News from here and there

Report of the National Task Force on Mental Health and Well-being of Medical Students, 2024

On 26 April 2024, a public notice was issued by the National Medical Commission (NMC) that the anti-ragging cell in NMC had constituted a National Task Force on the 'mental health and well-being of medical students'. Initially, in-person visits to various medical colleges were conducted, where focus group discussions were held with administrators, heads of departments, and students. This Task Force conducted an online survey (*n*=37 962 respondents) among undergraduate (UG; *n*=25 590) and postgraduate (PG; *n*=5337) medical students, as well as the faculty (*n*=7035) in medical colleges (using Google forms) which was completed by 3 May 2024. Subsequently, a meeting was organized in hybrid mode, with representatives of the Federation of Resident Doctors Association India (FORDA), Resident Doctors Association (RDA) and Association of Doctors and Medical Students (ADAMS), to seek opinions. Additionally, the task force integrated insights from several relevant government documents and engagements. The report of the National Task Force on Mental Health and Well-being of Medical Students, 2024 was released by NMC on 14 August 2024.

The report stated that 84% of PG medical students experienced 'moderate to very high' stress-levels, while 64% said that workload adversely affected their mental health and well-being. It was also noted that an 'alarmingly high' 27.8% of UG and 15.3% of PG medical students had voluntarily indicated having a diagnosed mental health disorder, and 16.2% UG students and 31.2% PG students reported having had suicidal ideation. Among PG medical students, 19% had expressed the need to alleviate stress through substance use. Long working hours, continuous duty days, and inadequate infrastructure and support were identified as the key factors contributing to the stress. The report also documented that high expense of medical education was linked to stress. A large majority of PG medical students (72.2%) expressed that their stipend was insufficient. Discrimination (31% PG medical students) and fear of failure (51.6% UG medical students) were other factors profoundly affecting the mental health of the medical students.

The core recommendations of the Task Force included universal recommendations for medical colleges, medical students, their family members and faculty members; identification of high-risk groups and referral; and recommendations for persons with mental illness and attempted suicide. Recommendations for medical colleges included conducting an orientation programme at the time of joining; involving family members during the induction programme; anti-ragging measures; organizing awareness campaigns to educate students and faculty about mental health issues; implementing a 24/7 support system in the campus; providing free treatment including medicines for the physical and mental health issues of medical students in the campus; proper security measures including closed-circuit television monitoring; provision of basic amenities to medical students including common rooms, gymnasiums, sports and other recreational facilities and a 24/7 available cafeteria. Other measures included regulation of type of duty and teamwork; supporting families and childcare; ensuring fair and unbiased examination evaluation of medical students; documenting feedback; mentor–mentee programmes; transparent and responsive grievance redressal and removing fees for the repetition of semesters in medical colleges. Other recommendations were to grant a 10-day vacation at least once a year to both UG and PG medical students on a rotational basis; reducing access to means for suicide on medical college campuses; increasing the number of PG and super-specialty seats in India; employing an adequate number of senior residents; removal of seat-leaving bond (both UG/PG seats); removal of compulsory rural service bond; a trial observership (for UGs) or residency (for PGs) period so as to provide medical aspirants with first-hand experience of the college and medical/specialty field, and department environment. Use of technology in training medical students; enhancing library facilities; offering optional courses; inviting part-time faculty from various fields (outside of medicine); a linguistic proficiency policy to overcome language barriers; reintroduction of supplementary examinations; establishing a centre for training of medical teachers, addressing the vexing issue of ghost faculty; career counselling and campus recruitment; establishing health universities; establishment of a centre for innovation, incubation, collaboration, accelerator, research, entrepreneurship, and medical device development; collaborations with local organizations; yoga in promoting and preventing mental illness and developing resilience for medical students and medical teachers; enhancing physical fitness and sports activities, and starting a Sâmâjika Sanskriti Campus Council were other suggestions.

For medical college faculty, key recommendations included uniform pay-scale (equivalent to the premier institutions), prohibiting private practice for medical teachers, uniform retirement and rotational headship. The Task Force also recommended that the NMC establish a national portal for grievance redressal.

ALLADI MOHAN, *Tirupati, Andhra Pradesh*
ORCID iD: 0000-0002-3214-9884

Dr B.N. Gangadhar appointed Chairperson of the National Medical Commission (NMC)

The appointment committee of the cabinet, Government of India, on 3 July 2024, appointed Dr B.N. Gangadhar as Chairperson of the NMC. Dr Gangadhar was the interim chairperson of the NMC from 25 September 2023, when he took over from Dr Suresh Chandra Sharma. At this time, Dr Gangadhar was serving as President of the Medical Assessment and Rating Board (MARB).

Dr Gangadhar is a senior professor of psychiatry and a former director of the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, with over three decades of expertise in mental health. He obtained his MBBS degree in

1978 from Bangalore Medical College and went on to complete his MD in Psychiatry from NIMHANS in 1981. Subsequently, he became a faculty member of NIMHANS in 1982.

