



TUBERCULOSIS DISEASE IN BAGALKOT DISTRICT - A GEOGRAPHICAL ANALYSIS

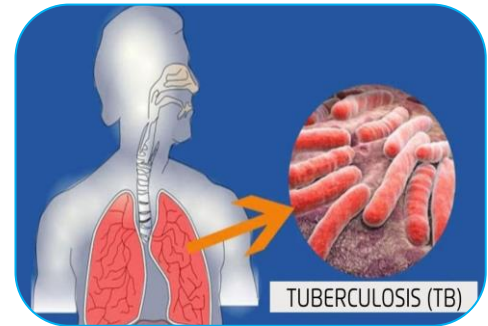
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ABSTRACT :

Tuberculosis (TB) remains a significant public health challenge in Bagalkot district, Karnataka. Considering government and private healthcare institutions, this study analyses the estimated and notified TB cases across six talukas. A total of 4,151 TB cases were estimated in 2023, with 1,984 cases being notified. Jamakhandi taluka recorded the highest number of estimated (1,066) and notified (510) cases, while Bilagi taluka reported the lowest. Private sector reporting varied significantly between talukas, with areas like Bagalkot and Jamakhandi contributing more actively to TB notifications than others such as Badami and Bilagi. The gap between estimated and notified cases suggests underreporting and limited diagnostic reach, particularly in private healthcare settings. Strengthening public-private partnerships, enhancing diagnostic facilities, and increasing awareness are critical for bridging this gap and improving TB control efforts in the district.



KEY WORDS: Tuberculosis, Disease.

1. INTRODUCTION:

Tuberculosis (TB) is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. It primarily affects the lungs but can also impact other parts of the body, such as the kidneys, spine, and brain. TB spreads through the air when an infected person coughs, sneezes, or talks.

Symptoms: Persistent cough, chest pain, coughing up blood, fatigue, fever, night sweats, and weight loss. **Treatment:** TB is treated with a course of antibiotics lasting 6-9 months. Drug-resistant TB strains may require more complex treatment.

TB is a leading infectious cause of death worldwide, particularly in low- and middle-income countries. It is preventable and curable, but drug-resistant forms are a growing public health concern. In countries like India, tuberculosis remains a major challenge, with government programs like the Revised National Tuberculosis Control Programme (RNTCP) working to diagnose, treat, and prevent TB cases through strategies like the Directly Observed Treatment, Short-course (DOTS).

In Bagalkot district, tuberculosis (TB) remains a significant public health issue. The district is part of various state and national efforts, including the Joint Effort for Elimination of Tuberculosis (JEET) 2.0, which is active across multiple districts in Karnataka. This program aims to identify and treat TB cases early, particularly through contact tracing of household members of patients, symptom

screening, and ensuring access to preventive therapy. These efforts help address the latent TB infection (LTBI) burden and improve TB management in Bagalkot and surrounding areas.

Moreover, community-led initiatives and health workers are vital in raising awareness, reducing stigma, and ensuring patients adhere to treatment. Programs like these have improved TB detection rates and the provision of necessary treatments, including free X-rays and counselling for patients and their contacts. However, TB remains a challenge, especially among vulnerable populations like those with HIV, which exacerbates the risk of developing TB.

2. STUDY AREA:

Geographically, the district is situated in the northern portion of the Deccan plateau. From a historical perspective, the Bagalkot district is among the richest districts in the state of Karnataka. from the point of view of history, tradition, and legend. The district lies between 15^o48’ to 16^o46’ north latitude and 74^o 58 to 76^o18’ east longitude. The district is surrounded by six districts, mainly Raichur district in the east, Westside in Belgaum, Gadag and Koppal districts in the south, and north side located in Bijapur district. The district extended 101 km from north to south and 138 km from east to west, covering a geographical area of 6,552.00 sq. km. In relations of area, Bagalkot occupies the 12th place among the districts in Karnataka state. The area is drained by the major important rivers, namely, Krishna, Ghataprabha and Malaprabha, with their leading tributaries and several streams. The district climate is generally dry and healthy. The district received maximum of the rainfall during the rainy season. The district of Bagalkot, which is located in a semi-arid area, has unpredictable rainfall patterns, hot summers, and dry winters. the soil groups are seen in the district, namely Deep black soil, Medium black soil and Mixed red and black soil etc.

