



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper II – International Relations

Trump pauses strikes on Iran, says deal is possible

Attacks on power infrastructure in Iran will be 'postponed' for five days, says U.S. President; major 'points of agreement' reached in 'good and productive talks', he says; Iran rejects Trump's claims

Stanly Johny

U.S. President Donald Trump, who issued a 48-hour ultimatum to Iran on Saturday to reopen the Strait of Hormuz or face strikes on its power infrastructure, said on Monday that he would postpone the attacks for five days after "very good and productive" talks with Tehran.

"I am please[d] to report that the United States of America and the country of Iran have had, over the last two days, very good and productive conversations regarding a complete and total resolution of our hostilities in the Middle East," Mr. Trump wrote in a social media post.

Later in Washington, Mr. Trump told pressper-



Taking hits: A residential building damaged by a strike, amid the U.S.-Israeli conflict with Iran, in Tehran on Monday. REUTERS

sons that the Islamic Republic and the U.S. had "very, very strong talks" and there were "major points of agreement" between the two countries with a "real possibility of making a deal".

Iranian Parliament Speaker Mohammad-Bagher Ghalibaf, however, de-

nied negotiations with the U.S., saying that "fake news is intended to... escape the quagmire in which America and Israel are trapped".

Iranian Foreign Ministry also denied Mr. Trump's claims while the Islamic Revolutionary Guard Corps (IRGC) said it

Two more Indian vessels cross Strait of Hormuz

CHENNAI

Two Indian-flagged LPG carriers, *Jag Vasant* and *Pine Gas*, have transited through the Strait of Hormuz on Monday evening. They are together carrying nearly 93,000 tonne of LPG, as per the inter-Ministerial briefing held on Monday. » **PAGE 12**

launched a new wave of missile and drone attacks targeting the U.S. Fifth Fleet in Bahrain and U.S. bases in other West Asian countries.

CONTINUED ON

» **PAGE 12**

LONG-TERM IMPACT: PM

» **PAGE 12**



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper II – Polity

Centre signals early delimitation, women's quota for 2029 polls

Nistula Hebbar

NEW DELHI

The Union government has indicated that it will bring an amendment Bill proposing a delimitation exercise based on the 2011 Census to ensure the implementation of the Women's Reservation Act, 2023, ahead of the 2029 Lok Sabha election.

Under the proposed amendments, the number of Lok Sabha seats will increase from 543 to 816, with 273 seats, 33%, reserved for women. The amendments could be brought in the ongoing Budget Session or in a Special Session called for the purpose.

States' concern

Though the draft of the amendments are yet to be circulated, it is understood by sources that care would be taken so that the existing proportion of seats will



The Bill will enable delimitation based on the 2011 Census to implement the 2023 quota Act.

be maintained for all States, amid concerns that States that had showed success in population control programmes would lose out on representation *vis a vis* more populous States. Southern States had in particular expressed this concern. Overall, each State is likely to see a 50% rise in seats, but the pro-rata basis would be maintained.

CONTINUED ON

» **PAGE 12**



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper II – Polity

Centre to amend the Foreign Contribution (Regulation) Act

Vijaita Singh

NEW DELHI

The Union government is likely to amend the Foreign Contribution (Regulation) Act in the ongoing session of Parliament session. One of the key changes proposed is the appointment of a “designated authority” to take over, manage or dispose of assets created out of foreign funds by an NGO or association, which has had its FCRA registration suspended, cancelled, or not renewed.

Another proposed amendment is expanding the definition of “key functionary” of an NGO beyond an “office bearer/director” to include directors; partners; trustees; the *karta* (head) of a Hindu Undivided Family; office-bearers or members of the governing body or managing committee of a society, trust, trade union or association; and any other person who has control over or responsibility for the management or affairs of such an organisation.

The amendment also proposes to make key functionaries liable for offences under the FCRA.

Registration under the FCRA is mandatory for an NGO to receive foreign funds. Till now, the 2010 parent Act only had the

The Bill proposes to reduce the maximum imprisonment for FCRA offences from five years to one year

provision to regulate the flow of foreign funds, and not the statutory framework to manage the assets created out of such funds.

