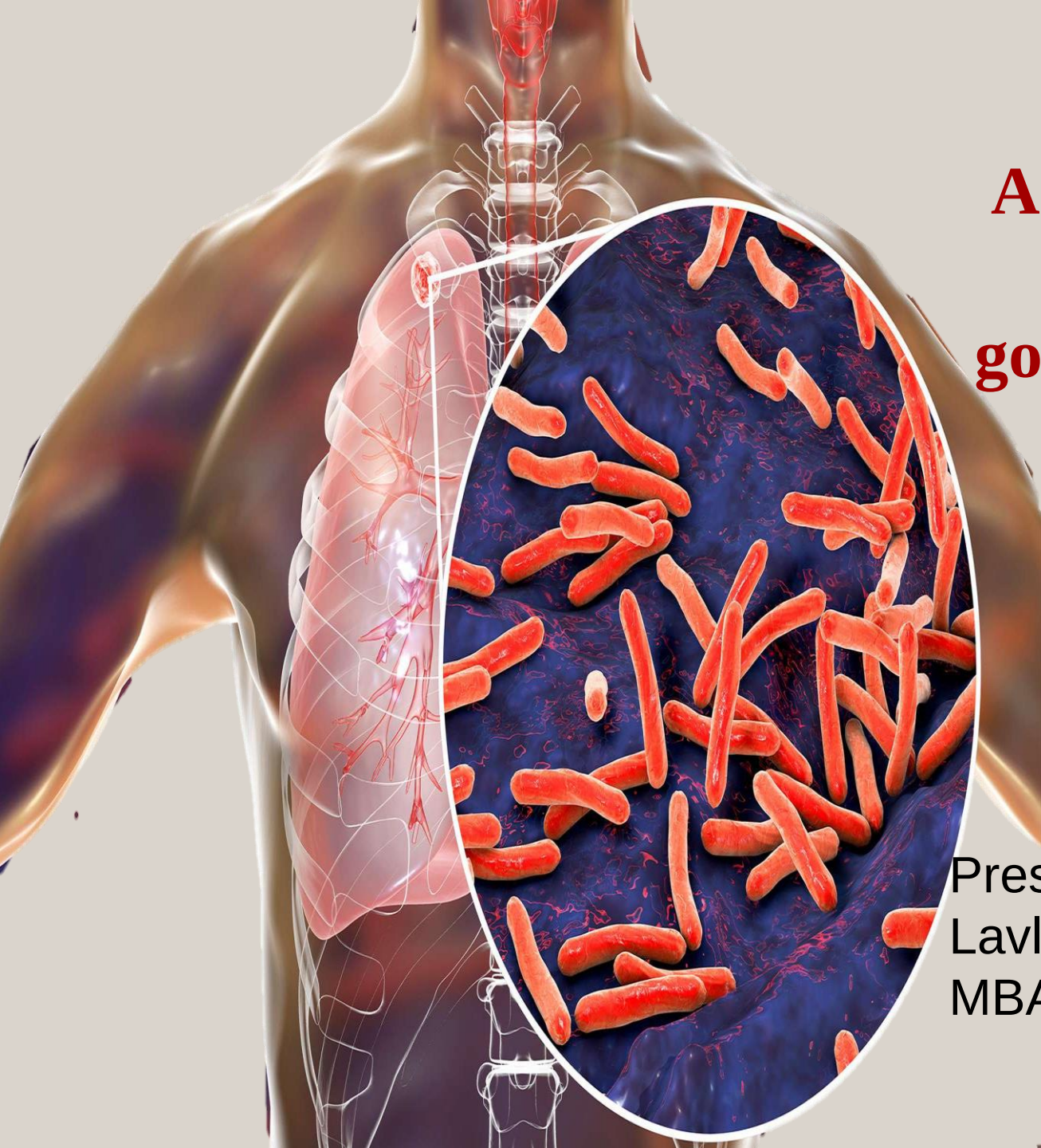




Assessing public comprehension of the tuberculosis spectrum and government initiatives in East Delhi :an in- depth analysis

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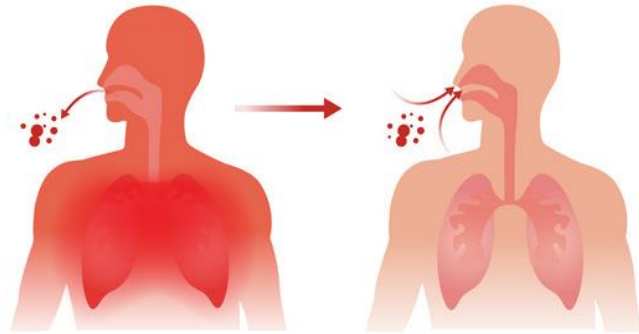
What is Tuberculosis

- Tuberculosis (TB) is a bacterial infection that usually affects the lungs, but can also affect other parts of the body. It is a **communicable disease** that is a major cause of ill health and one of the leading causes of death worldwide. Until the coronavirus (COVID-19) pandemic, TB was the leading cause of death from a single infectious agent, ranking above HIV/AIDS.
- TB is caused by the bacillus **Mycobacterium tuberculosis**, which spreads when people who are sick with TB expel bacteria into the air (e.g. by coughing). About a quarter of the global population is estimated to have been infected with TB , but most people will not go on to develop TB disease and some will clear the infection.
- Of the total number of people who develop TB each year, about **90%** are adults, with more cases among men than women. The disease typically affects the lungs (pulmonary TB) but can affect other sites as well.

Cause and transmission

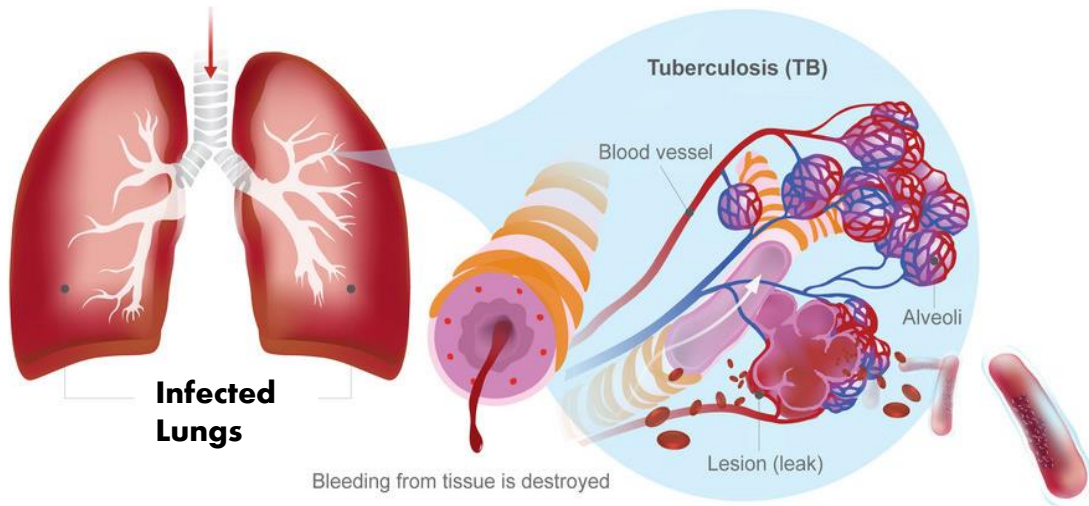


**Mycobacterium
Tuberculosis Bacteria**



**Tuberculosis
Patient**

Get Tuberculosis



**Infected
Lungs**

Tuberculosis (TB)

