facing disruption to their routine services⁽⁵⁾. TB remains a public health challenge in Nepal, with an estimated 69,000 new cases per year and more than 50% of cases estimated being missed⁽⁶⁾.

COVID-19 pandemic (SARS-CoV-2) was first detected in the Hubei province of China in December 2019 which took less than a week to reach Nepal; the first case was detected on 23rd January, 2020. We had no inkling of the crisis that awaited us where a number of cases began to exaggerate and upset the public health system thus, government of Nepal declared public health emergency⁽⁷⁾. The COVID-19 pandemic has disturbed the delivery of health care and placed unprecedented demands and pressure on the health system⁽⁸⁾.

Focusing on the COVID-19 pandemic, we are ignoring the potential impact of endemic disease to human health which might be more devastating than COVID-19^(4,8). COVID-19 pandemic is having a serious impact and threatens progress on TB

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control program. Due to the pandemic, there is decline in TB cases diagnosis. The signs and symptoms of TB and COVID-19 are similar and both primarily infect the lungs. All the focus is set to COVID-19 and service provision to tuberculosis patients is overshadowed. According to National TB prevalence survey, the burden of TB in Nepal is significantly larger; the preliminary results from the survey suggest the burden of TB is two thirds greater than previously estimated, which increases the number of “missing cases” significantly. As, we already have missing cases which need to be identified, the COVID-19 pandemic has brought disruption in the case diagnosis and notification and we are more far away to achieve END TB strategy⁽⁶⁾

METHODOLOGY

The study is based on review of all available reports, literature, published studies in peer reviewed journal related to COVID-19 pandemic impact on TB control program in Nepal. PubMed, google scholar, HINARI are the major search engines and or databases used for the review. Google was used to find various sources like NTP Nepal and WHO. From these websites, factual information was collected in addition to policy documents and guidelines. PubMed, google scholar, HINARI were used to find relevant abstracts of peer reviewed articles in different journals. The abstracts were further screened and if relevant, full articles were retrieved. Where problems arose with finding full articles, an additional search was done using the HINARI and research-gate search. The National Tuberculosis program of Nepal and WHO world TB report were the major sources for reviewing the pattern and trend of impact of COVID-19 pandemic on TB control program.

RESULT AND DISCUSSION

Globally, tuberculosis case detection decreases by an average 25% after COVID 19 pandemic. An estimated additional 190 000 TB deaths are predicted (13% increase) which bring total to 1.66 million TB deaths in 2020⁽⁹⁾.

COVID 19 has reversed minimum five years of progress in fighting TB⁽¹⁰⁾. Looking towards the global level of TB Mortality 2015, a serious setback in the progress towards the End TB strategy

milestones and targets need to be emphasized⁽⁹⁾. Despite global and national efforts to end TB and availability of cost-effective medicines to treat and cure, still too many people continue to suffer from TB⁽¹¹⁾. Different programs were implemented in different level to end TB by 2035 which includes active case finding screening camp, Childhood TB management , Sputum transportation, Contact investigation, Private Public Mix related activities, Preventive therapy for children, TB screening among migrant and prisoners and FAST strategy in major hospitals to decrease the risk and intensity of TB infection in OPD which were disturbed by COVID-19 pandemic⁽¹²⁾. Because of restrictions in movement, lock down, psychological fear of contacting the disease in health care facilities, diversion of health care workers for containment and management of COVID-19, utilization of diagnostic test for COVID has disrupted TB programme. Moreover, government focused and response to only COVID 19 and channelling most of financial and human resource to fight against pandemic has disrupted TB program⁽⁸⁾.

Case diagnosis: After the COVID-19 led nationwide lockdown, mean number of sputum collection for diagnosis of TB reduced by 67.3%⁽¹³⁾. Due to travel restrictions and fear of contracting COVID-19, about 26.9% of TB patients had postponed or missed going for their follow-up examinations⁽¹⁴⁾. Additionally, decreased incidence may be reported because of the under-diagnosis of TB⁽³⁾. GeneXpert technology was used for diagnosis of TB but in this COVID pandemic it has been used for COVID-19 testing which ultimately affected in the diagnosis of TB⁽¹⁵⁾.

Case notification: COVID-19 has resulted in an estimated 21% reduction in TB notification and 0.5 million additional TB deaths. Simply, we can say COVID-19 pandemic has erased all our gains and efforts made during last decade⁽¹⁶⁾. Tuberculosis programmes have contributed significantly to the COVID-19 response, as both diseases present with respiratory symptoms, and similar infrastructure, skills and expertise are needed to response COVID-19. Services were diverted to COVID 19, which affect program resources and TB services that led to decreased case notification drastically^(11,17).

COVID-19 pandemic has also adversely affected the TB case notification and follow up in China, India^(14,18,19). Study of different countries show that COVID-19 patients with concurrent TB have about three times higher mortality than those without TB⁽¹⁶⁾.

Looking towards the scenario of COVID-19 pandemic impact on TB, there was 45.5% reduction in TB case enrolment and 41.7% reduction in case follow-up which indicates difficulty to achieve End TB by 2035^(8,13).

In 2018, about 32474 TB cases were notified which slightly decreased to 32043 in 2019. In 2020, compared to 2019, there is decrease in TB cases by 13.41 %.⁽²⁰⁾ (Figure 1) TB Case notification was 109 per 100,000 in 2019 which slightly diminished to 93 per 100,000 in 2020. (Figure 2).