The Foreign Contribution (Regulation) Amendment Bill, 2026 also proposes to amend Section 43 of the parent Act, which will require any law enforcement agency or State government to seek prior approval of the Central government for initiation of investigation into FCRA-related complaints.

The Statement of Objects and Reasons of the Bill circulated by Home Minister Amit Shah said that, at present, around 16,000 associations are registered under the FCRA and they receive around ₹22,000 crore annually.

The Bill proposes to reduce the maximum imprisonment for FCRA offences from five years to one year. It also proposes fixed timelines for the utilisation of foreign funds received under the “prior permission” category, unlike the open-ended provision under the 2010 Act.



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper II – Polity

SC gives Centre four weeks to respond to plea against 'arbitrary' hikes in airfares

Krishnadas Rajagopal

NEW DELHI

The Supreme Court on Monday gave the government a four-week leeway to respond to a petition highlighting the need for accountability in the civil aviation sector for "arbitrary" airfare hikes and cancellations, saying "there are bigger problems the government is handling now", in an oblique reference to the potential blowbacks from the ongoing Iran-Israel conflict.

When the case came up for hearing before a Bench headed by Justice Vikram Nath, the government counsel said a draft response was being circulated, but "certain international events" had arisen in the meanwhile. The Bench advised the counsel ap-



The court gives leeway saying that "there are bigger problems the govt. is handling now".

pearing for petitioner, S. Laxminarayanan, to agree to an adjournment and listed the case for April 27.

The petition had sought regulatory intervention in the civil aviation sector to address fare fluctuation, fare transparency, and continuity of essential air services. It said the roller-coaster airfares resulted in

denial of mobility and an unjust imposition of financial burden in violation of the Constitutional guarantees. "Air travel, being regulated by statute, cannot be subjected to predatory market mechanisms," the petitioner submitted.

It urged the court to direct the Centre and the Directorate General of Civil Aviation to employ their statutory authority to stabilise tariffs and enforce service obligations.

The Airports Economic Regulatory Authority (AERA) had in February submitted a response claiming it had no role in the relief sought by the petitioner. AERA said its sole statutory objective was the regulation of tariffs and other charges for "aeronautical services" rendered at major airports.



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper II – Polity



Lok Sabha sends Corporate Law Amendment Bill 2026 to JPC

The Hindu Bureau

NEW DELHI

The government introduced the Corporate Laws (Amendment) Bill, 2026 in the Lok Sabha following which the House adopted a motion to send the proposed legislation to a Joint Parliamentary Committee (JPC) for detailed examination.

The JPC will comprise members from both Houses of Parliament for detailed analysis and recommendations, Union Finance Minister Nirmala Sitharaman said while proposing the motion for JPC reference. The motion was adopted by a voice vote.

The Bill seeks further amendments to the Limited Liability Partnership



Nirmala Sitharaman

Act, 2008 and the Companies Act, 2013 to facilitate ease of doing business and address the gaps identified by the Company Law Committee in its 2022 report.

The proposed amendments are expected to rationalise penalties, shift several minor procedural lapses from criminal liability

to monetary penalties, and streamline regulatory processes to promote ease of doing business.

The FM said the Bill was aimed at promoting ease of doing business and ease of living for corporates by decriminalising more provisions.

'Diluting provisions'

When the Bill was introduced in Lok Sabha, Opposition members Manish Tewari (Congress), Saugata Roy (Trinamool Congress) and T. Sumathy (DMK) opposed the same claiming the legislation sought to dilute the provisions of law under which companies mandatorily had to pay 2% of profit towards corporate social responsibility (CSR).

The FM refuted the

claim and said that the Bill had been introduced after two years of deliberations and the apprehensions of the members were unfounded as the proposed legislation sought to amend only the criteria for net profit, not the entire clause related to CSR.

Mr. Tewari also said since a Parliamentary Standing Committee on Corporate Affairs was already in place, the Bill must be sent there rather than setting up new JPC.