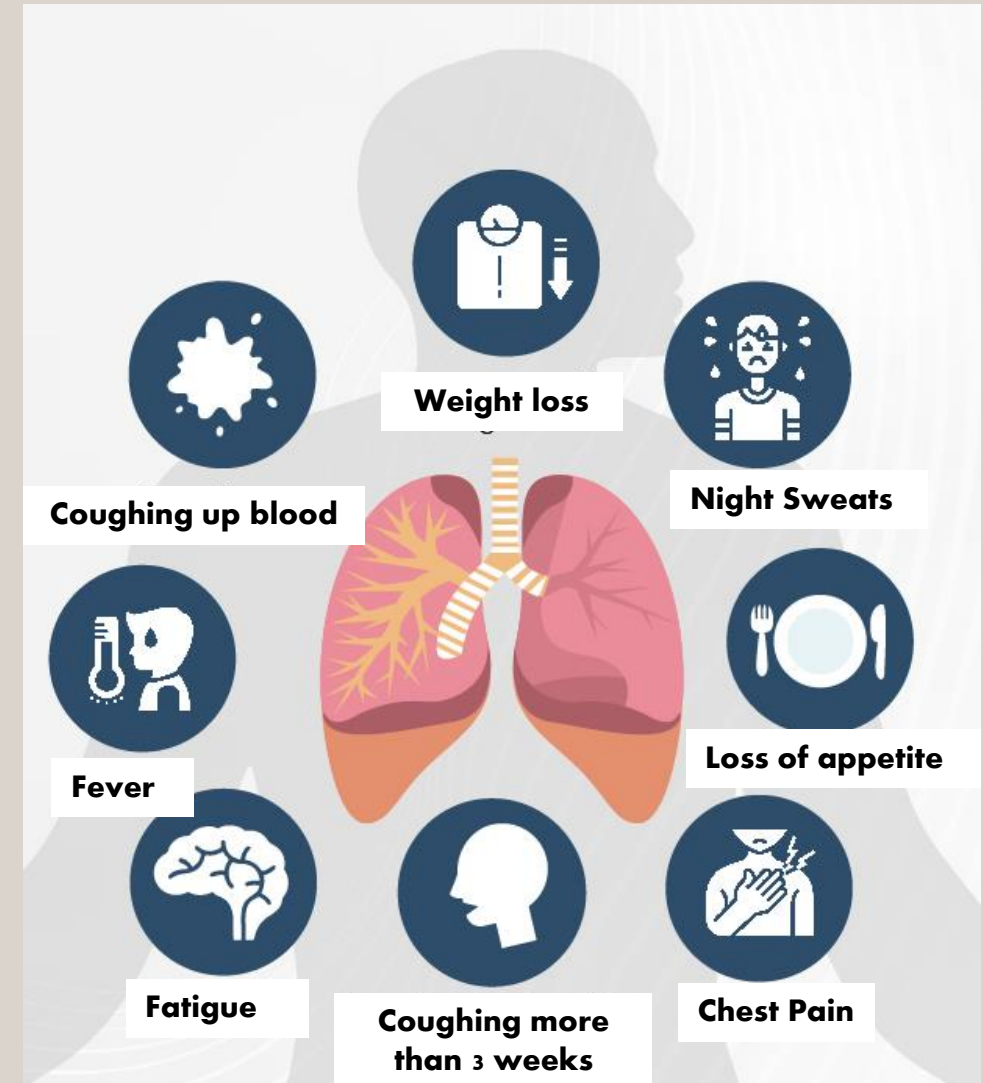
Blood vessel

Alveoli

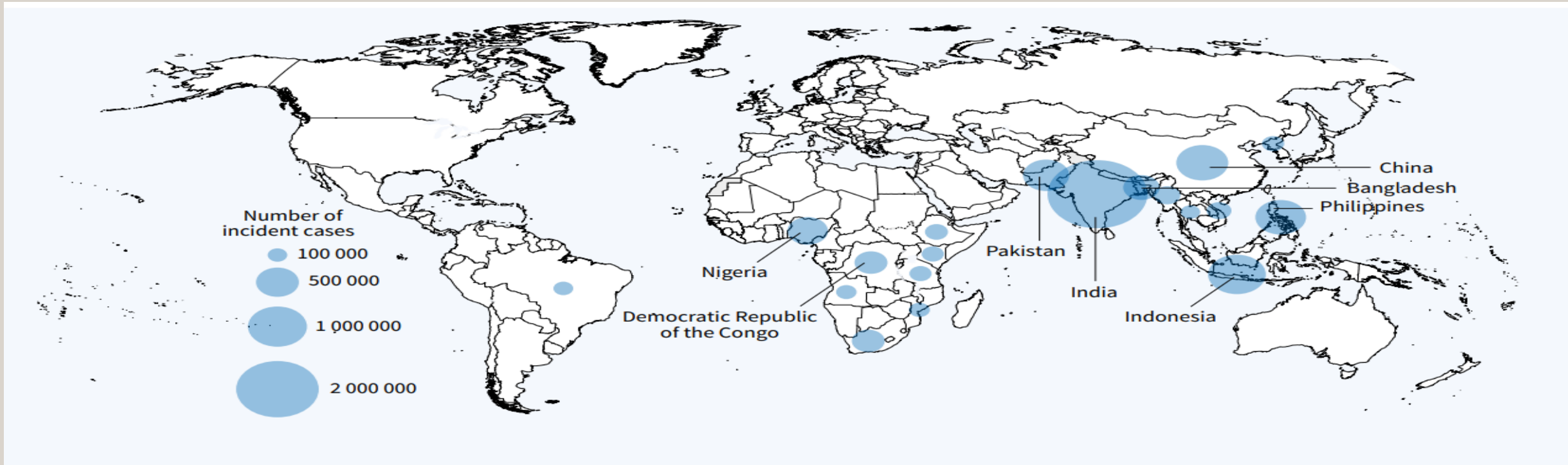
Lesion (leak)

