



DAILY NEWS BULLETIN

LEADING HEALTH, POPULATION AND FAMILY WELFARE STORIES OF THE DA
Monday 20220307

Ayurvedic medicine

Ayurvedic medicine effective in treating diabetes: Chitkara University study (The Tribune: 20220307)

<https://www.tribuneindia.com/news/chandigarh/study-on-diabetes-treatment-375232>

Ayurvedic medicine effective in treating diabetes: Chitkara University study

A recent study by Chitkara University hinted that Ayurvedic medicine is highly effective in treating diabetes and is a better treatment option. Researcher Dr Ravinder Singh, Dr Thakur Gurjeet Singh and their team from Chitkara College of Pharmacy, Chitkara University, conducted Phase IV clinical trials on a study group of 100 diabetic patients.

The first group was given an allopathic medicine Sitagliptin and the other was provided with Ayurvedic medicine BGR-34.

According to the study, the baseline value of glycated haemoglobin (HbA1c) in patients at the start of the trial was 8.499%, but after four weeks of taking the Ayurvedic medicine, it reduced to 8.061%. After eight weeks, the value came down to 6.56 per cent, and after 12 weeks, it reached 6.27 per cent, said Dr Ravinder. —

Cancer

Spotting behavioural, developmental markers key to early detection of cancer in kids

Talking to IANS, Dr Shankar said that with the development of new medical treatments and technologies, the survival rate of children with cancer has increased (The Tribune: 20220307)

<https://www.tribuneindia.com/news/health/spotting-behavioural-developmental-markers-key-to-early-detection-of-cancer-in-kids-375615>

Identifying behaviour and developmental markers is key to early detection of cancer in kids but it is often overlooked, says Dr Abhishek Shankar, Associate Professor, Department of Radiation Oncology at All India Institute of Medical Sciences, Patna.

Talking to IANS, Dr Shankar said that with the development of new medical treatments and technologies, the survival rate of children with cancer has increased.

However, childhood cancer has an undesirable impact on patients and their families. Childhood malignancies raise a range of medical, psychological and social concerns, he added.

"A total of 33.3 per cent of children with acute lymphoblastic leukaemia had emotional disorders, as per a study, whereas, 53 per cent of children with neoplasms were suffering from some emotional and behavioural disorders, reports another study," AIIMS Professor said.

While talking about the challenges of rising paediatric cancer, Dr Shankar said that one-third of paediatric cancer survivors suffer from cognitive impairments, often due to chemotherapy treatment.

The most common long-term cognitive deficits found in paediatric cancer survivors receiving chemotherapy treatment include alterations in attention and executive functioning, altered or decreased processing speed, working memory, and visual spatial abilities.

"There is a need for intervention from the beginning, so developmental-behavioural pediatricians should be an important part of the team to ensure better quality of life", the AIIMS Professor added.

Delhi-based leading developmental paediatrician Dr Shubham Roy said that the prevalence of emotional and behavioural problems in children and adolescents is on the rise.

"We have not seen the paediatric cancer patients coming to us for assessments before their treatment begins. However, it is important to understand the treatment related changes if we get a baseline data. This should be an integral component of continued paediatric cancer care", Roy further added.

Roy said that there are many challenges in terms of interventions and they require a multidisciplinary team led by a developmental Pediatrician for ensuring regular monitoring and tailoring various therapies according to the needs of a particular child. IANS

lungs healthy post-Covid

Experts bat for keeping lungs healthy post-Covid recovery (The Tribune: 20220307)

<https://www.tribuneindia.com/news/amritsar/experts-bat-for-keeping-lungs-healthy-post-covid-recovery-375505>

Experts bat for keeping lungs healthy post-Covid recovery
Photo for representational purpose only. - File photo

As a part of an initiative of providing advanced treatment to people across the country, Indraprastha Apollo Hospital conducted an event in city on Saturday.

Dr MS Kanwar, Senior Consultant and Advisor Department of Pulmonology addressed the complexities of lung diseases along with the advanced treatment modalities available in India.

He said, “The lung transplant is not just a surgery but a process starting with extensive pre-lung transplant work up and optimal stabilisation of the patients of end-stage lung diseases like IPF, COPD, emphysema, Covid fibrosis, pulmonary hypertension and many others”.

It also involves lung and general rehabilitation, optimal oxygen therapy and positive pressure ventilation, ECMO etc, he said. “Lung transplant surgery is complex and so is the immediate and long term post-operative care,” he added.

According to Dr Kanwar, the chief lung transplant surgeon in their programme has about 170 lung and heart-lung transplants to his credit.

“Patients should not let their guards down in terms of preventive health check-ups,” he said.

IVF success rates

Covid mRNA vaccine doesn't affect IVF success rates: Study Study published in the peer-reviewed medical journal 'Fertility and Sterility' included a total of 400 patients, 200 vaccinated women and 200 age-matched unvaccinated women (The Tribune: 20220307)

<https://www.tribuneindia.com/news/health/covid-mrna-vaccine-doesnt-affect-ivf-success-rates-study-375366>

Covid-19 mRNA vaccines do not affect the ovarian response or pregnancy rates in IVF (In-vitro fertilisation) treatment, according to a study.

A team of researchers from the Tel Aviv University in Israel found that in patients undergoing IVF treatments, ovarian response and pregnancy rates were similar with those that were vaccinated with the mRNA Covid-19 vaccine prior to IVF treatment, as compared to unvaccinated women.