Home Minister Amit Shah, intervening, said none of the Opposition members talked about referring the Bill to a panel and now, when the FM has herself sought it, they were arguing as to which panel the Bill should be sent.

New way helps superconductor break temperature record

While superconductivity is easy to achieve at extremely low temperature, bringing it to room temperature is a 'holy grail' of physics; researchers have achieved much higher temperatures in recent years, up to -13 °C, but only by applying pressure equivalent to that near the earth's core



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper III – Science & Technology

A curated selection of articles on the Editorial and Opinion pages for World TB Day, March 24

The evolving diagnostic landscape for tuberculosis

Two weeks ago, in the run-up to World Tuberculosis (TB) Day (which falls on March 24), the World Health Organization (WHO) formally recommended the use of new near point-of-care (NPOC) molecular tests for diagnosing TB. WHO also endorsed the use of tongue swab samples for TB testing and sputum pooling strategies to potentially improve testing efficiencies at scale. These are the latest developments in what has been an unusually remarkable decade for the TB diagnostic landscape, a decade when new technologies have not only emerged but have also been tested, swiftly recommended and utilised to advance global efforts to eliminate TB.

Probably the best example is the rapidly expanding use of portable chest X-ray (CXR), in tandem with artificial intelligence (AI) solutions for TB screening. In India, the National Tuberculosis Elimination Programme (NTEP) has made available hundreds of portable CXR machines that are being utilised for the Pradhan Mantri TB Mukht Bharat Abhiyaan, in an effort to take active TB screening into the community.

Until recently, X-ray access was limited to hospital settings and dependent on the availability of technicians and radiologists to record the X-ray and interpret the findings. Today, active case-finding efforts are in full swing through mobile vans equipped with portable CXR with AI, making it more convenient. While this takes diagnostic services into the community, we must ensure on-the-spot collection of sputum samples for those with any CXR findings to significantly reduce attrition in the diagnostic cascade. Further, those with CXR lesions other than TB (for example, lung cancer) must get the referral and treatment services they need. Systematic microplanning will also help to refine these screening efforts to focus on those who are most vulnerable, particularly in urban and tribal settings.

The use of AI also presents a credible option for opportunistic screening. Tens of thousands of X-rays are performed daily across India in public and private clinics and hospitals for various reasons. Installing AI algorithms in digital X-ray machines that can swiftly identify suspicious lesions, whether for TB or other respiratory disorders, can reduce delays in diagnosis. Building health system capacity, particularly at the service delivery level, to use AI effectively is an important first step.

The diagnostic landscape is shifting

India has long relied on sputum smear microscopy as the primary test for diagnosing TB, despite its low sensitivity and inability to identify drug-resistance. In 2016, India began scaling up molecular testing – starting with the Cartridge-based Nucleic Acid Amplification Test



Dr. Soumya Swaminathan

is Chairperson of the M.S. Swaminathan Research Foundation and National Science Chair, Anusandhan National Research Foundation (ANRF)

Strengthening the tuberculosis testing infrastructure with an expanded diagnostic toolbox will improve outcomes and support TB elimination efforts

(CBNAAT) and later adopting the indigenous Truenat in 2020. Today, many more Indian products are available, and decentralised access to molecular testing is central to the TB programme.

However, access to up-front molecular testing remains uneven. To achieve 100% testing through NAAT prior to treatment initiation, we must also strengthen sputum collection and transportation mechanisms, especially for the elderly, people with disabilities, and those who live in hard-to-reach areas. To complete the diagnostic cascade swiftly, we must reduce delays in first-line and second-line drug resistance testing and work with the general health system to leverage diagnostic human resource capacity. Minimising test turnaround time will ensure that people with drug-resistant TB are started on the correct treatment regimen at the earliest.

With WHO's endorsement of near point-of-care Nucleic Acid Amplification Tests (nPOC-NAAT), there are now more options for molecular testing at the primary-care level that are not heavily dependent on infrastructure. The use of non-sputum samples, such as tongue swabs, are especially useful for those who find it difficult to produce a good sputum sample, including children.