Bleeding from tissue is destroyed

Symptoms of TB

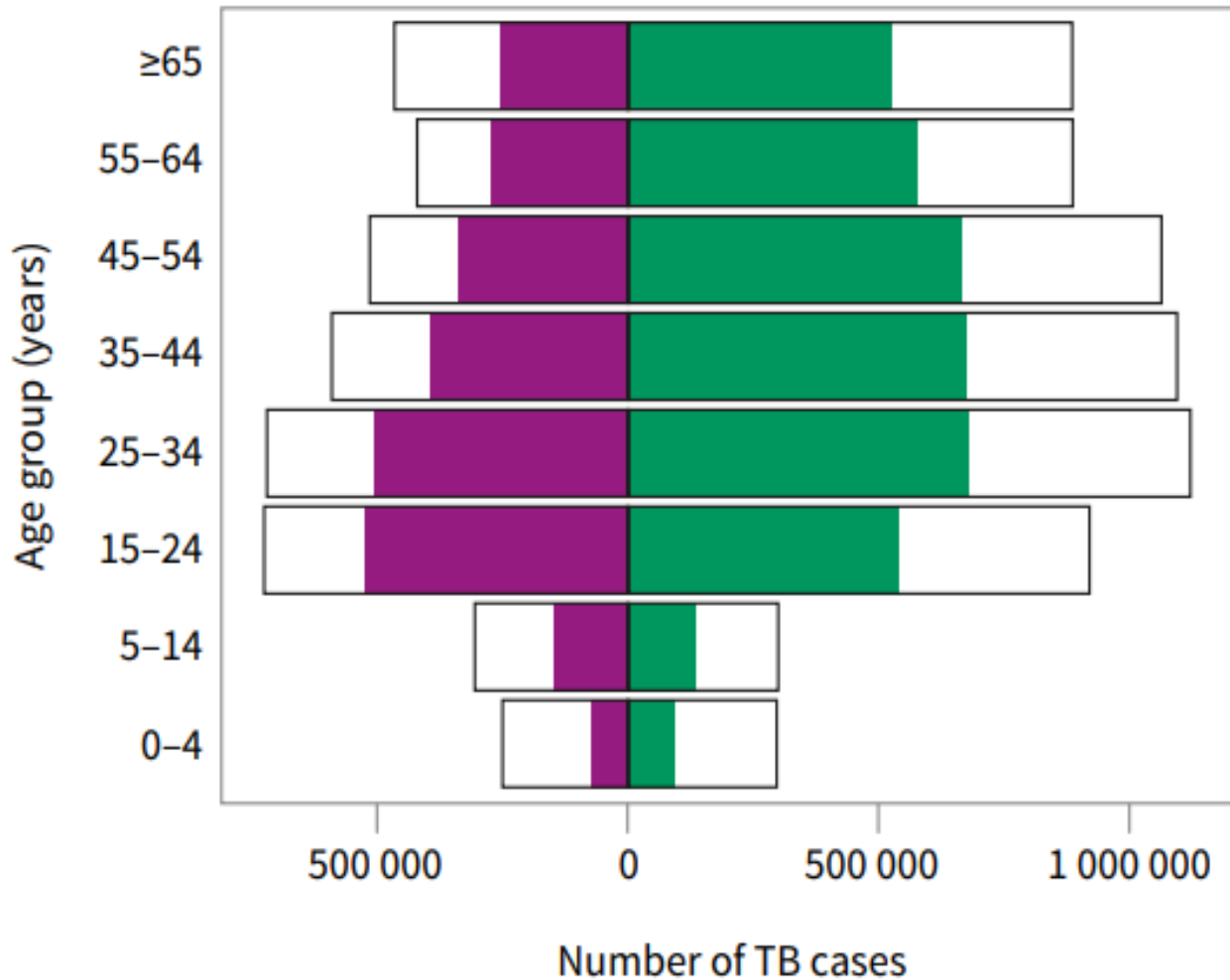


Tuberculosis a global health concern



Estimated TB incidence in 2021, for countries with at least 100 000 incident cases The countries that rank first to eighth in terms of numbers of cases, and that accounted for about two thirds of global cases in 2021, are labelled.

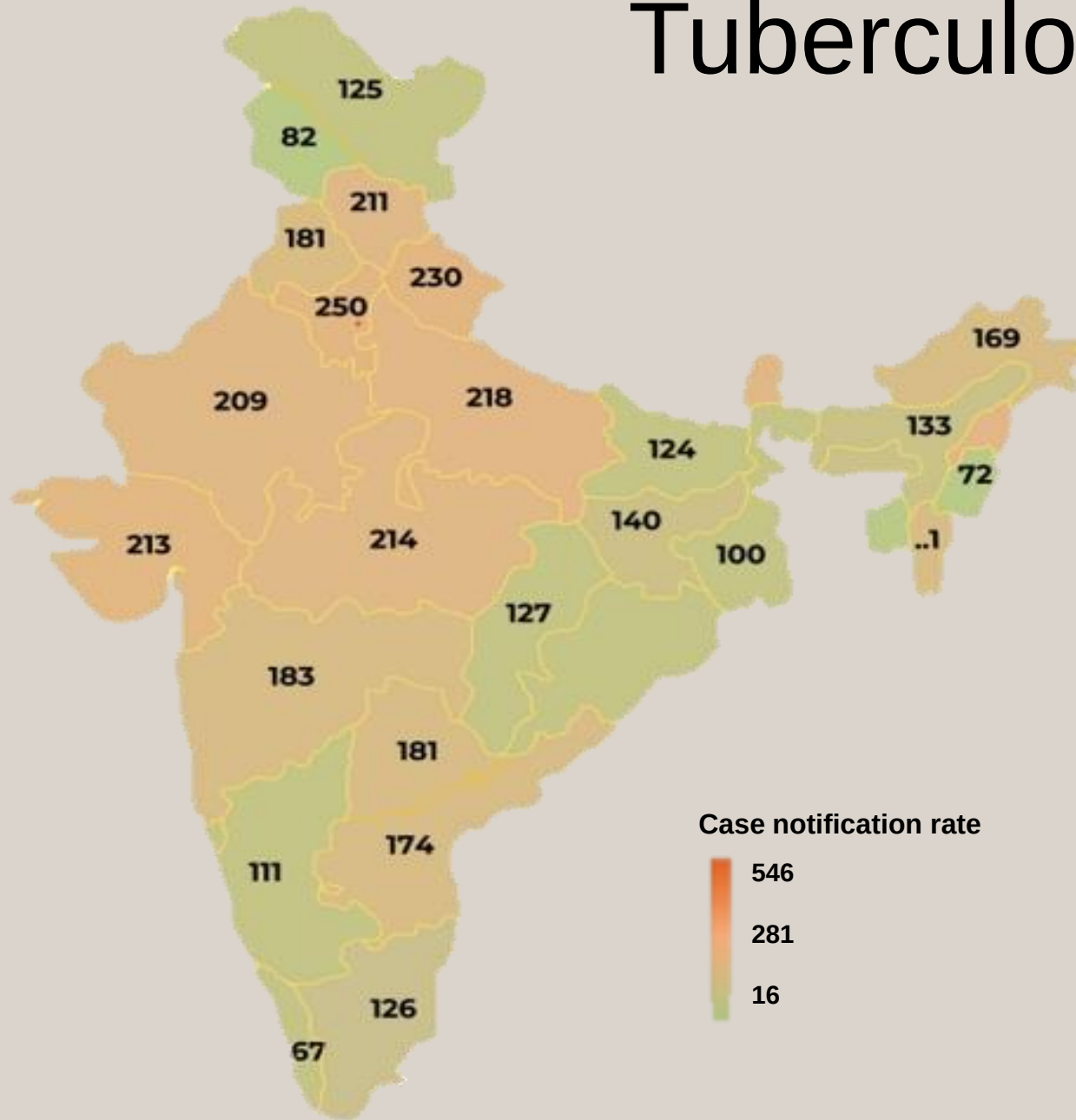
- ❑ An estimated 10.6 million people fell ill with TB worldwide in 2021, an increase of 4.5% from 10.1 million in 2020, reversing many years of slow decline,
- ❑ Similarly, the TB incidence rate is estimated to have increased by 3.6% between 2020 and 2021, following declines of about 2% per year for most of the past 2 decade.
- ❑ The major contributors to the global increase between 2020 and 2021 were **India, Indonesia and the Philippines**. Collectively, TB incidence rose by about 0.4 million in these three countries. This is consistent with their contributions to global reductions in the reported number of people newly diagnosed with TB in 2020 and 2021



Global estimates of TB incidence (black outline) and case notifications of people newly diagnosed with TB disaggregated by age and sex (female in purple; male in green), 2021

- ❑ TB can affect anyone, regardless of age or sex.
- ❑ The highest burden is in adult men, who accounted for 56.5% of all TB cases in 2021; by comparison, adult women accounted for 32.5% and children for 11% of cases.
- ❑ The higher share of TB cases among men is consistent with evidence from national TB prevalence surveys, which show that TB disease affects men more than women, and that gaps in case detection and reporting are higher among men.

Tuberculosis in India



State wise TB case notification rate for 2022

- ❑ India, as the most populous country in the world, faces immense challenges in combating TB due to its large population and diverse socio-economic factors.
- ❑ The country contributes to **more than 28 percent** of the global TB burden , highlighting the magnitude of the problem within its borders.
- ❑ In 2022 alone, it was estimated that India had around **24.20 lakh new TB cases**, an increase of over 13% as compared to 2021.
- ❑ This translates to a case notification rate of approximately 172 cases per lakh population
- ❑ India accounts for over **36% of all tuberculosis** fatalities worldwide , highlighting how serious the issue is.
- ❑ The treatment initiation rate among the notified cases for 2022 was 95.5%. The highest case notification rate among States was seen in **Delhi (546 per lakh population)** and the lowest among States was seen in Kerala (67 per lakh population)

Review of Literature

Sr. No.	Title	Methodology	Findings
1.	Knowledge and transmission risk awareness of tuberculosis among the pilgrims attending a religious mass gathering in India: a cross-sectional study (Tim Backdahl , Megha Sharma)	This cross-sectional study evaluated pilgrims' knowledge about tuberculosis (TB) at the 2016 Kumbh Mela in Ujjain, India, using a pre-tested questionnaire. Data was gathered at four key locations by trained personnel using convenience sampling.. Statistical tests comparing knowledge across demographic groups were made possible by descriptive statistics and a composite knowledge-score.	94% of the 1665 pilgrims who participated in the poll recognised "Cough for more than 15 days with sputum" and 81% recognised "Blood in sputum" as indicators of tuberculosis. Just 4% of respondents were aware that TB is contagious, despite the fact that 93% understood this. Knowledge was highly influenced by education, with people who had completed at least 10 years of schooling rating higher on TB awareness
2.	Level of awareness about tuberculosis in urban slums: Implications for advocacy and communication strategy planning in the National program (Palanivel Chinnakali, Jayalakshmy Ramakrishnan, Kavita Vasudevan, Jayanthi Gurumurthy,Ravi P. Upadhyay, Krishna C. Panigrahi)	A cross-sectional study involving the community was carried out in the Puducherry district's urban slum, Vaithikuppam. Researchers evaluated participants' knowledge, attitudes, and behaviours (KAP) regarding tuberculosis (TB) using a pretested, structured interview schedule. Home to home visits were used to collect the data, and 415 households were contacted for interviews.	395 households in all were interviewed. Of them, 370 (94%) had heard of tuberculosis. About TB symptoms, 82% of respondents knew that coughing is one of them. Sputum examination was only known to be a method of diagnosis by 40% of the 79% of research participants who reported having undergone any testing to diagnose tuberculosis. That being said, 84% of the participants knew of the free TB treatment offered by the national programme.