The study published in the peer-reviewed medical journal 'Fertility and Sterility' included a total of 400 patients, 200 vaccinated women and 200 age-matched unvaccinated women, undergoing IVF during January-April 2021.

The results showed no effect of Covid-19 mRNA vaccine on oocyte yield during hormonal stimulation or on pregnancy rates during IVF treatments.

The study did not support concerns that the vaccine might affect fertility treatment outcomes were not supported, said researchers.

"The theoretical concept of the supposed similarity between the SARS-CoV-2 spike protein and the syncytin protein that is speculated to take part in the fertilisation process and the formation of the placenta, has led to the assumption that the vaccine might induce an immune response which would affect implantation and pregnancy," said researchers, including Alon Kedem from the varsity's Shamir Medical Centre, in the study.

"Our results demonstrate similar oocyte yields and fertilisation rates among vaccinated and unvaccinated women," Kedem added.

The researchers said taking into account the potential harm of the infection itself on fertility, the already proven worse pregnancy outcomes among pregnant women with Covid-19 infection, and the higher risk of infection among unvaccinated pregnant women, it seems reasonable to reduce infection risk through vaccination.

"We recommend considering Covid-19 vaccination prior to commencing IVF treatments in order to reduce the risk of SARS-CoV-2 infection during pregnancy," Kedem said.

Preliminary reports on vaccine safety in pregnant women found similar miscarriage rates among vaccinated women as compared to historical data from the literature.

However, the results of this study "strengthen the notion that it is unlikely that the vaccine would generate a response that might interfere with placentation," researchers said.

Yet further studies are needed to evaluate the safety of the vaccine beyond the eighth week of pregnancy, the team said.

15-week abortion

Florida Republicans send 15-week abortion ban bill to governor

Florida bill contains exceptions if the abortion is necessary to save a mother's life, prevent serious injury to the mother or if the foetus has a fatal abnormality (The Tribune: 20220307)

<https://www.tribuneindia.com/news/health/florida-republicans-send-15-week-abortion-ban-bill-to-governor-375061>

Abortions after 15 weeks would be banned in Florida under a bill Republican senators sent to Governor. Ron DeSantis late Thursday, capping a bitter debate in the statehouse as a looming U.S. Supreme Court decision may limit abortion rights in America.

DeSantis, a Republican, has previously signalled his support for the proposal and is expected to sign it into law.

“I want abortion to be legal safe and accessible but I fear this bill moves us in the other direction, forcing women with means to travel out of state and those struggling economically to resort to potentially dangerous options,” said Sen. Lori Berman, a Democrat.

The measure comes as Republicans across the country move to tighten access to the procedure after the U.S. Supreme Court signalled it would uphold a similar 15-week abortion ban in Mississippi and potentially overturn Roe v. Wade. A decision in that case is expected later this year.

The Florida bill contains exceptions if the abortion is necessary to save a mother's life, prevent serious injury to the mother or if the foetus has a fatal abnormality. The state currently allows abortions up to 24 weeks of pregnancy.

As the measure moved through the GOP-controlled statehouse, debates often grew emotional and revealing, with lawmakers recalling their own abortions and experiences with sexual assault.

This week, Sen. Lauren Book, a Democrat who turned the pain of being sexually abused by her nanny into a career of helping other survivors, tearfully revealed she was also drugged and raped by multiple men when she was a young teenager. She implored senators to allow exemptions for rape, incest or human trafficking.

“It's not ok to force someone who's been sexually assaulted and impregnated to carry that pregnancy to term if they don't want too, it's just not,” Book said. “And if a woman or a girl needs more than 15 weeks to decide, we should be able to give that to her.”

In a separate exchange from when the bill passed the GOP-controlled House last month, Republican Rep. Dana Trubusly told lawmakers she previously had an abortion but has

“regretted it every day since.” “This is the right to life and to give up life is unconscionable to me,” she said.

Republicans have often said the bill is reasonable because it is not a total ban on the procedure and still gives women enough time to consider whether to get an abortion, even in cases of rape, incest or trafficking.

“The only thing that we’re asking in this bill is that whatever decision you make, you do it before the 15 weeks,” said Republican Sen. Ileana Garcia.

GOP lawmakers in West Virginia and Arizona have also introduced similar 15-week abortion bans similar to the Mississippi law under review by the Supreme Court. Republicans in other states have modeled legislation after a law in Texas which effectively banned abortions after six weeks.

Before the vote Thursday, White House officials hosted a roundtable discussion with abortion rights advocacy groups and Democratic state lawmakers about the Florida bill as well as Republican restrictions in other states. In a statement about the meeting, the White House said “In the face of these challenges, administration officials reiterated the administration’s commitment to exploring every option to protect reproductive health care.” AP

4th wave of COVID-19

**IIT Kanpur study on 4th wave of COVID-19 needs to be examined: Govt
The government looks at these estimates with due respect because these are scientific works produced by eminent people," Paul said(The Tribune: 20220307)**

<https://www.tribuneindia.com/news/nation/iit-kanpur-study-on-4th-wave-of-covid-19-needs-to-be-examined-govt-374805>

With an IIT-Kanpur study predicting a fourth wave of COVID-19 in July this year, the government on Thursday said it looks at such studies with due respect but it is yet to examine whether this particular report has a scientific worth or not.