It is important to acknowledge that none of these tools is a complete solution in itself. What this growing collection of new tests offers is a comprehensive toolbox for TB diagnosis. Diagnostic network optimisation can help identify which tools to best use, individually and in combination, and where they should be located, to establish a diagnostic cascade that is accessible, affordable and person-centered. India must field-test these tools through robust implementation research that matches the pace of innovation, so that solutions can be tested in specific settings and decisions taken for scale-up.

Indian innovators have made a significant contribution, bringing to the market screening and diagnostic tools for global use, and will continue to play an important role in taking them to scale across the country. Over the years, we must examine the evidence to evolve clear diagnostic algorithms that are operationally feasible, involving the use of both AI-enabled CXR and molecular tests for diagnosing TB and identifying any antibiotic resistance.

Research and innovation priorities

Simultaneously, we must streamline innovation assessment and procurement pathways so that all evidence is rigorously reviewed by the Indian Council of Medical Research (ICMR), comprehensive health technology assessments address clinical, social, economic, and ethical concerns, and only recommended tools are

procured and distributed in both public and private sectors. Several areas still require research and innovation.

First, as India is scaling up testing for TB infection and access to TB preventive therapy (TPT), we need more cost-effective and easy-to-use biomarkers that can identify and predict those at high risk for disease progression. Studies have shown that 'test and treat' approaches are more likely to convince people with TB infection to start on TPT, if they are at higher risk for disease, particularly in the private sector.

Second, the National TB Survey shows that asymptomatic TB is a serious issue, making symptom-based screening alone insufficient. Increased access to chest X-ray is a step in the right direction but we also need faster, less invasive diagnostic tools that use saliva and other non-sputum samples. More feasibility studies are required to understand utility and performance in real-world settings, particularly among individuals with low bacterial load.

Third, diagnosing TB in children remains challenging. Children cannot produce sputum as they often have low bacillary levels. Testing using stool samples has been tried in some countries and we need more implementation research in this area. We need far greater investment – and urgency – in finding the right new tools for diagnosing TB in children.

Finally, diagnosing extra-pulmonary TB (EP-TB) – which is almost a quarter of India's TB burden – remains difficult, often inaccessible and very expensive. Misdiagnosis as well as delayed diagnosis of EP-TB contributes to both catastrophic costs for families and poor outcomes for individuals. There are some pilots being done globally using AI-enabled portable ultrasound devices alongside molecular testing using new tools; we need India-specific evidence on this, including on cost-effectiveness.

Investing in strengthening the diagnostic landscape can be the greatest return on investment for the public health system. The sooner a person with TB is diagnosed, ideally before they are very ill, the more likely they are to recover fully, with fewer long-term post-treatment morbidities. Early diagnosis can not only improve treatment outcomes and long-term lung health but also dramatically reduce transmission within communities. A careful but swift and streamlined public sector expansion of diagnostics can also significantly reduce out-of-pocket expenditure for families affected by TB. An evidence-based, strong and expanded diagnostic toolbox can be a powerful lever to accelerate pathways to TB elimination in India.





GS Paper III – Science & Technology

A decade of building India's TB Champion movement

In early 2017, at a workshop in New Delhi, Cedric Fernandes, a tuberculosis (TB) survivor and advocate from Maharashtra, said to a room full of other TB survivors, "It has been very lonely having this disease. I am fed up with the loneliness and I hope all of you are too." Addressing the organising team at the workshop, he gently admonished us: "I am so glad that someone is finally bringing us together ... but what took so long?"

India diagnoses and treats over 25 lakh people with TB every year, which means that there are hundreds of thousands of individuals such as Cedric, who are coming to terms with the disease and fighting to overcome it. Their path, from diagnosis to cure, is often fraught with challenges in an ecosystem where stigma and social exclusion continue to thrive within communities. TB remains one of the most stigmatised illnesses in both urban and rural India; stigma and discrimination uniquely impact women, men, transgender communities, children and adolescents, the elderly and other socially vulnerable groups.