Sr. No.	Title	Methodology	Findings
3.	Awareness and perception regarding tuberculosis among patients and their relatives attending a tertiary care hospital in Uttarakhand: A hospital-based exploratory survey (Suresh K. Sharma, Prasuna Jelly, Ajeet S. Bhadoria, Kalpana Thakur, and Kanchan Gawande)	An exploratory study measuring knowledge and views about tuberculosis was carried out among 1,000 patients and their families at AIIMS, Rishikesh. Convenience sampling was used to choose the participants. A systematic 41-question interview evaluated views, knowledge, and demographics related to tuberculosis	A total of one thousand individuals were participated in the study, with a mean age of 40.2 ± 9.6 years and 51% females. Research participants exhibited the highest level of knowledge (61.85%) with respect to signs and symptoms, with the element of tuberculosis prevention and treatment receiving the second-highest scores (52.7%). Just 51.5% of respondents were aware of its causal relationship, though. 54.8% was the result for overall knowledge. Fifty-seven percent of the participants disagreed that tuberculosis is a serious health issue .
4.	Awareness and perception about tuberculosis in the general population of Delhi (N Sharma , R Malhotra, D K Taneja, R Saha, G K Ingle)	Using multistage stratified systematic sampling, a study was carried out to evaluate the awareness and perception of tuberculosis among 1008 people residing in Delhi. Information on TB knowledge and perceptions was gathered through interviews with participants using a pre-tested proforma. .	99.1% of people had heard of tuberculosis (TB), and 89.2% were aware that it was contagious. The majority were aware of the proper mode of transmission (71.8%) and recognised cough as a symptom (90.1%). 98.2% of respondents said that TB could be avoided, mostly with treatment. Nonetheless, certain answers revealed enduring stigma, including the conviction that hospitalising patients or separating utensils is a good idea. Knowledge gaps draw attention to the need for improved public education.

Sr. No.	Title	Methodology	Findings
5.	Awareness of Tuberculosis and RNTCP among Interns at a Tertiary Care Hospital in Goa (Mahika Virendra Naik, Anika Anil Prabhu Parrikar, Jagadish Anil Cacodcar)	Ninety medical interns participated in a cross-sectional study that used a self-administered, semi-structured questionnaire with thirty questions. The 30-minute survey was performed between July and September of 2019.	Of the 23–25 year old interns, 56.6% were female. Knowledge of HIV-TB and drug-resistant TB was lacking, despite the fact that 98.8% of respondents correctly recognised the primary symptom of TB and 90% recognised the need of DOTS centres in TB control. Nobody possessed any prior RNTCP training.
6.	Prevalence of self-reported tuberculosis, knowledge about tuberculosis transmission and its determinants among adults in India: results from a nation-wide cross-sectional household survey (Chandrashekhart T Sreeramareddy, H N Harsha Kumar, John T Arokiasamy)	In 2005–2006, the India Demographic and Health Survey underwent a secondary study that looked at self-reported tuberculosis, its transmission, and its curability. The dependent variable was correct knowledge of tuberculosis transmission, while the explanatory variables included affluence, education, media exposure, and the curability of tuberculosis. Determinants of accurate knowledge without misconceptions were found using univariate and multivariate analyses that were corrected for complex sampling design using national weighting factors. . .	According to data from a survey of 198,718 individuals (91.6%) and 109,070 households (93.5% response rate), the prevalence of self-reported tuberculosis was 4.60 per 1,000 participants and 445 per 100,000 residents. 55.5% of the 177,423 respondents who were aware of tuberculosis knew the proper mechanism of transmission, while 29.7% had no doubts. Those who knew that tuberculosis is curable, men, Muslims, Hindus, and radio listeners were more likely to have accurate knowledge. Commonly held myths included touching a patient with tuberculosis (18.2%), sharing utensils (32.4%), and transmission through food.

Methodology

Research Questions

1. What is the current level of public awareness regarding the symptoms, transmission, and prevention of tuberculosis?
2. How effective are various government communication methods in disseminating essential information about tuberculosis to the public?
3. To what extent is the public aware of the different government initiatives aimed at combating tuberculosis?

Objectives

1. To measure the public's awareness of various aspects of tuberculosis, including knowledge of symptoms, transmission, and prevention.
2. To assess the clarity and effectiveness of different government communication methods, in disseminating essential information about tuberculosis to the public.
3. To evaluate public awareness of the different government initiatives aimed at combating tuberculosis.

Study design-

Descriptive Cross – sectional study

Study setting-

In a mall located in East Delhi

Population study

Population of East Delhi using non-probability convenience sampling, targeting both male and female participants aged 15 to 50 years old.