The committee has also appointed Dr Sanjay Behari, neurosurgeon and Director of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, as the President of the MARB. Dr Anil D'Cruz, Director (Oncology) of Apollo Hospital, Mumbai, has been appointed as a full-time member of the Post-Graduate Medical Education Board (PGMEB), Additionally, Dr Rajendra A Badwe, Professor Emeritus at Tata Memorial Centre, Mumbai, has been appointed as a part-time member of the Under-Graduate Medical Education Board (UGMEB). All the appointments are for a period of 4 years (2 years in the case of Dr Badwe), or until the appointee reaches the age of 70, or until further orders, whichever is first.

The NMC was constituted by an Act of Parliament, called the National Medical Commission Act of 2019, on 25 September 2020, for regulating medical education, medical institutes and professionals, and medical research. It replaced the Medical Council of India (MCI) that had been established in 1934 under the Indian Medical Council Act of 1933. The NMC was constituted to bring in much-needed changes to the Indian medical education sector, and to tackle the issues of corruption that had been plaguing the MCI for long.

The NMC has four boards, namely, the UGMEB, PGMEB, MARB, and the Ethics and Medical Registration Board (EMRB). UGMEB and PGMEB are responsible for planning standards, guidelines, curricula, and for granting recognition for UG and PG medical quantifications, respectively. MARB levies penalties on those medical institutions that fail to meet the minimum standards laid down by UGMEB and PGMEB. It is also responsible for granting permission for the establishment of new medical institutions, increasing the seat intake, and starting of new PG medical courses. EMRB keeps a national register of all licensed medical doctors, and also regulates their professional conduct. Only those medical practitioners who have registered in the EMRB are allowed to practice professionally within the country. EMRB also maintains a separate register of community health providers.

P.M. NISCHAL, *Mysuru, Karnataka*
ORCID ID: 0000-0003-3491-5500

Increasing body of evidence that microplastics breach blood–brain barrier in humans

Microplastics (polymer-derived particulates with diameters between 1 nanometer to 500 micrometers) have increasingly been identified in the environmental air, drinking water, sea bed and in processed food items that we consume. Microplastics have been the subject of growing scrutiny for their effects on the gut biome-inflammatory pathway and on autoimmune disorders. There is now data which suggests that these tiny by-products of plastic production cross the human blood–brain barrier as well.

In a study of 51 autopsy samples collected from the Office of the Medical Investigator in Albuquerque, New Mexico, USA, between 2016 and 2024, Matthew Campen and colleagues analysed human brain, liver and kidney tissue for 12 plastic polymers by pyrolysis gas chromatography-mass spectrometry and then used transmission electron microscopy to verify the size of the isolated particles. The tissues from 2016 included 17 samples from men and 10 from women. The specimens from 2024 were from 13 men and 11 women, all of whom were between 50.0 (11.4) years and 52.3 (16.8) years of age. The research paper, which is still under peer review and is available as preprint, posted online by National Institutes of Health (Campen M, Nihart A, Garcia M, Liu R, Olewine M, Castillo E, *et al*. Bioaccumulation of microplastics in decedent human brains assessed by pyrolysis gas chromatography-mass spectrometry. *Res Sq* [Preprint]. 2024 May 6:rs.3.rs-4345687. doi: 10.21203/rs.3.rs-4345687/v1. PMID: 38765967; PMCID: PMC11100893) showed that all organs exhibited increases up to 50% in the concentration of plastic polymers in 2024 as compared to 2016, with brain tissue showing 30 times as much deposition as the other 2 organs.

Some of the mechanisms that have been proposed for the higher-than-expected presence of microplastics in the brain include high blood flow in the brain comprising 25%–30% of cardiac output, slower cellular turnover of brain cells and high lipid content in brain parenchyma, which acts as a depot for the microplastics. This study comes in the wake of a plethora of recent research papers, all of which have shown evidence of shard-like microplastic and nanoplastic pieces in human organs, including lung, placenta, reproductive organs, knee and elbow joints, blood vessels and bone marrow. Current data suggests that microplastics may be a source of oxidative stress, that in turn causes cardiovascular disease, fertility issues, cancers, alterations in immune and endocrine pathways, and impairment of mental faculties related to memory and learning in humans.

While there are currently no standardized global recommendations related to the size and chemical composition of plastic particles in food or water, environmental protection agencies and government organizations across the world have identified the escalating health risk posed by increased human exposure to plastics, microplastic and nanoplastics. Several of these governmental and non-governmental bodies are currently exploring guidelines for detection and measurement of environmental hazards and human diseases linked to increasing environmental plastic pollution.

MAHARRA HUSSAIN, *United Arab Emirates*
ORCID iD: 0000-0001-7632-0631