Addressing a press conference here, NITI Aayog Member (Health) V K Paul said that the IIT Kanpur study is a "valuable input" produced by eminent people.

"...it has been our endeavour to look at science of the pandemic, its epidemiology, trend and virology. All projections are based on data and assumptions and we have seen divergent estimates from time to time. They are sometimes so divergent that decisions based on just a set of projections will be very unsafe for the society. The government looks at these estimates with due respect because these are scientific works produced by eminent people," Paul said.

He said the government's approach is to be completely prepared for the unpredictable virus but whether the IIT study has a scientific worth or not is yet to be examined.

"We saw the news item and found out that this project is carried out by a group in a particular institution. We would like to see it published in a peer reviewed journal. We should be carefully watching the assumption that has been used. Only on a single estimate or projection, one is not taking any decision of significance. We value it as an input. Whether it has a scientific worth and mathematical underpinning will be examined," Paul said.

"Our approach is to be absolutely prepared for this unpredictable virus and at the same time carry on with our work and activities in a responsible way. We are sharing on a regular basis with you our understanding and the dynamics of the pandemic and how the nation is responding to it," he added.

A modelling study by researchers at the Indian Institute of Technology-Kanpur suggested that the fourth wave of the COVID-19 pandemic in India may start around June 22 and peak from mid to late August.

The yet-to-be peer-reviewed study, recently posted on the preprint repository MedRxiv, used a statistical model to make the prediction, finding that the possible new wave will last for four months.

The study led by Sabara Parshad Rajeshbhai, Subhra Sankar Dhar, and Shalabh of IIT Kanpur's Department of Mathematics and Statistics shows that the severity of the fourth wave will depend on the emergence of a possible new coronavirus variant, and vaccination status across the country.

WHO's standards

**93% Indians live in areas with air quality below WHO's standards: Study
The report revealed that life expectancy in India, as a result, has been shortened by about 1.5 years (The Tribune: 20220307)**

A whopping 93 per cent of Indians live in areas where air pollution levels exceed WHO standards, according to a global report.

The report revealed that life expectancy in India, as a result, has been shortened by about 1.5 years.

The findings by Health Effects Institute (HEI) in Washington, US, is part of its annual State of Global Air annual analysis for 2020.

The study showed that with an average annual population-weighted PM_{2.5} of 83 microgram/cubic metre (mg/cu) in 2019, as many as 9,79,700 deaths in India can be attributed to PM 2.5.

It showed that almost 100 per cent of the world's population lived in areas where the PM2.5 levels exceeded WHO recommendations - which is average annual PM2.5 exposure levels of 5 mg/cu.

On average, more than 40 per cent of the world's population lives in areas where ozone levels exceeded the least stringent WHO interim target in 2019.

Globally, India ranks ninth highest population exposure to ozone (98 per cent), following countries like Congo, Ethiopia, Germany, Bangladesh, Nigeria, Pakistan, Iran and Turkey taking the top eight positions and China ranking 10th.

"Air pollution is a leading risk factor for deaths and disability around the world; in 2019 alone, exposure to air pollution was linked to 6.7 million deaths," the authors wrote in the study.

The large exposure to PM2.5 has also reduced life expectancy for countries and regions -- Egypt (2.11 years), Saudi Arabia (1.91 years), India (1.51 years) China (1.32 years) and Pakistan (1.31 years).

The lowest impacts of pollution on longevity is in Norway, Sweden, Australia, and New Zealand.

"We estimate that the average human life is shortened by approximately 1.8 years due to the combined effect of ambient (outdoor) ozone pollution and fine particulate matter pollution (PM2.5) in ambient air and in households from cooking with wood and other solid fuels," the researchers said.

The combined impacts of these pollutant exposures are especially high in the world's lowest income countries (typically shortening a life by two to three years).A These impacts on human life expectancy are quite large in comparison to other major diseases and threats to human health.

The findings also showed that improvements in global air quality could lead to longer and healthier lives in many regions of the world. IANS

Doctor density in India 5 per 10,000

Doctor density in India 5 per 10,000 WHO norm: 44.5 per 10k persons (The Tribune: 20220307)

<https://www.tribuneindia.com/news/nation/doctor-density-in-country-5-per-10-000-374845>

Low public investment in medical education and human resources stands at the root of international migration of MBBS aspirants, as reflected in the Ukraine crisis. A study on active human resources in health reveals a density of only 6.1 doctors per 10,000 persons, which further drops to 5 when accounted for adequate medical qualification.

Also read: Low NEET cut-off behind costly MBBS

Nurse density is similarly low at 10.6 per 10,000 and lower at 6 when factored for proper qualification. The above stock density of health human resources is shockingly low compared to the WHO norm of 44.5 per 10,000 persons.

WHO norm: 44.5 per 10k persons

India needs to raise investment in human resources for increasing the number of active health workers

All district hospitals should be upgraded to medical colleges with enhanced seats

Qualified health professionals should be encouraged to join the labour markets

The study led by Anup Karan of the Indian Institute of Public Health examined two government databases—National Health Workforce Account (overall registry of doctors, nurses etc.) and that from National Sample Survey Office (which assesses active workforce). “The study estimated (from NHWA) a total stock of 5.76 million health workers, including allopathic doctors (1.16 million), nurses/midwives (2.34 million), pharmacists (1.20 million), dentists (0.27 million), and traditional medical practitioners (AYUSH, 0.79 million).