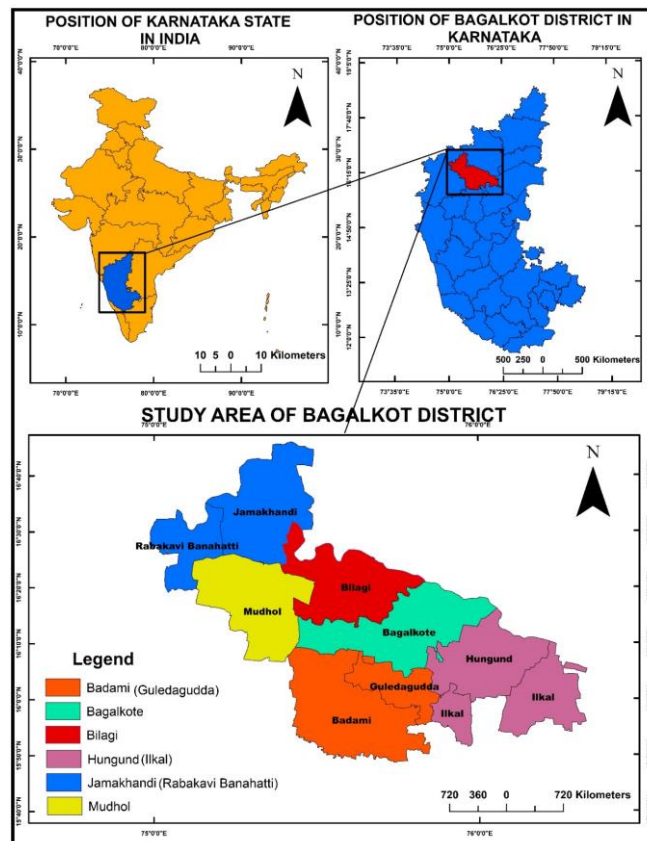


Fig.No.1

3. OBJECTIVES:

The objectives for tuberculosis (TB) control in Bagalkot district (or any district, state, or region) would typically align with the goals of the national TB programs and WHO guidelines. These objectives focus on reducing TB incidence, improving early detection and treatment, and ensuring patient adherence to treatment regimens. For Bagalkot district, the objectives could include:

- Increase TB case notification rates by improving community awareness and screening.
- Enhance diagnostic facilities and ensure availability of resources like GeneXpert for TB diagnosis.
- Ensure that all patients, including those in rural and underserved areas of Bagalkot, have access to quality TB diagnostic and treatment services.

4. METHODOLOGY:

1. A cross-sectional observational study was conducted at a tertiary care hospital in Bagalkot, Karnataka.
2. Data Collection: Data were collected from patient records, including demographic details, clinical presentation (type of tuberculosis, number of skin lesions, nerve involvement), and MDT treatment regimens.
3. Analysis: The data were analysed to determine disease patterns, treatment outcomes, and the prevalence of disabilities and complications at the time of diagnosis.

5. ANALYSIS:

The present study in Bagalkot district, Table No 1 explains that total no of estimated tuberculosis in taluka wise. The district identified estimated tuberculosis about 4151 persons, out of which the 2118 government institution and the private institution accounts for about 2033 persons. Whereas the total no of notified tuberculosis occurred in the district 1984 out of which 1444 in government and 540 in private institution during 2021.

TABLE NO.1 BAGALKOT DISTRICT TUBERCULOSIS CASES 2021

TUBERCULOSIS CASES							
Sl No	Talukas	Total No of Estimated Tuberculosis			Total		
		In Govt Institutions	In Private Institutions	Total	In Govt Institutions	In Private Institutions	Total
1	Badami	376	361	737	269	28	297
		17.75	17.76	17.75	18.63	5.19	14.97
2	Bagalkot	334	321	655	251	211	462
		15.77	15.79	15.78	17.38	39.07	23.29
3	Bilagi	179	172	351	102	18	120
		8.45	8.46	8.46	7.06	3.33	6.05
4	Hunagund	418	401	819	271	61	332
		19.74	19.72	19.73	18.77	11.30	16.73
5	Jamakhandi	544	522	1066	334	176	510
		25.68	25.68	25.68	23.13	32.59	25.71
6	Mudhol	267	256	523	217	46	263
		12.61	12.59	12.60	15.03	8.52	13.26
	Total	2118	2033	4151	1444	540	1984
		100	100	100	100	100	100