Study tool-

Structured Questionnaire

Duration of study-

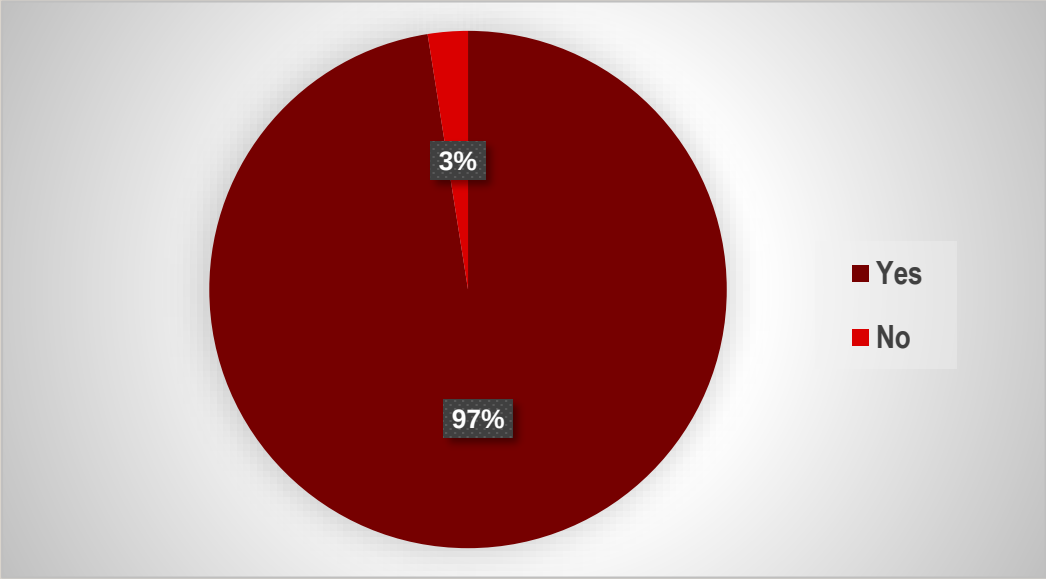
3 months from April to June

**Sample size &
technique-**

200 respondents, Non Probability convenience sampling

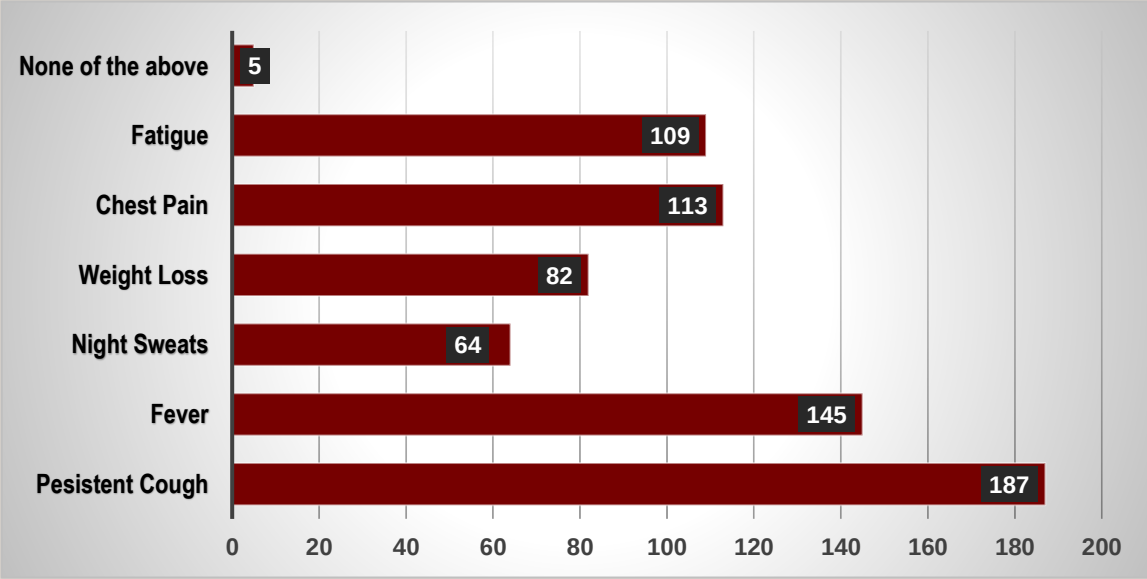
RESULTS AND DISCUSSION

Percentage of people who have heard about tuberculosis



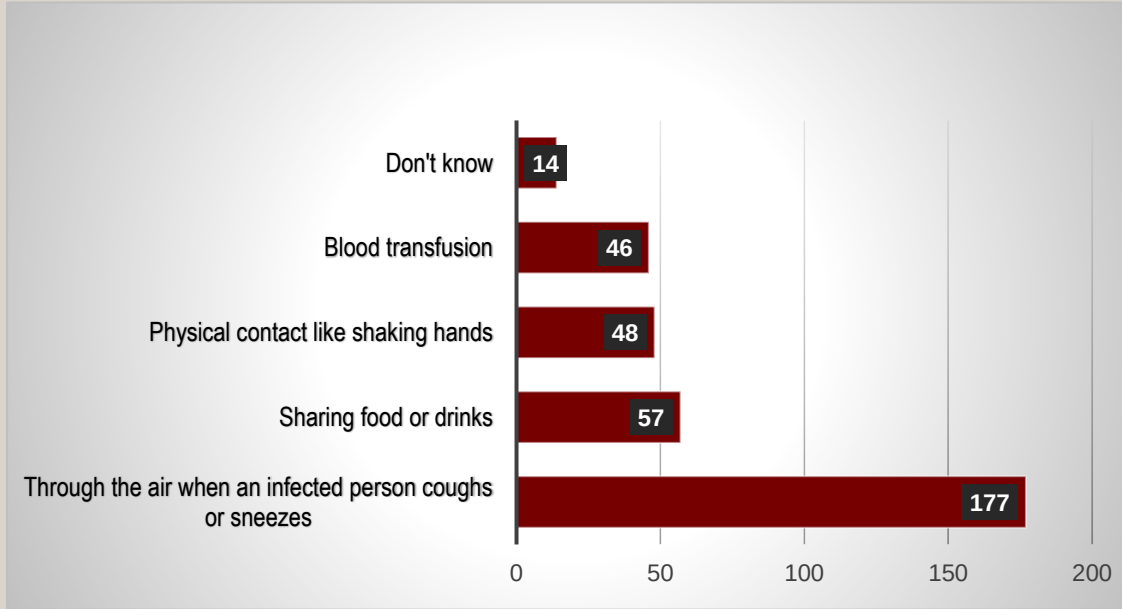
The pie chart illustrates an overwhelming majority that is 195 out of 200 individuals, or 97%, are aware of tuberculosis. The fact that such a large proportion of the population is informed about tuberculosis suggests that Government measures are having a positive impact. Awareness is a crucial first step in the fight against tuberculosis, as it encourages people to seek timely medical help, reduces the stigma associated with the disease, and promotes healthier behaviours.

Awareness level on TB symptoms



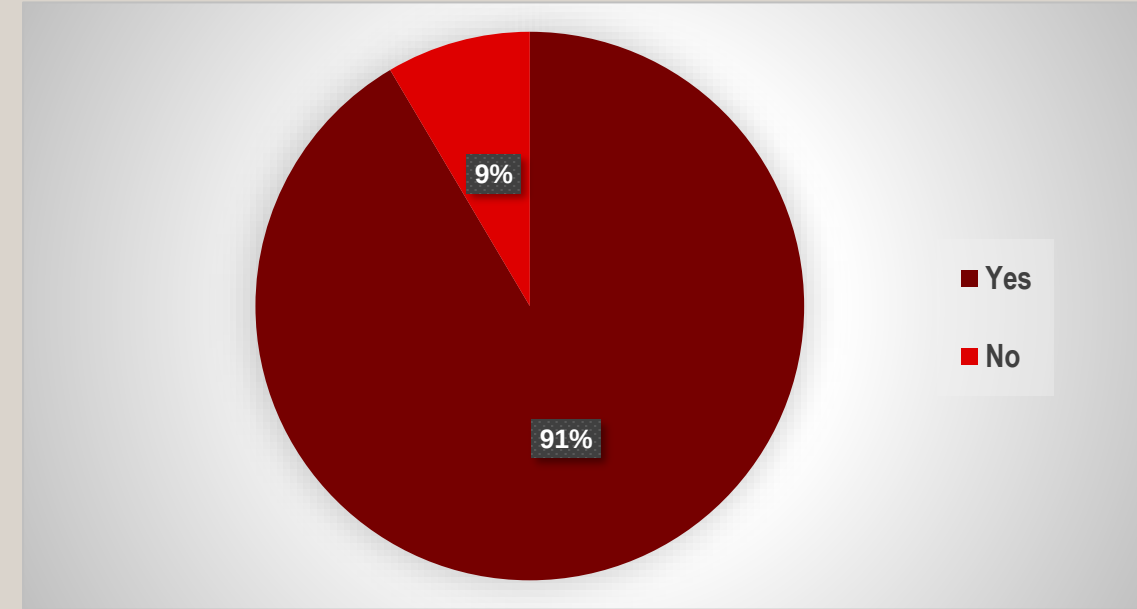
Persistent cough emerges as the most recognized symptom, with a significant majority (93.5%) of respondents identifying it correctly. **Fever**, though commonly associated with infections, is identified by 68% of respondents, indicating a moderate level of awareness. Following persistent cough and fever, **chest pain** and fatigue almost have the same level of awareness among respondents that is 57% and 55% respectively, indicating that roughly half of the respondents are aware of these symptoms.