Challenging the belief

One of the early criticisms of the global TB response was that it remained stubbornly biomedical, focusing solely on clinical interventions whilst excluding communities and devaluing lived experience. Back in 2016, when we first began to imagine and build our wish list for how TB-affected communities – people with TB, TB survivors and their families – could play a greater role, there were many sceptics. Most of all, we were told that TB survivors, unlike people living with HIV, would want to move on with their lives once they had completed treatment, and would not be interested in becoming peer supporters or advocates. Ten years later, the evolution of the TB Champion movement in India has firmly dispelled this notion. TB Champions are survivors who are passionate, motivated and committed individuals, firm in their conviction



Dr. Nalini Krishnan

is Co-Founder and Executive Secretary of the Resource Group for Education and Advocacy for Community Health (REACH), a non-profit organisation working on tuberculosis (TB) for 27 years and a pioneer of the TB Survivor to Champion model



Anupama Srinivasan

is Deputy Director, Resource Group for Education and Advocacy for Community Health (REACH)

Survivors become 'TB Champions', supporting treatment, awareness and community engagement

that they have an important role to play in India's response to TB.

India's National TB Elimination Programme (NTEP) provides access to high-quality free diagnostics and treatment. Over the last few years, diagnosis and case-finding have accelerated, and treatment outcomes have steadily improved, which means that more people are being cured and mortality has reduced, with fewer people dying of TB. Newer strategies – Artificial Intelligence-enabled screening, active case-finding within communities, shorter and less toxic treatment regimens, expanded nutrition support, differentiated care approaches – have been adopted. But even the most robust health system cannot achieve elimination of any disease on its own, without active community participation. This is where TB Champions are uniquely poised to draw on their own personal experiences of TB to be powerful communicators and advocates for changes.

'Empower, support, educate'

In the early years of working with TB survivors, our focus was on developing the 'Survivor to Champion' training curriculum, which has since been formally adopted by the NTEP.

The involvement of TB Champions has reaffirmed a conviction that we have held from our inception – that a person with TB needs emotional support and motivation to get them through the treatment period, as much as they need high-quality clinical care. TB Champion-led peer counselling, through both one-to-one communication and support groups, has helped to improve treatment literacy and empowered people with TB with the knowledge they need. We have found a greater level of confidence and comfort among people with TB who have been supported by TB Champions and a significant reduction in self-stigmatisation.

Even today, myths and misconceptions about

TB persist. TB Champions have played a critical role in dispelling these and in improving knowledge of TB, the symptoms of the disease and where to seek care. They literally reach the last mile through regular community meetings, where they talk about the disease, share their own stories and reassure people that TB is a treatable and curable disease. This has been a powerful anti-stigma strategy, enabling people to come forward to seek diagnosis and treatment.

Building networks, looking ahead

In addition, over the last decade, TB Champions in several States have come together to form

survivor-led networks. These collective entities are naturally designed to be a powerful bridge between those seeking care and those providing services, especially among social vulnerable groups. Importantly, networks have become a source of strength for TB survivors, many of whom continue to experience the physical, social and

economic toll of the disease even after being cured. However, the long-term future and sustainability of networks remains uncertain, given that they are dependent on external resources for funding. The next challenge is to test and build self-sustaining socio-economic models for survivor-led networks.

Over the last 10 years, we have been humbled by the trust that thousands of TB Champions from across the country have placed in us. They have travelled long distances to attend our workshops, sharing their TB journeys and stories, their pain and successes. They have become empowered local leaders, unafraid to use the TB Champion moniker to refer to themselves. They remain staunchly committed to working with their communities – supporting people with TB and their families, talking about stigma, meeting their panchayat leaders – and doing all of this for one simple, powerful reason – 'so that no one else should suffer like I did'.





Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper III – Science & Technology

From disease-specific to person-centred care

By using TB as an entry point, integrated healthcare delivery can optimise and improve public health efficiency



Ramya Ivasan, Deputy Director



Ramya Ivasan, Deputy Director

Tuberculosis (TB) rarely presents as a standalone disease in an individual. Many people with TB have other comorbidities or disease conditions that they must simultaneously cope with, while being on treatment for TB. Therefore, treating TB alone is not enough. Adopting integrated care approaches by transitioning from disease-specific to person-centred care can accelerate India's efforts to achieve both universal health coverage and TB elimination. Simply put, we must treat the person and not the disease.