- Source:** 1. District census hand book of Bagalkot district i.e. 2001, 2021
2. District at a glance of Bagalkot District i.e. 2001, 2021

A. Total No of Estimated Tuberculosis:

No Of Estimated Tuberculosis in Government Institution: 2021

The distribution of Total No Of Estimated Tuberculosis in Government Institution in the Bagalkot district by taluka in 2021 is exposed in Figure No. 2 and Table No.1 The lowest percentage of tuberculosis (<12.61%) identified was observed in the talukas of Mudhol (12.61%) and Bilagi (8.45%). On the other hand, the Hunagund (19.74%), Badami (17.75) and Bagalkot (15.77%) talukas contained the medium (12.62-19.74%). In the district, the highest (>19.75%) percentage of Estimated Tuberculosis in Government Institution was seen in the talukas of Jamakhandi (25.68).

No Of Estimated Tuberculosis in Private Institution: 2021

Table no 1 and figure No 2 exposed to Total No Of Estimated Tuberculosis in Private Institution in the district of Bagalkot. The lowest percentage of tuberculosis (<12.59%) was observed in the talukas of Mudhol (12.59%) and Bilagi (8.46%). Whereas the medium (12.60%) Estimated Tuberculosis were seen in Hunagund (19.72%), Badami (17.76%) and Bagalkot (15.79%) taluka. In the district, the highest (>19.73%) percentage of Estimated Tuberculosis in Private Institution was seen in the talukas of Jamakhandi (25.68%).

Total No of Estimated Tuberculosis: 2021

Table No 1 and figure No 2 exposed to Total No of Tuberculosis in the district of Bagalkot. The lowest Percentage of total (<12.60%) Tuberculosis was observed in the talukas of Mudhol (12.60%) and Bilagi (8.46%). whereas the medium (12.61-19.73%) percentage of Total No of Tuberculosis were seen in Hunagund (19.73%), Badami (17.75%) and Bagalkot (15.78%) talukas. In the district, the highest (>19.74%) percentage of Total No of Tuberculosis was seen in the talukas of Jamakhandi (25.68%).

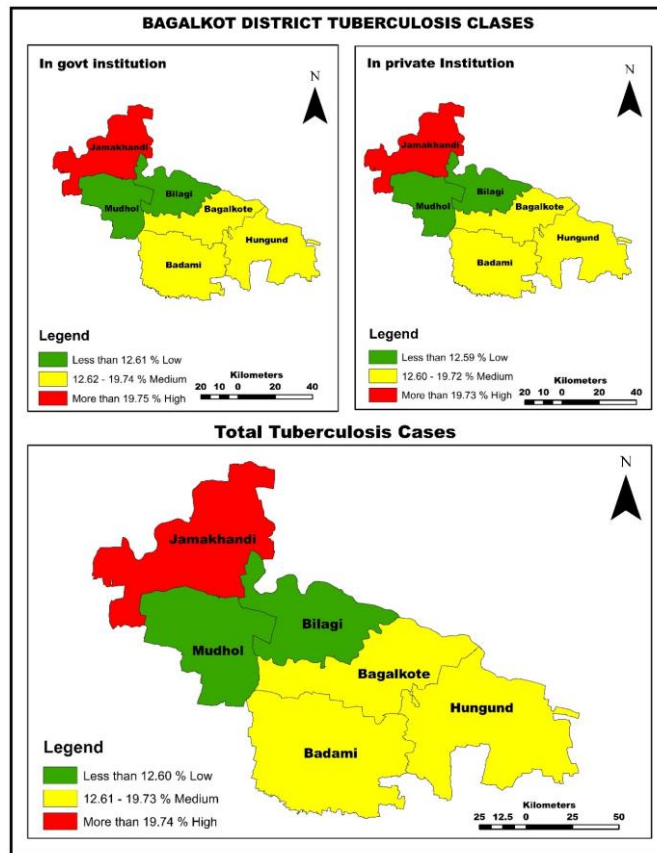


Fig No. 2

B. Total No of Notified Tuberculosis

No Of Notified Tuberculosis in Government Institution: 2021

The distribution of tuberculosis in the study area, the table No 1 Notified Tuberculosis in Government Institution in the Bagalkot district by taluka in 2021 is exposed in Figure No. 3 and Table No.1. The lowest (7.06%) percentage of tuberculosis Notified was observed in only one taluka Bilagi (7.06%). On the other hand, the Hunagund (18.77%), Badami (18.68), Bagalkot (17.38%) and Mudhol (15.05%) talukas contained the medium (7.07-18.77%). In the district, the highest (>18.78%) Percentage of Notified Tuberculosis in Government Institution was seen in the talukas of Jamakhandi (23.13%).