“However, the estimated active workforce size (NSSO) is much lower (3.12 million) with allopathic doctors and nurses/midwives estimated around 0.80 million and 1.40 million, respectively. Stock density of doctors and nurses/midwives stands at 8.8 and 17.7, respectively, per 10,000 persons, as per the NHWA.

“But active health workers’ density (NSSO) of doctors and nurses/midwives is estimated at 6.1 and 10.6, respectively. The numbers drop to 5.0 and 6.0, respectively, after accounting for adequate qualification. These estimates are well below the WHO threshold of 44.5 doctors, nurses and midwives per 10,000 population,” the findings say.

“India needs to invest in human resources for increasing the number of active health workers and improve the skill-mix that requires investment in professional colleges and technical education. It also needs to encourage qualified health professionals to join the labour markets through additional training and skill building for those already working, but inadequately qualified,” Anup Karan notes.

K Srinath Reddy, former President of the National Board of Education, which conducts the Foreign Medical Graduates Exam, said poor investment in medical education was at the core of the current crisis reflected in Ukraine. The immediate solution, Reddy said, was to upgrade all district hospitals into medical colleges with enhanced seats, something he recommended as chair of the Planning Commission’s high-level working group on health in 2011.

Healthy foods

Healthy foods to consume when fasting, according to Ayurveda
Ayurvedic expert Dr Dixa Bhavsar took to Instagram to share the benefits of fasting and recommended a few healthy foods (The Indian Express: 20220307)

<https://indianexpress.com/article/lifestyle/food-wine/healthy-foods-fasting-ayurveda-7803689/>

healthy-fasting-foods-1200Nuts are a healthy option to snack on during fasts. (Source: Representative photo/Pexels)

Fasting refers to deliberately stopping eating, either completely or sporadically, for a specific period of time. It usually lasts from 12 to 24 hours and there are various types of it, such as intermittent fasts, water fasts, fruit fasts etc.

Said to improve overall gut health and detoxify the body, Ayurveda highly recommends fasting for those who are able to do it. As such, Ayurvedic expert Dr Dixa Bhavsar took to Instagram to share the benefits of fasting, recommending a few healthy foods that you can eat during it.

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“Fasting does wonders to your physical as well as mental health. It helps you with many health disorders, from PCOS, obesity, high cholesterol, liver disorders etc.,” she captioned the post.

Sharing her personal experiences while fasting, Dr Bhavsar mentioned that she had found relief on an “emotional and spiritual level”.

What’s the best way to fast?

The expert noted that different types of fasts will work differently from person to person. “Practise what works for you. In order to know which one suits you, you need to give it a try.”

What are different kinds of fasts?

- *Dry fast (no food- no water)
- *Fasting on water
- *Fasting on fruits
- *Fasting on liquids (herbal drinks)
- *Fasting from grains
- *Fasting from sugar and salt
- *Fasting from social media
- *Fasting from negativity
- *IF (intermittent fasting)
- *Circadian rhythm fasting

*CIF (Circadian Intermittent fasting)

IN PREMIUM NOW |The 5:2 diet: A popular way of intermittent fasting to lose weight
A few Ayurveda-approved healthy foods recommended during fasting are as follows:

Mental health

Ukraine crisis: Mental health experts on how to talk to children about war and conflict

How can you address their confusions and questions with an open and honest discussion? Why is it important? Should you broach it at all? (The Indian Express: 20220307)

<https://indianexpress.com/article/lifestyle/life-style/mental-health-experts-on-how-to-talk-to-children-about-war-and-conflict-7797844/>

children mental health, war, russian invasionMental health experts weigh in on how to talk to children about war and conflict. (Photo: Pexels)

As the Russian invasion of Ukraine advances, the news and visuals of human suffering and destruction are distressing and anxiety-inducing for every individual. And while as adults we often have better tools to deal with the nervousness and uncertainty about the future, children often don't, especially those who are in their middle childhood (age 5-12 years). How can you address their confusions and questions with an open and honest discussion?

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Should you talk about it?

Dr Samir Parikh, director, Mental Health and Behavioral Sciences, Fortis healthcare says the key is to understand “whenever a child is exposed to anything in media, some conversation around that needs to happen, because if the parents don't help the children understand and assimilate that information, it will be left to the child's own interpretation and they can be at risk of misunderstanding, developing emotional reactions, and having behavioral changes. Right now, the war is something that is covered so much around them; it is important to sensitively explain to them what is actually happening based on their age group and understanding.”

Younger children may not distinguish between images on screen and their own personal reality and may, hence, believe they're in immediate danger, even if the conflict is happening far away, reminds Dr Abhijit Bagde, consultant pediatrician and lead pediatric intensivist, Apollo Hospitals, Navi Mumbai. It is still important to have the conversation to explain to children there are people in the world who might do harmful things that impact others. “Children should not live in a bubble. They should know there are unfavourable events that happen everywhere,” says Dr Valli Kiran, consultant psychiatrist, SPARSH Hospital.

ALSO READ |Pet lovers' dilemma amid Russia-Ukraine war: 'Can't leave them behind, no matter what happens'

How should you go about it

The focus of parents and teachers, when they talk to children, should be on the learning component: how it is bad, how is it harmful, why it should be avoided, why finding peace without fighting is important, notes Dr Parikh. For some parents, it might be hard to broach the conversation if the child isn't vocally expressing their anxiety. In such a case, Dr Bagde suggests to "find out what they know and how they feel, what the source of the information was". "Once the child starts expressing the thoughts, this can reduce their anxiety about it. Initially, some children may find difficulty in articulating right words. However, listening to the child's mind, having patience and validating the feelings are important initial steps."