Awareness about TB Transmission



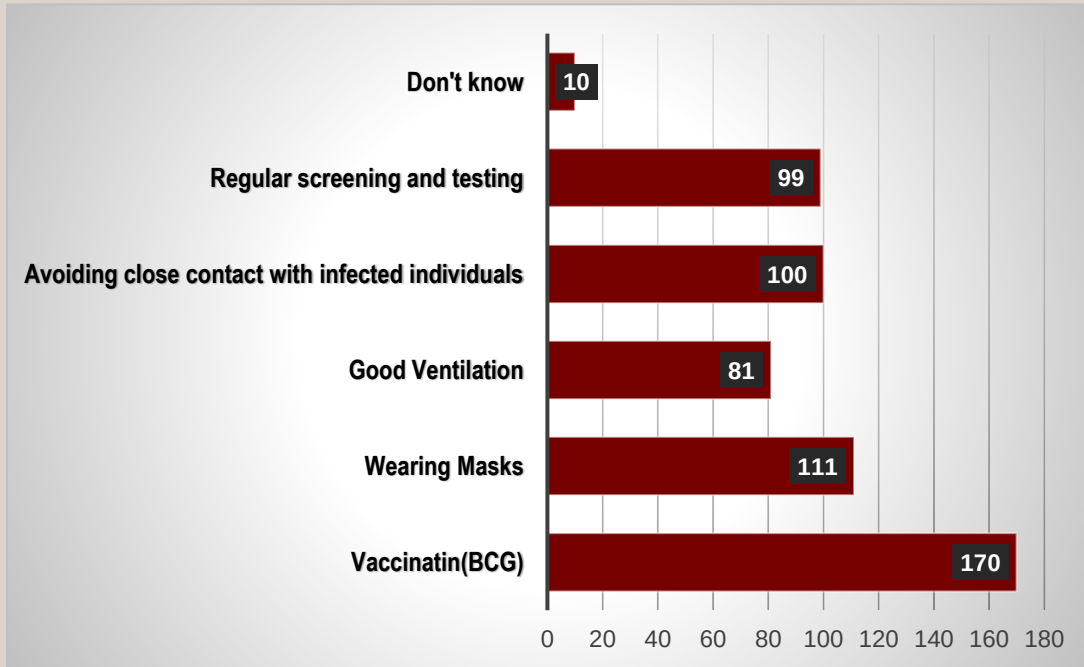
The majority of respondents, 89%, correctly identified that TB is primarily transmitted **through the air when an infected person coughs or sneezes**. The common misconception about the transmission were “**Sharing food**”(28.5%) and “**Touching a person having TB**”(24%). Interestingly, a significant portion of respondents, 23%, incorrectly identified **blood transfusion** as a mode of TB transmission. This misconception likely arises from a lack of understanding of TB's transmission dynamics, as TB bacteria primarily affect the lungs and respiratory system and are not typically transmitted through blood transfusion.

Awareness about TB prevention



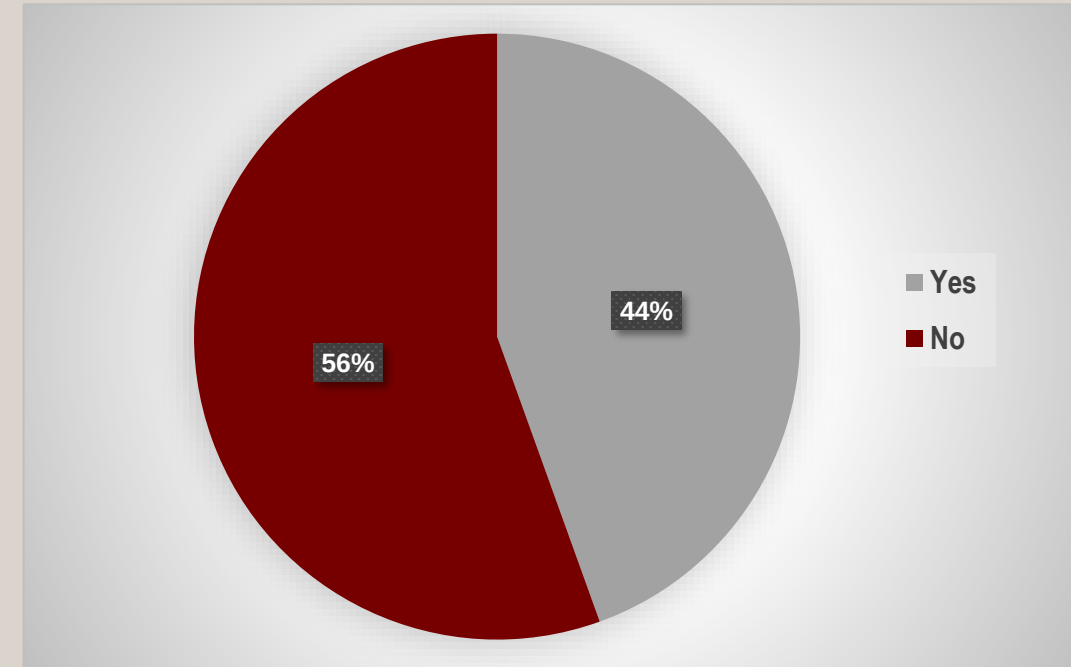
The majority of respondents (91%) correctly identified that tuberculosis (TB) can be prevented. However, a small percentage (9%) responded "No" to this question, indicating a misunderstanding or lack of awareness about TB prevention measures, suggesting a need for improved education and awareness regarding TB prevention strategies within the population surveyed. Overall, the results indicate generally good awareness of TB prevention, but there is room for improvement in addressing misconceptions and increasing knowledge about preventive measures.

Awareness on different modes of TB prevention



The majority of respondents, 85%, correctly identified **vaccinations** as a preventive measure against TB. Additionally, a significant proportion of respondents recognized other preventive measures. **Fifty six percent** (56%) of respondents selected wearing masks as a preventive measure. Around 50% identified **avoiding close contact with infected persons and regular screening and testing** as a preventive strategy, reflecting an understanding of the contagious nature of TB and the importance of regular screening, 41% recognized the importance of **good ventilation** in preventing TB transmission, which helps to reduce the concentration of infectious droplets in enclosed spaces.

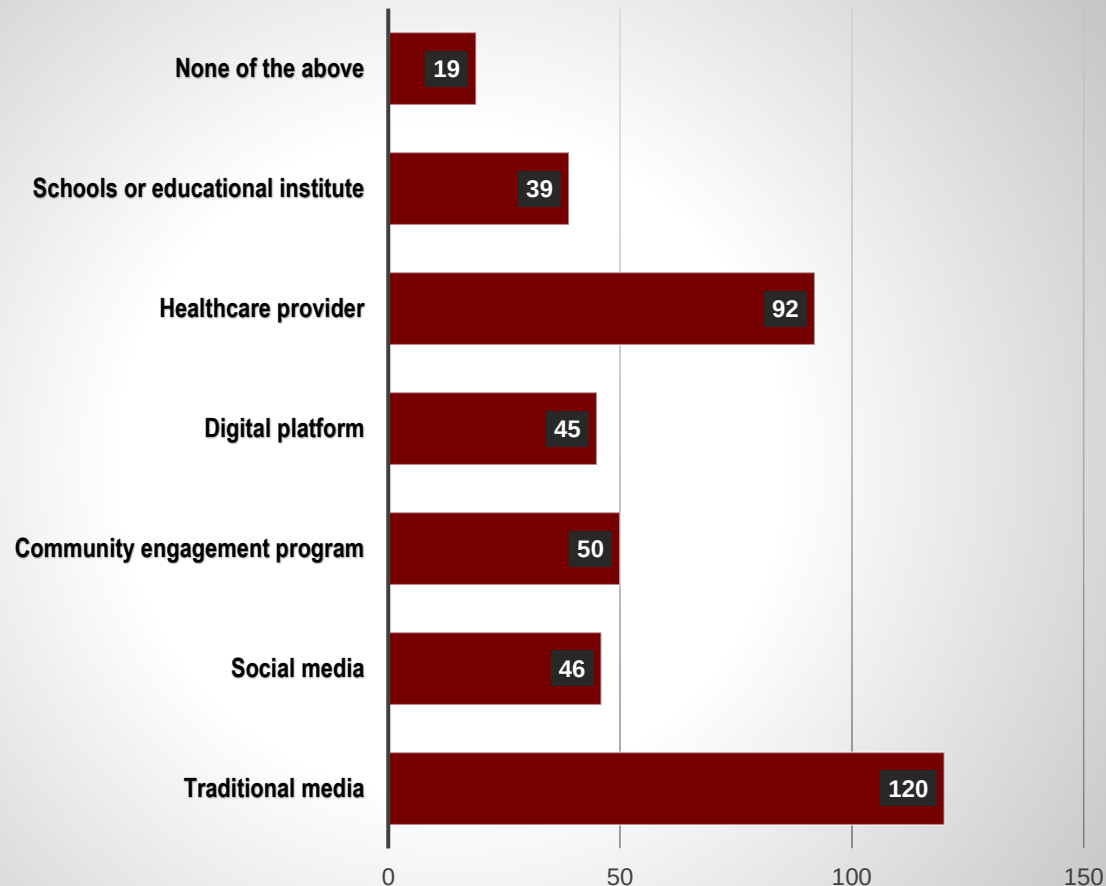
Awareness about DOTS Centres



The survey results paint a concerning picture. While nearly half (44%) of respondents are **aware of DOTS centres**, a much larger portion (56%) remains unaware. This lack of awareness likely translates to a significant gap in knowledge about TB treatment itself.