No Of Notified Tuberculosis in Private Institution: 2021

Table No 1 and figure No 3 exposed to Total No Of Notified Tuberculosis in Private Institution in the district of Bagalkot. The lowest percentage of tuberculosis (<5.19%) was observed in the talukas of Badami (5.19%) and Bilagi (3.33%). Whereas the medium (5.20-11.30%) Notified Tuberculosis in private institution were seen in Hunagund (11.30%) and Mudhol (8.52%) taluka. In the district, the highest (>11.31%) percentage of Notified Tuberculosis in Private Institution was seen in the talukas of Bagalkot (39.17%) and Jamakhandi (32.59%).

Total No of Notified Tuberculosis: 2021

Table No 1 and figure No 3 exposed to Total No of Tuberculosis Notified in the district of Bagalkot. The lowest Percentage of total (<6.05%) Notified Tuberculosis was observed in only one talukas namely Bilagi (6.05%). whereas the medium (6.06-16.73%) percentage of Total No of Notified Tuberculosis were seen in Hunagund (16.73%), Badami (14.97%) and Mudhol (13.26%). talukas. In the district, the highest (>19.74%) percentage of Total No of Notified Tuberculosis was seen in the talukas of Jamakhandi (25.71%) and Bagalkot (23.29%).

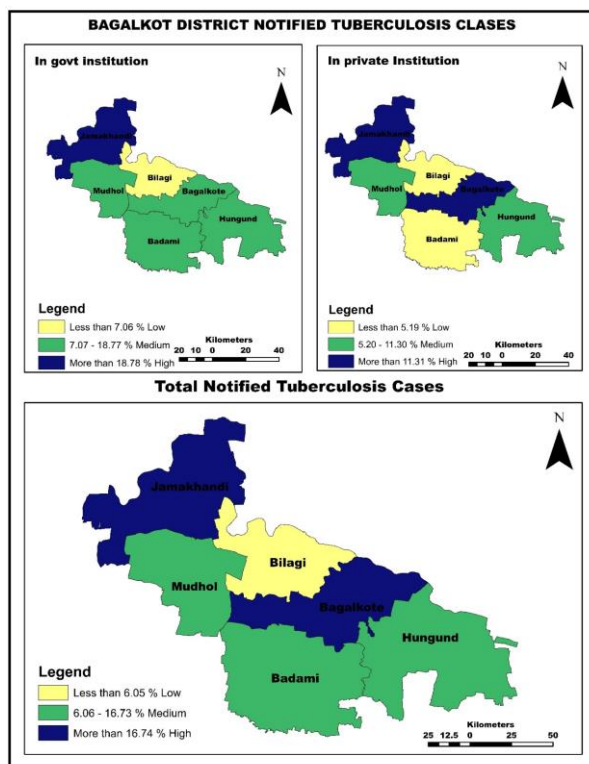


Fig No.3

CONCLUSION:

The data on tuberculosis (TB) in Bagalkot district reveals significant gaps between estimated and notified cases. With 4,151 estimated cases but only 1,984 notified cases, almost half of the cases may be undiagnosed or unreported, pointing to a critical challenge in TB control efforts. Key observations include:

- Jamakhandi taluka contributes the highest number of both estimated and notified cases, suggesting it is a priority area for intervention.
- There is a wide disparity in the contribution of private institutions across talukas. While Bagalkot and Jamakhandi show significant case reporting from private institutions, talukas like Badami and Bilagi lag in private sector notifications, indicating underreporting or gaps in engagement with private healthcare providers.
- Government institutions remain a critical source for TB notification, especially in talukas like Hunagund and Jamakhandi.

Addressing the gap between estimated and notified cases requires enhancing TB screening, diagnostic services, and reporting mechanisms, particularly in areas where private institutions are less involved. Strengthening collaboration between government and private healthcare providers, along with awareness campaigns, will be crucial in improving TB case detection and reporting across the district.

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