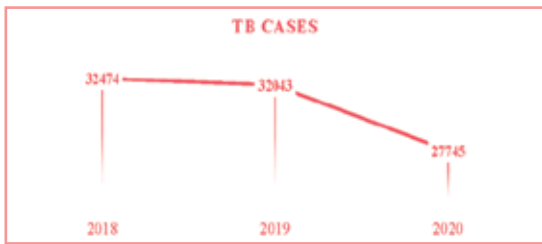


Figure 1 Comparison of TB cases between 2018-2020 COVID pandemic period, Nepal

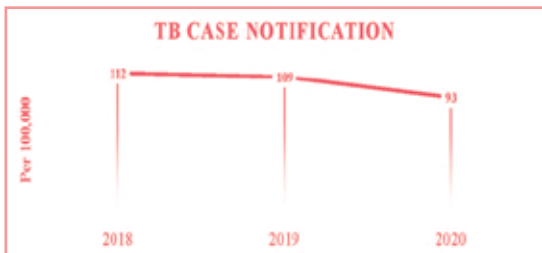


Figure 2 Comparison of TB case notification between 2018-2020 COVID pandemic period, Nepal

TB treatment compliance

COVID-19 pandemic has brought the challenges in drug procurement and supply of drugs. Medical supplies had been stalled due to lockdown and restrictions thus affecting TB patients in drug compliance. Peoples had developed fear of transmission of disease and hesitate to visit health centers for the medicine. The number of patients with registered TB as being on treatment over the month is decreased. TB treatment compliance rate had decreased by 1.41% from 2019 to 2020.

Treatment compliance can effect on tuberculosis program^(20,21).

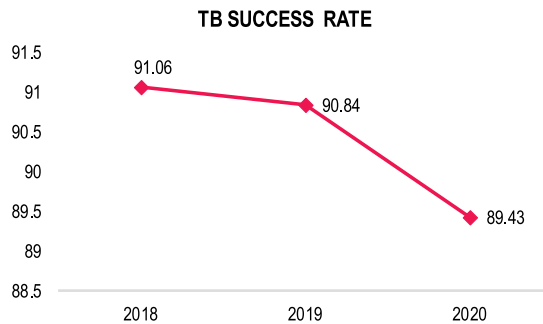


Figure 3 Comparison of TB success rate between 2018-2020 COVID pandemic period, Nepal

Supply of diagnostics kits and chemical

With the COVID 19 pandemic, the tuberculosis diagnostic test platforms such as GeneXperts were used to detect the COVID-19 causal agent, which increases stock outs of the diagnostics kits, chemical. Due to pandemic, bidding for the cartridges for diagnosis TB need to be repurposed and takes a longer time duration in process of purchasing^(8,11,17).

HR management

Tuberculosis programmes have contributed significantly to the COVID-19 response, as both diseases present with respiratory symptoms, and similar infrastructure, skills and expertise were utilized in COVID response. All the human resources of health and health facilities were distracted and assigned a wide variety of events related to controlling the outbreak. The situation of human resources for the tuberculosis program before the pandemic was under-resourced additionally, the existed human resources were also diverted to the COVID 19 response. Due to the scarcity of the health workers focusing on TB, all the services related to diagnosis, awareness, treatment compliance were affected^(16,17).

Nepal turns towards federalism where transitional phase to federalism had brought changes in the structure of health resources. All the experienced district and regional TB staff were transferred to new federal health structure which brought disturbance and discontinuity in the TB services. There was a disruption in the services due to the

transition phase of federalism. Additionally, the COVID -19 pandemic had added burden to TB program as all the services and human resources were diverted to COVID 19 response⁽²²⁻²³⁾.

CONCLUSION

Tuberculosis remains a global health emergency and needs our attention more than ever, considering the significant resources are now being diverted to COVID-19 management the signs and symptom of TB resembles with COVID-19 thus health workers must be provided with PPE set to avoid the hesitancy to provide TB service. All over the world there is lack of personal protective equipment which ultimately made barriers in service provision. There is an urgent need to increased support in PPE investment, personnel, supplies, tools as well as innovations in programming to offer quality digital and community-based care in TB program.

To minimize the impact of COVID-19 pandemic on TB and get back on track to achieve the END TB strategy by 2035, government need to take immediate measures for continuity of TB diagnostic, treatment and prevention services during restriction period. Within a short period of time, we must focus on the massive catch up activities in identifying missing cases through scaling up innovative approaches. Due to the pandemic there is high number of missing cases which is foremost important to address. All the missed cases should be catch up and offer with TB treatment. Moreover, involvement of private sectors is critical to end TB thus engaging and mobilizing in TB control program is crucial. Staff responsible to conduct all TB related activities in the local and provincial level need to be well trained.

Campaigns, active and intensified case finding, bi-directional screening/testing for people with symptoms of TB, using Gene xpert need to done. Community/home delivery of medicines, community engagement, multi-month drug dispensing, social protection for high-risk groups including nutritional and psychosocial support through community volunteer should be directed. COVID-19 has overshadowed TB, therefore, education programmes on prevention and treatment remains imperative to stop the spread of TB.

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CONFLICT OF INTEREST

None

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