COMMUNICATION STRATEGY

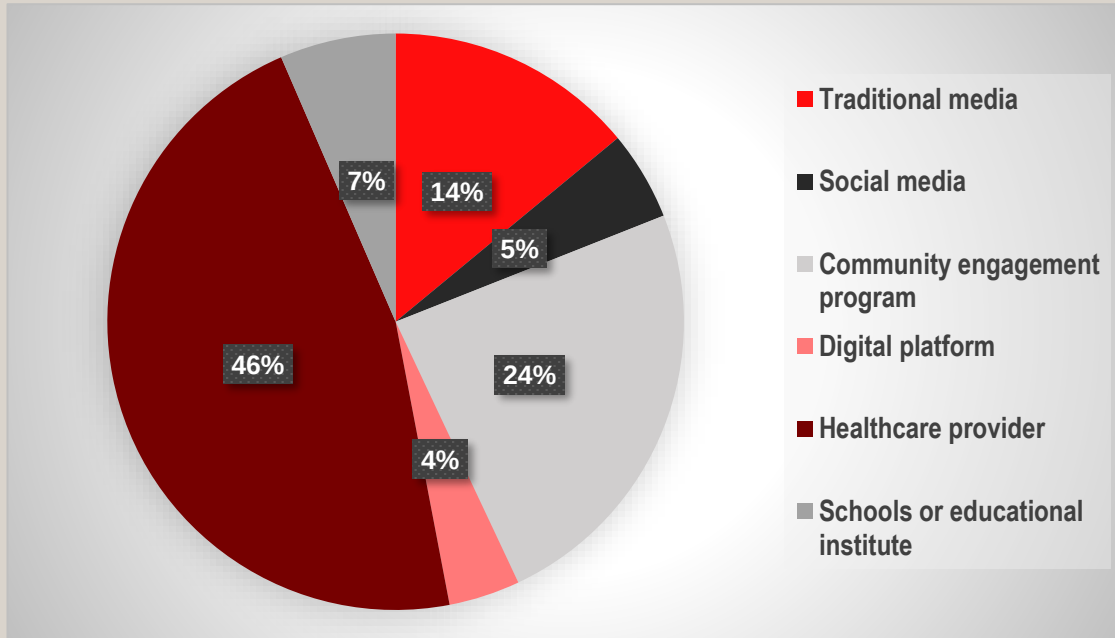
Sources from which people are receiving information about TB



- Traditional media- TV, Radio, newspaper
- Social media- Facebook , Twitter, Instagram
- Community engagement program-Workshops, Seminars
- Digital platform-Websites, mobile apps

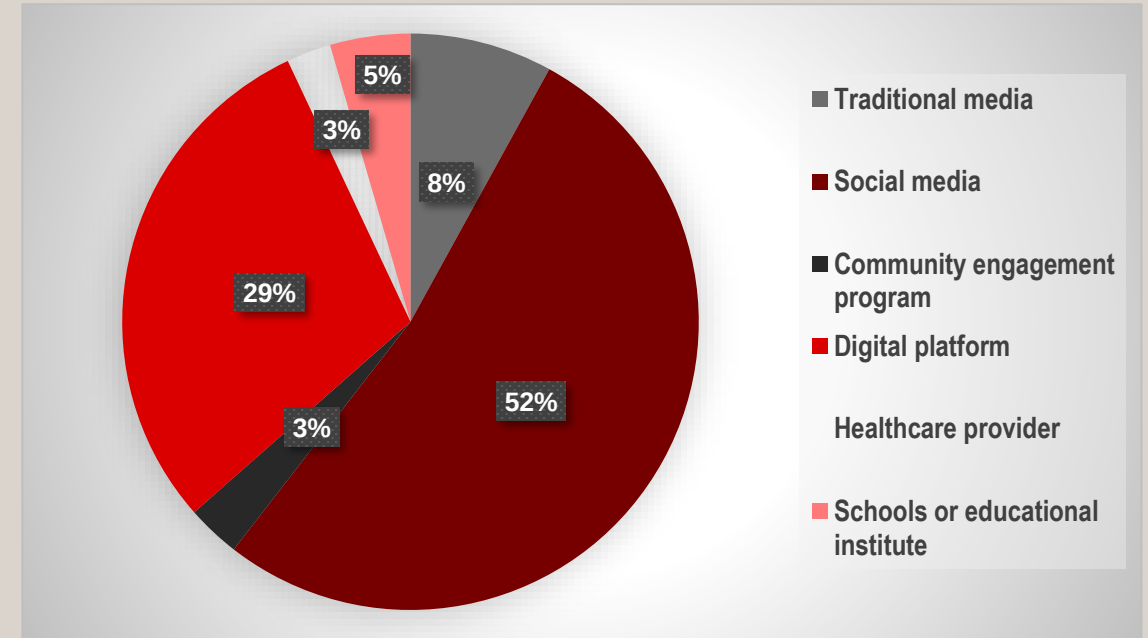
The graph's data offers insightful information on how individuals find information about tuberculosis and highlights the efficacy of various channels in raising awareness. As the principal information medium, **traditional media** is cited by 60% of respondents, making it a prominent source. This demonstrates the continued impact of print, radio, and television media in disseminating health-related messages to a broad audience. Since 92 respondents depend on **healthcare experts** for information, it is evident that these professionals are trustworthy and easily accessible when it comes to teaching the public about tuberculosis.

Source with most clarity



The data reveals that **healthcare providers** are the most significant source of TB information, with 93 individuals, that is almost 50% relying on them. This underscores that people tend to trust healthcare providers due to the face-to-face nature of interactions, which allows for a two-way conversation where individuals can ask questions and receive personalized responses. **Community engagement programs** are the second most comprehensive source, with 48(24%) individuals relying on this source

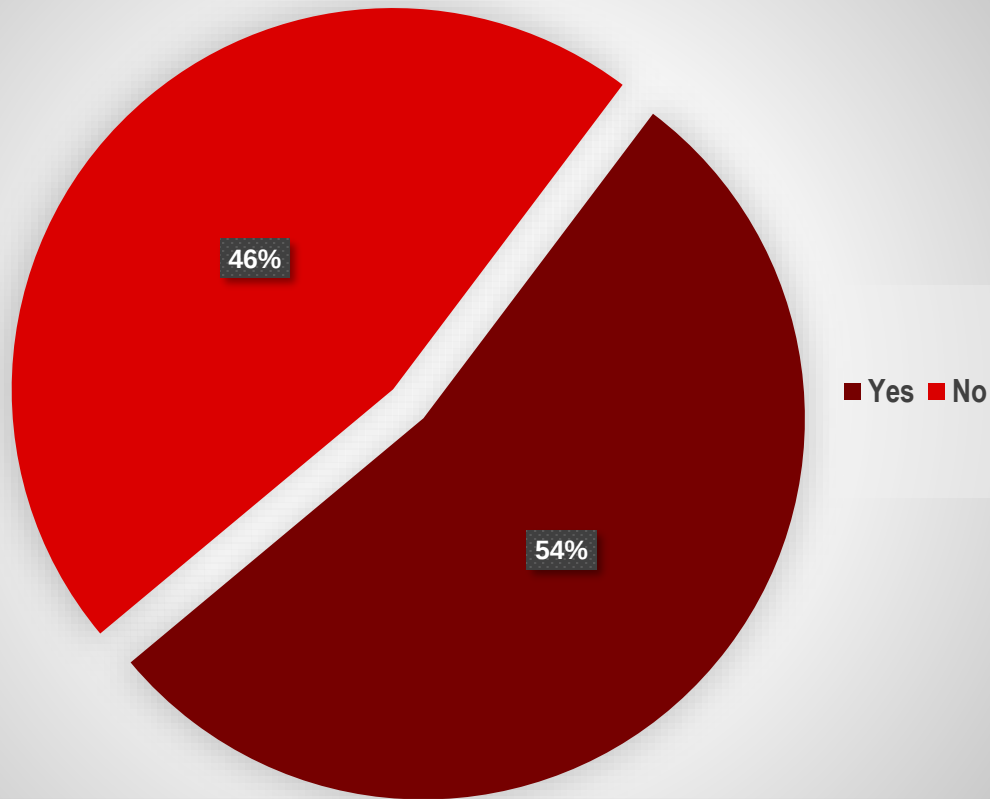
Source with least clarity



According to the graph, 105 individuals identify **Social media** as the platform with the least clarity regarding tuberculosis information. This is attributed to the prevalence of myths and misconceptions on social media, which often confuse individuals about what information to trust. In contrast, 29% of respondents believe that **Digital platforms**, ranked second in terms of clarity, primarily provide one-way information without adequate opportunities for people to seek clarifications or ask questions.