Take the example of Divya (name changed), a 48-year-old woman who was diagnosed with TB in 2023. She had been living with diabetes and hypertension for several years and it is highly likely that her diabetes played a role in her contracting TB. Crucially, she had poor glycaemic control with a HbA1c over 10, which had a direct impact on her treatment for TB.

Infectious diseases like TB, non-communicable diseases such as diabetes and chronic respiratory diseases; malnutrition; and social and economic vulnerabilities inevitably

intersect in individuals and families, adversely impacting outcomes and the overall quality of life. Recognising the interconnected nature of these multiple vulnerabilities is the first step towards delivering integrated care.

Treating TB and diabetes

As in the case of Divya, an important opportunity for integration is between TB and diabetes, given India's growing diabetes burden. Over 15 years ago, the National TB Elimination Programme (NTEP) identified diabetes as a key comorbidity for TB, and rolled out formal bidirectional screening guidelines for TB-diabetes. Every person with TB must be screened for diabetes and people with diabetes must ideally be screened for TB once a year. Studies have shown that people with diabetes are more likely to develop active TB disease than those without; equally, people with TB who also have diabetes are more likely to have poor TB treatment outcomes.

In Chennai, in a cohort of over 9,000 people with TB for three years, the authors found that over



TB patients seen inside the Govind Ballabh Pant Hospital on March 24, 2025. ANI

one-third (34%) had diabetes, and of this group, 41% had poor glycaemic control which is the biggest challenge. Monitoring the blood sugar levels of a person with TB and diabetes throughout the TB treatment period is therefore essential, as is expanding clinical management and the counselling that is provided from TB-specific guidance to also focus on overall lifestyle, physical activity, diet and nutrition etc.

Integrating respiratory care

Another important opportunity for integration is at the intersection of TB and Chronic Respiratory Diseases (CRD) such as asthma or Chronic Obstructive Pulmonary Disease (COPD). At the health system level, it is a likely stressor on already strained human resources, with the brunt of the workload falling on community health workers. In addition, many of India's large health programmes are vertical and not always de-

signed to talk to each other, in terms of both human resources and data; this will require both creative and pragmatic solutions. Integrated care delivery will require adequate and additional human resources, a careful readjustment of the health worker to care recipient ratio and investment in periodic training.



Holistic wellness

Given that the NTEP is among India's more robust, well-structured public health programmes, using TB as an entry point to identify and address closely associated morbidities such as diabetes, CRDs, undernutrition etc. will help optimise healthcare delivery and improve public health efficiency. More importantly, it could reduce delays in diagnosis, minimise the need for visits to several health facilities, and help overcome barriers to accessing a continuum of care. With empathetic person-centred design, integrated healthcare delivery can be a win-win for health systems, individuals and families affected by TB.

GS Paper III – Science & Technology

The need to integrate nutrition in TB care

For most patients with TB who are severely underweight, nutritional support is an essential and not optional part of treatment



Havi, Scientist



Havi, Scientist



Havi, Scientist

In 2026, India still has the highest number of new cases of Tuberculosis (TB) globally and a decreasing but still unacceptable number of about three lakh deaths due to TB. Almost 10% of successfully treated patients have recurrence within two years. An answer to all these challenges may partly lie in addressing a leading cause and consequence of TB in India, which is undernutrition, closely related to poverty, food insecurity and a predominantly cereal-based diet with deficient protein intake.

On the occasion of World TB Day, evidence from the Reducing Activation of Tuberculosis by Improvement of Nutritional Status (RATIONS) trial could offer insight into the importance of nutritional interventions. RATIONS was done in Jharkhand with support from the Indian Council of Medical Research and was the first such trial of a food-based intervention. It aimed at reducing new TB cases in TB-affected families, and improving treatment outcomes for patients with TB.