For kids in the age group 6-12, it is difficult to understand the realistic picture of war. "One can try to simplify it and explain it to them based on the amount of interest and ability to absorb information. If they are showing that ability, one can share the information bit by bit without overwhelming them with details," advises Dr Kiran.

To this Dr Parikh adds: "Make sure their routines are normal, use play and creative ways like reading and writing to express. Also, pick teaching moments when they are seeing something, provide open-ended spaces for them to talk."

ALSO READ |Young people and mental health: What we can be done to enhance well-being
Check your emotions

In most instances, young children often react to their parents' distress. The sight of a disturbed/anxious/angry parent can be a disturbing thing for the child. "It's important to monitor your own emotions when you're talking about war," reminds Dr Bagde, adding that "the parent must use appropriate words, tone and timing so as to provide some facts and some explanations without going into too many details. The parent's reassuring words are very crucial for child's temperament."

How to field questions

How much to discuss and what to discuss when it comes to war and death depends on the age and development of the child. Once the dialogue starts, it is likely the child may ask some difficult questions. "For some questions, parents can always use phrases like 'I don't know', 'let me read and get back to you later'," says Dr Bagde. He adds that it's okay for parents to not know or explain everything. One can also use historic examples and stories as references.

Variants

Variants do not always evolve to become less virulent (The Hindu:20220307)

<https://www.thehindu.com/sci-tech/science/variants-do-not-always-evolve-to-become-less-virulent/article65192822.ece>

Improving fitness: The only way the next variant can become even more transmissible than the Omicron variant is by exhibiting a far higher ability to evade neutralising antibodies.

Improving fitness: The only way the next variant can become even more transmissible than the Omicron variant is by exhibiting a far higher ability to evade neutralising antibodies. | Photo Credit: Getty Images

Since transmission begins before symptoms set in and the disease becomes severe, its characteristic is decoupled from disease

In early February, World Health Organization technical lead on Covid-19, Dr Maria Van Kerkhove, cautioned that the pandemic is far from over and new variants will emerge and such variants could be more transmissible than the Omicron BA.2 variant. “The next variant of concern will be more fit, and what we mean by that is it will be more transmissible because it will have to overtake what is currently circulating. The big question is whether or not future variants will be more or less severe,” Dr Van Kerkhove said.

Evading antibodies

The only way the next variant can become even more transmissible than the Omicron variant is by exhibiting a far higher ability to evade neutralising antibodies. This would mean that full vaccinations (two doses) will be even less effective in preventing breakthrough infections. But so far, fully vaccinated people have been found to be less likely to suffer from severe disease requiring hospitalisation and even death. That is because it is the T cells and B cells that come into play to reduce the severity of the disease. “The memory T cells are extremely unlikely to prevent SARS-CoV-2 infections. That is just not what T cells generally do. They may reduce COVID-19 disease severity and prevent deaths,” Dr. Shane Crotty from La Jolla Institute for Immunology, La Jolla, California, had earlier told The Hindu.

“The variants are a wild card. We still don’t know everything about this virus, we still don’t know everything about the variants and the future trajectory of that,” Dr. Van Kerkhove added.

Virulence unpredictable

While the next variant has to necessarily be more infectious than the Omicron variant, whether the variant will be more or less severe cannot be said with certainty. But it is important to remember that right from the very early stage of the pandemic, it became clear that transmission or virus spread begins even before symptoms can show up. That is what makes SARS-CoV-2 very different from the 2002 SARS virus and MERS virus. Since transmission begins even before symptoms set in and well before the disease becomes severe, the transmission characteristic is decoupled from disease. As a result, the natural evolution process selects variants not based on how they cause disease but how they can escape neutralising antibodies.

“Almost all [SARS-CoV-2] transmission happens while people have no or few symptoms, there is no particular reason for severity to play a role in evolutionary selection. NERVTAG

[The New and Emerging Respiratory Virus Threats Advisory Group] thinks Omicron's mildness is likely pure chance and the next one is likely to be more severe again," Dr William P. Hanage from Harvard T.H. Chan School of Public Health, Boston, tweeted.

Immune escape

The virus was novel and none in the world had any immunity in the beginning of the pandemic. But with millions being infected by the virus and millions being fully vaccinated, and some with a combination of natural infection and vaccination, the next variant has to necessarily exhibit higher immune escape to cause infection. This is the reason that the next variant will exhibit more immune escape than the Omicron variant.

Even though the Omicron variant caused a large number of infections in virus-naïve people and in those who have been previously infected and vaccinated, at the population level, disease severity has been far less severe compared with the Delta variant. But lower disease severity was seen more in people who have pre-existing immunity either from vaccination or previous infection.

Two studies that tried to document the intrinsic disease severity of the Omicron variant compared it with the Delta variant. The studies found that the Omicron variant is about 75% as likely to cause severe disease or death as the delta variant. In a study posted as a preprint in medRxiv on January 12, this year, the authors conclude: "In the Omicron-driven wave, severe COVID-19 outcomes were reduced mostly due to protection conferred by prior infection and/or vaccination, but intrinsically reduced virulence may account for an approximately 25% reduced risk of severe hospitalization or death compared to Delta."