AWARENESS ABOUT GOVERNMENT INITIATIVES

Percentage of people who have heard about the government initiatives on TB

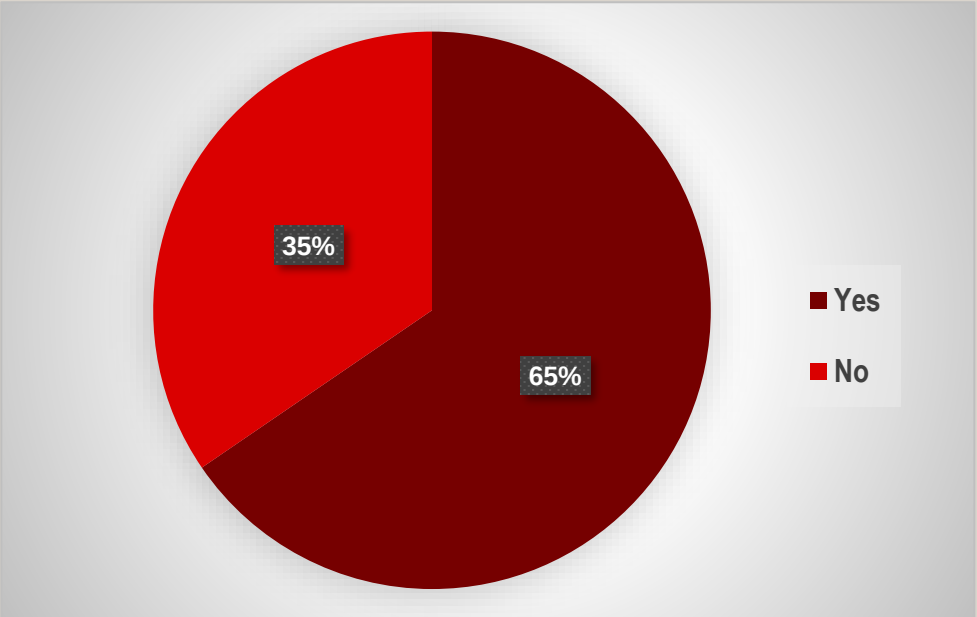


Out of 200 respondents surveyed, 110 individuals **are aware** of the government initiatives on tuberculosis, while 46% **remain unaware**. This data suggests a mixed level of awareness among the population regarding governmental efforts to combat tuberculosis. The significant number of respondents who are unaware underscores potential gaps in communication or outreach strategies by health authorities. Strengthening awareness campaigns and improving accessibility to information about tuberculosis initiatives could help bridge these gaps and enhance public engagement in disease prevention and control efforts.

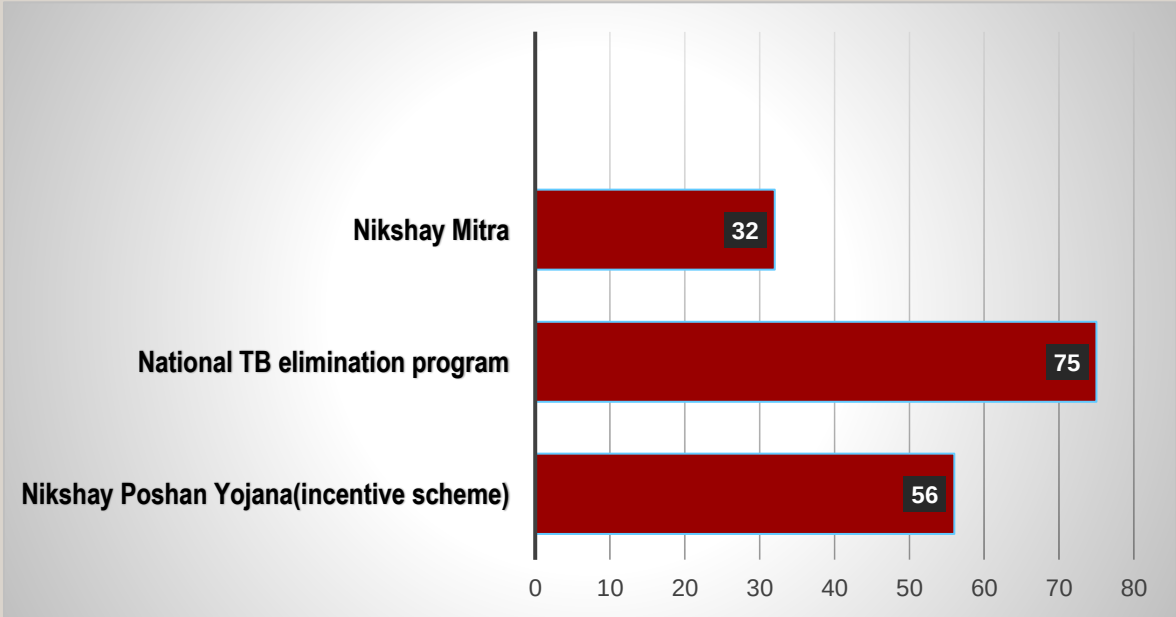
Although 110 respondents are aware of various government efforts, only 65% know about the provision of free diagnosis and treatment under the **National TB Elimination Program**. This gap suggests a need for more targeted and effective communication strategies to ensure that individuals are fully informed about the services available to them.

Moreover, the awareness of other significant initiatives, such as the Nikshay Poshan Yojana and the Nikshay Mitra initiative, is notably low. Only 56 respondents knew about the Nikshay Poshan Yojana, which provides a ₹500 incentive for nutritional support, and just 32 were aware of the Nikshay Mitra initiative. These low awareness levels indicate that many patients might not be benefiting from these critical programs due to a lack of information

Percentage of people who are aware of the free diagnostics and treatment given by government.



Awareness about different initiatives



CONCLUSION

- ❑ In summary, successful public health campaigns and educational initiatives have played a significant role in the remarkable level of public knowledge about tuberculosis (TB).
- ❑ But myths about how it spreads—like the false notion that it may transmit through handshakes or blood transfusions, for example—remain, highlighting the need for targeted education and outreach initiatives.
- ❑ Furthermore, there is still a lack of broad public awareness regarding treatment choices, especially DOTS centres, which raises questions regarding the effectiveness of government communication initiatives.
- ❑ Healthcare providers and community engagement programs are crucial as trusted sources of information. These methods involve face-to-face interaction, allowing for a two-way conversation where individuals can ask questions and clarify doubts, emphasizing the importance of ongoing training and support for medical professionals in tuberculosis education.
- ❑ People are not trusting information from social media as there is an overflow of information, making it difficult to discern what is reliable.
- ❑ To enhance TB awareness and combat misinformation, improving digital literacy and correcting misconceptions are vital.
- ❑ Intensifying outreach programs and strengthening government initiatives are necessary to reach more uninformed segments of the population and achieve broader goals for TB control and prevention.
- ❑ By leveraging data from surveys, stakeholders can design targeted interventions and educational programs that address specific knowledge gaps, ultimately improving community-wide TB awareness and prevention efforts.

THANKYOU