Ramila, a 19-year-old tribal boy in the trial, weighed only 26 kg and was almost bed-bound at the

time of his diagnosis of lung TB. Along with TB drugs, he received a monthly food basket. Over the next few weeks, he started walking and could cycle to work at the end of the treatment, weighing 42 kg. Laxmi, weighing 34 kg, had TB two years ago and had stopped medication after she developed jaundice within two weeks of starting anti-TB drugs. Now, as a result of the trial, she could adhere to the medications and also breastfeed her four-month-old.

Preventing deaths due to TB

Undernutrition, especially severe undernutrition, is common in patients in India. It is a major reversible risk factor for death, drug toxicity, and recurrence after successful treatment. For most patients with TB who are severely underweight, nutritional support is an essential and not optional part of treatment. Poor families are food-insecure and become even more so due to the disease. In the RATIONS trial, a monthly 10 kg food basket of cereals, pulses, milk powder, and oil led to a weight gain of almost 4.5 kg in patients. Even a 5% weight gain in the first two months was protective against



PM Mukt Bharath kits, which include basic nutritious food items, distributed to patients in Chittoor, Andhra Pradesh in 2023. FILE PHOTO

death, reducing the risk by more than 60%.

In India, the National TB Elimination Programme's (NTEP) initiatives in addressing undernutrition in TB care are welcome. For example, the monthly direct benefit transfer under the Ni-Kshay Poshan Yojana increased from ₹500 to ₹1,000 and similarly the Ni-Kshay Mitra Yojana, although not universal, provides in-kind support to patients with TB. However, the plan to introduce energy-dense nutrition supple-



ments for two months to underweight patients with TB needs to be considered with caution, given higher expenses, and the mystification of an adequate balanced diet apart from the risk of monotony and poor acceptability. One in 7 patients with TB in India may have diabetes which also needs to be taken into consideration.

A new avenue

While infection with the TB germ is necessary to develop the dis-

ease, it is not sufficient to produce active TB. Almost 90% of those infected, with good immunity, never develop the disease in their lifetime. Undernutrition is the most common cause of poor immunity in India and globally. It contributes to nearly 40% of new cases in India, and improved population-level nutritional status offers an alternative approach to reducing TB incidence.

Diets of the poor in India are particularly deficient in quality protein. TB-affected families experience vulnerabilities of poverty, food insecurity, and undernutrition. The 1.5 kg per month of pulses per family member, along with extra rice, worked like a vaccine in the RATIONS trial, with new TB cases in these families coming down by almost half.

The World Health Organization released new guidelines last year recommending nutritional interventions in settings of poverty and undernutrition, drawing significantly from the evidence of the RATIONS trial.

Improving nutrition security by including pulses in the public distribution system, and expanding the Ni-Kshay Mitra scheme to in-

clude TB patients' households will have long-term benefits in reducing the TB burden in India.

The way ahead

India is a global leader in implementing comprehensive nutrition assessment and support initiatives through the NTEP. Research and evidence from India have influenced global policy. Some of the next positive steps will be to record and report nutritional assessment at diagnosis; at two months; and at the end of treatment. This will help to identify those at risk of death, monitor early weight gain, and assess nutritional recovery. A differentiated TB care model in line with the TN-KET intervention in Tamil Nadu can identify and prioritise severely underweight patients. This will require local contextualisation of food baskets, with due attention given to comorbidities, supported by transport and inpatient care for the sick.

The inverse care law also works in TB and nutrition – the most vulnerable among us such as those in difficult-to-reach areas, the tribals, and the migrant workers, should not be left out.

The views expressed are personal.



Learn Beyond

KPR IAS Academy

Institute for IAS, IPS, IFS and TNPSC Exams

No. 5, AKS Nagar, Near Gandhi Park, Coimbatore - 641 001

GS Paper III – Science & Technology

Mental health of TB patients should not be overlooked

Studies from India have shown that at least one-third of people with TB experience symptoms of depression or anxiety



C.R. Thara
Founder
Vice-Chair
the
schizophrenia
search
foundation
(CARF)

At least one in seven Indians experience a mental health condition at some point in their lives. In people with infectious diseases like Tuberculosis (TB) or HIV, this increases to anywhere between one-third to a half of those affected. TB takes a toll on not only physical but also mental health, either in the form of definite diagnosable conditions like depression, anxiety or psychosis or as emotional suffering worsened by social stigma. TB is fundamentally a disease of inequity, perpetuated by poverty and simultaneously contributing to increasing poverty. Unemployment, the lack of livelihood, food insecurity and malnutrition are social drivers for both TB and mental health conditions.