Intrinsic severity

In the second study, a report by the Imperial College COVID-19 response team found 69% reduction in hospitalisation risk in people who have been reinfected compared with primary cases.

"This meaningful but fairly small difference implies that Omicron, Alpha, and wild-type SARS-CoV-2 have similar intrinsic severity," Dr Roby P. Bhattacharyya from Massachusetts General Hospital, Boston and Dr William P. Hanage from Harvard T.H. Chan School of Public Health, Boston write in *The New England Journal of Medicine*.

"Viruses don't inevitably evolve toward being less virulent; evolution simply selects those that excel at multiplying. In the case of COVID-19, in which the vast majority of transmission occurs before disease becomes severe, reduced severity may not be directly selected for at all," Dr. Bhattacharyya and Dr. Hanage write. "Indeed, previous SARS-CoV-2 variants with enhanced transmissibility (e.g., Alpha and Delta) appear to have greater intrinsic severity than their immediate ancestors or the previously dominant variant."

"It is also not true that variants are becoming milder. Delta was more severe than Alpha which was more severe than the original [virus]. Omicron is milder than Delta but likely not milder than original [virus]... and it's not part of a steady progression to mildness.," Dr. Hanage tweeted.

Just like how transmission is decoupled from disease severity for the SARS-CoV-2 virus, it is also true that the new variants have not evolved from the existing ones. "Thus far, new variants of concern have not evolved from the dominant preceding one. Instead, they have emerged

from separate lineages,” says a report in Nature. Dr. William Hanage, too, says the same in a tweet: “[SARS-CoV-2] evolves rapidly, but this isn't straightforward. None of the main variants evolved from each other. Instead, so far they are all distinct, becoming gradually fitter via subvariants until replaced by an entirely new variant.”

Oral cancer

The role Fusobacterium plays in oral cancer patients in India (The Hindu:20220307)

<https://www.thehindu.com/sci-tech/health/the-role-fusobacterium-plays-in-oral-cancer-patients-in-india/article65192892.ece>

A study identified the presence of a bacteria, *Fusobacterium nucleatum*, in oral tumours at a significantly higher burden than in the oral cavity of healthy individuals.

A study identified the presence of a bacteria, *Fusobacterium nucleatum*, in oral tumours at a significantly higher burden than in the oral cavity of healthy individuals. | Photo Credit: Getty Images

Screening for *Fusobacterium* in a population, in habitual tobacco chewers, could be a worthy exercise

Since the beginning of the 20th Century, it is known that infections could play a role in cancer, with 18-20% of cancers associated with infectious agents. This could be relatively higher in developing countries like India. Our team at ACTREC-Tata Memorial Centre developed a highly sensitive and specific automated computational tool HPVDetector to quantify the presence of human papillomavirus (HPV). This was done by subtracting human sequences from the cancer genome and comparing the rest with the HPV genome to identify the presence of HPV sequence trace and determine the range of all co-infecting HPV strains in the same individual.

The analysis revealed significant occurrence of HPV 16, 18, and 31, among others, in cervical cancer. But a surprising finding was that Indian patients with oral tumours showing a distinct tobacco usage gene signature were devoid of HPV infection. This was in sharp contrast to the oral tumours among Caucasian patients, wherein tobacco genetic signature is not common but is marked by a significant presence of HPV. Several groups have corroborated this finding, and it is well established that oral tumours among Indian patients are not driven by HPV infection.

In this study published on Mar 4, in NAR Cancer, Sanket Desai, the lead researcher from the group, developed another advanced automated computational tool — Infectious Pathogen Detector (IPD). Beyond HPV, IPD can detect the presence of 1,058 pathogens in the human cancer genome from datasets generated from any Next Generation Sequencing platform. This tool is publicly available for download from the ACTREC- TMC website. Using IPD, the DNA

and RNA sequence from 1,407 cancer samples of oral, breast, cervical, gall bladder, lung and colorectal tumours derived from Indians were analysed and compared with Caucasian patients.

Map of microbes

This has led to establishing the most detailed map of the abundance of 1,058 microbes present across Indian cancer patients. Rigorous statistical measures were adopted to distinguish the commensal microbes present as normal flora in a healthy individual compared with the diseased state. Systematic analysis of the data helped the group identify the presence of a bacteria, *Fusobacterium nucleatum*, in the oral tumours at a significantly higher burden than in the oral cavity of healthy individuals.

Interestingly, *Fusobacterium nucleatum* is known to play a vital role in colorectal cancer, wherein its presence affects the spread of the disease and the patient's response to chemotherapy. However, a similar role of *Fusobacterium* in oral cancer was not known earlier. The presence of the bacteria was found in Indian and Caucasian oral cancer patients, with a much higher incidence among the Indian patients. Moreover, oral cancer patients positive for *Fusobacterium* were found to be negative for HPV infection, suggesting they are present in a mutually exclusive way.

The finding underlines that while oral tumours in the West are more likely to be driven by HPV infection with a lower abundance of *Fusobacterium* infection, the oral cancer incidences in India are caused more by *Fusobacterium* infection. The tumours in oral cancer patients infected with the bacterium were found to spread to lymph nodes in the head and neck region or other distant organs. This sub-class of the tumour was also found to have higher levels of genes responsible for inflammation and pro-cancer immunological response.

Consistent with this finding, infection with virus or bacteria causing chronic inflammation leading to cancer has been known across multiple cancer types, such as HPV in cervical cancer, HBV and HCV in liver cancer, *H. pylori* in gastric cancer, etc. This study also identified three novel small non-coding miRNA molecules among tumours infected with the bacteria. The discovery of these miRNAs allows the investigators to understand the biological pathway targeted by the *Fusobacteria*, when it infects the oral cells, and its detailed characterisation. The study continues in collaboration with IIT Bombay, where the researchers grow the oral cancer cells in the presence and absence of the bacterium.

Preventing cancer through immunisation against infectious agents such as HPV vaccination has been known to be effective in up to 90% of HPV-related cancers. Similarly, a significant reduction was observed in the incidence of gastric cancer across multiple studies when the patients infected with the bacteria, *Helicobacterium pylori*, were treated with antibiotics specific to the bacterium. The findings from the study carried out at ACTREC- Tata Memorial Centre opens an opportunity to treat oral cancer patients positive for *Fusobacterium*, occurring predominantly among Indian patients, with a *Fusobacterium*-specific antibiotic for selectively targeting the tumours. The study emphasises the impact of *Fusobacterium* infection on modulating conventional chemotherapy treatment or recurrence of the disease as frequently observed in oral cancer patients, similar to its role in colorectal cancer. The utility of community screening for the presence of *Fusobacterium* in the oral cavity in a population or among habitual tobacco chewers remains to be explored — though it could be a worthy exercise considering the alarming increase in tobacco-associated oral cancer in India.

Next COVID-19 wave

Next COVID-19 wave can't be predicted: experts (The Hindu:20220307)

<https://www.thehindu.com/news/national/experts-denounce-study-that-forecasts-fourth-covid-wave-in-june/article65184027.ece>

Rapid antigen Test of covid 19 virus in progress at Azadpur Chowk, in New Delhi.
Rapid antigen Test of covid 19 virus in progress at Azadpur Chowk, in New Delhi. | Photo Credit: Sushil Kumar Verma

There is absolutely no way to forecast the timing, says Professor behind SUTRA model

Independent experts have criticised a recent modelling study from a group of researchers at the Indian Institute of Technology, Kanpur that predicts a fourth COVID wave in India around June.

The study, uploaded on the preprint server, Medrxiv, which hosts scientific work that is yet to be published in a peer-reviewed journal forecasts the wave to begin precisely on June 22, 2022, reaching its peak on August 23, 2022 and ending on October 24, 2022. For its analysis, it takes the trajectory of the coronavirus epidemic in Zimbabwe, because its history most resembles the case trend in India, and concludes that because Zimbabwe has seen a fourth wave, India is a fait accompli.

The authors, Sabara Parshad Rajeshbhai, Subhra Sankar Dhar and Shalabh, of the Department of Statistics and Mathematics, IIT-K, add caveats that the future wave could be affected by the nature of the existing variant that would emerge as well as vaccination coverage.

The Hindu could not immediately reach out to the authors for comment.

“The findings from this study are aimed to help and sensitise the people. For example, a few countries including the Government of India have started to provide booster dose to a section of people, which may reduce the impact of the fourth wave in a long run,” their paper notes.

A group at IIT Kanpur, led by Manindra Agrawal, a professor of mathematics and computer science, is behind the SUTRA model, whose forecasts on the pandemic are widely followed. While this model failed to forecast the deadly second wave and was critiqued by epidemiologists and biologists for its approach, it was accurate at gauging the trajectory of the third wave. The latest study is however independent of the SUTRA model.

Mr. Agrawal told The Hindu that he disagreed with the underlying assumptions of the latest study. The timing of a hypothetical fourth wave, he said, could not be predicted because it was

heavily dependent on the nature of a future variant. “There is absolutely no way to predict the timing. If at all we see one, it will be very short and would have to be caused by a highly infectious variant because you have to account for the fact that nearly 90% of India has been exposed to the virus,” he said. The SUTRA model does not yet see a fourth wave, he added.

Gautam Menon, of the Ashoka University and who has been closely involved with efforts to mathematically model the pandemic argued in an explanatory Twitter thread that the forecast of a fourth wave “shouldn’t be taken seriously” because epidemiology wasn’t an exact science like physics or chemistry. The pandemic waves were being driven by variants, none of which could be predicted in advance, and modelling could at best be useful for “broad policy rather than a highly specific prediction of numbers.”

Zimbabwe’s median age was 19 as opposed to India’s 30 and had a vaccination coverage of 40% of the population to India’s 75%. These meant different degrees of “hybrid immunity” (that is protection from future infections due to a combination of vaccines and previous exposure) and the current study did not account for this rendering their predictions unusable, he opined. “Should one trust this model at all? The answer, simply, is no.”

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Dreadful Diseases

Dreadful Diseases in Colonial Bengal: Cholera, Malaria and Smallpox review: Lessons from a colonial past (The Hindu:20220307)

<https://www.thehindu.com/books/books-reviews/dreadful-diseases-in-colonial-bengal-cholera-malaria-and-smallpox-review-lessons-from-a-colonial-past/article65092304.ece>

Understanding ways to tackle COVID-19 through health crises that have plagued India
It was still early days of the pandemic. The virus was spreading fast, even as scientists were struggling to understand the new contagion. Isolation, quarantine, social (or physical) distancing — and lockdowns — were beginning to become part of our lexicon, and existence.