Studies from India have shown that at least one-third of people with TB experience symptoms of depression and anxiety, which often occur together as well. The mental health burden is estimated to be even higher among people with drug-resistant TB, with up to two-thirds having mental health issues. There are anecdotal accounts from TB survivors on suicidal ideation as well as

documented instances of people with TB dying by suicide. There is not enough evidence about the prevalence of severe mental illnesses such as schizophrenia or bipolar disorders in people affected by TB.

The stigma associated with TB remains pervasive, and includes self-stigma, stigma within families, at workplaces and within communities. Many TB survivors have spoken of the guilt and shame they feel on being diagnosed with TB, despite knowing that it is an airborne disease that can affect anyone. For those with pulmonary TB, the guilt is driven primarily by the fear of transmitting the disease within their families, particularly to children. Those with depression or anxiety and TB must cope with an increased burden of stigma associated with both conditions, which can further worsen mental health.

TB and mental health

Given the high prevalence of common mental health disorders in the general population, it is possible that depression or anxiety could have been pre-existing and unidentified, even prior to the TB diagnosis; there have not been



A doctor offers flowers to a TB patient in Agartala on World TB day. PTI

enough studies on this aspect. Depression or anxiety could delay care-seeking for TB. Long-standing untreated depression can also weaken the body's immune responses which in turn could lead to active TB disease – this is yet again another under-researched aspect.

Post diagnosis, untreated mental health conditions can adversely affect TB treatment outcomes. A person with TB who is depressed, and has not received mental healthcare, is more likely to take TB treatment irregularly or discontinue treatment prematurely.

This can lead to treatment failure, relapse, or drug-resistance.

Co-existing alcohol and tobacco use, in the absence of access to de-addiction programmes, are also crucial factors affecting the treatment for TB.

Screening and identifying

Integrating routine screening for all people with TB for depression and anxiety is the starting point. Building awareness about common mental health disorders among healthcare workers, equipping them with the knowledge and

skills to provide mental health first-aid and ensuring early screening at the right point in the TB care cascade are the other essential steps. Primary healthcare workers and community supporters, who are often the first to notice any psychological distress, should be trained to elicit information about sleep, appetite, mood, stress etc. which can help early identification of mental health conditions.

Given that TB itself could trigger depression, mental health screening must ideally be done at multiple time points during the TB treatment period.

From an individual perspective, being treated for TB and depression at the same time can be a stressful experience. While India's TB programme already provides decentralised access to free anti-TB drugs and financial aid for nutrition, strengthening the availability of drugs to treat depression or anxiety through the district mental health programme is vital. While antidepressants or antipsychotics can be used alongside anti-TB drugs, clinicians must monitor for any adverse drug reactions or interactions. Psychological interventions, including cognitive-behavioural therapy and participation in peer support groups, can also help reduce isolation. To pro-

vide these services, qualified and trained mental health professionals are needed, particularly in rural and tribal areas.

Looking out for everyone

Mental health interventions cannot be limited to people with TB. The task of caring for people with TB can place considerable strain on families. Studies in India have shown that up to 80% of caregivers may exhibit high levels of Expressed negative Emotions (EE) and high stress levels due to their caregiving responsibilities. Often, high EE leads to increased caregiver burden and poorer treatment outcomes. In India's family-centred ecosystem, where most of the caregiving needs are met by family members, this can lead to critical or over-involved caregiving because of emotional, financial, and social strains.

Psychoeducation is important not just for persons with TB but also for their families and caregivers.

A blended and syndemic TB-mental health approach that considers mental healthcare as an essential part of TB care, rather than a standalone service, can significantly improve TB outcomes, reduce the burden on caregivers and improve long-term mental health.

CM
K

M NO NDE