For at least one public health expert, the (initial) response to the new contagion seemed rather “medieval”. Despite scientific progress, all we can do is shut everything down, and isolate ourselves, she said. Indeed, we had been here before. Measures such as isolating sick patients were deployed as far back as in the late 19th century Bengal to contain infectious diseases such as smallpox. These control measures were outlined in the Epidemic Diseases Act, 1897 — an act that has been invoked through the pandemic.

Eerie parallels

But the parallels don’t end there. *Dreadful Diseases in Colonial Bengal: Cholera, Malaria and Smallpox*, edited by Suranjan Das and Achintya Kumar Dutta, is a sobering reminder also of the patterns of public health crisis that have plagued India. The book is third in a documentation project on ‘Western medicine and indigenous society: History of Disease, medicine and public health in Colonial Eastern India (1757-1947)’; the first was on the context in which hospitals were established in Calcutta during the British East India company’s rule, while the second focused on TB in 20th century India.

By examining public health records (1926-1942) from the three epidemics (mentioned in the book’s title), Das and Dutta bring to the fore the public health crisis in Bengal primarily due to colonial apathy, and the toll it took on the local people. As epidemic after epidemic raged across colonial Bengal, issues such as lack of enough hospital beds, fewer doctors and nurses, poor allocation of funds for public health (despite huge revenues accrued by the colonial government), shortages of essential drugs (such as quinine used to treat malaria) and an inequitable access to health services, meant thousands of lives were lost. What is striking is that some of the major public health challenges as laid bare by the three epidemics then — and a pandemic now — have persisted. For instance, similar chaotic scenes of lack of hospital beds, medicines and oxygen were witnessed in India during the second wave of COVID-19.

The authors argue that the basic fallacy of colonial policy was the ‘band-aid’ approach taken by the administration to deal with the deadly diseases. “Certain preventive and curative measures were adopted only when epidemics broke out, instead of adopting long-term anti-epidemic policies, or public health development schemes,” they write of the time. Basic sanitary schemes proposed by British experts to help tackle malaria were disregarded by the colonial government, citing a lack of funds. Records from the time also suggest that the vaccination programme to prevent smallpox, too, posed several challenges such as vaccine hesitancy, an urban bias in coverage, and the local populace’s preference for indigenous medicine. Of course, India has overcome many of these issues, its (paediatric) vaccination programme is often cited as a success story. But even so, when it came to delivering COVID-19 vaccines to its adult population, supply bottlenecks due to faulty planning led to inordinate delays.

The pandemic has been a wake-up call for us to address the larger questions of inequities, and push for investment in affordable, quality healthcare systems. As this book shows, history won’t judge us kindly if we don’t make the right choices.

Dreadful Diseases in Colonial Bengal: Cholera, Malaria and Smallpox; Edited by Suranjan Das, Achintya Kumar Dutta, Primus Books, ₹1,250.

The reviewer writes on gender and public health: 92% of COVID-19 deaths in 2022 have been among unvaccinated: ICMR

An RT-PCR test for COVID-19 being done at Azadpur Chowk in New Delhi on March 3, 2022.

An RT-PCR test for COVID-19 being done at Azadpur Chowk in New Delhi on March 3, 2022. | Photo Credit: SUSHIL KUMAR VERMA

ICMR chief Balram Bhargava urged students coming from Ukraine to get vaccinated immediately if they had not already done so.

In 2022, 92% of COVID deaths have been in unvaccinated individuals, Director General of the Indian Council of Medical Research (ICMR) Dr. Balram Bhargava said on Thursday. He added that it's evident that vaccines and the wide vaccination coverage have played a very important role in protecting hundreds of lives.

Dr. Bhargava was speaking at the weekly Health Ministry press conference on COVID .

Also addressing the press, Ministry spokesperson and Joint Secretary, Luv Aggarwal said, "All required support will be given to students and other people returning to India from Ukraine." Dr Bhargava added that all students coming from Ukraine must get vaccinated immediately if they had not already done so. Stating that COVID vaccine has protected the nation from a surge in the number of cases, member, NITI Aayog member, Dr V.K. Paul said India is in a vaccine-protected, low corona stage and hence it is rational to open schools, businesses etc.

"Responsibility to ensure surveillance is intact and to wear masks," he added.

The Health Ministry noted that the India currently is in a positive stage when compared to other countries. Mr. Aggarwal said, "With 11,302 average cases reported in the week ending March 1, India contributed to only 0.7% of global cases. Only a single State has over 10,000 active cases and two States have between 5,000 to 10,000 active cases. Remaining States have less than 5,000 active cases. Kerala, Maharashtra, Mizoram accounts for 50% of active cases of the country," he said. He further explained that a continuous decrease in cases across the world has been recorded and India reported a sharp decline of 96.4% in the number of cases as compared to the world average of 55.7%.

"The overall spread during the third surge was 42 days as compared to the overall spread of 117 days during the second surge of COVID. India reported a sharp decline in deaths reported (76.6%) as compared to the world (22.8%)," said Mr. Aggarwal.

ICMR

**92% of COVID-19 deaths in 2022 have been among unvaccinated:
ICMR(The Hindu:20220307)**

<https://www.thehindu.com/news/national/92-of-covid-deaths-in-22-have-been-among-unvaccinated-icmr/article65187107.ece>

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