Perinatal depression linked with long-term suicide risk and all-cause mortality

Perinatal depression, either antenatal (during pregnancy) or postpartum, affects 10% to 20% of pregnant women and is linked with numerous adverse health outcomes. One such outcome, suicide, accounts for as many as 20% of postpartum deaths in high-income countries. In two new studies, researchers used a Swedish dataset to investigate overall mortality and suicidal behavior (attempted or completed suicide) in women with perinatal depression.

A total of 86,000 women with a first diagnosis of perinatal depression who received specialized care or antidepressant medication were matched by age and year of delivery with 865,000 unaffected controls. To address potential familial confounders, 24,000 affected women were compared with 250,000 unaffected full sisters.

During a median 7 years of follow-up, affected women had significantly greater mortality than unaffected women (adjusted hazard ratio, 2.11), independent of pre-existing psychiatric conditions. Risk for suicidal behaviour was also significantly greater among affected women (aHR, 3.15), with a somewhat higher risk among those without pre-existing psychiatric conditions than among those with such conditions. Elevated risks for both all-cause death and suicide were most pronounced in the first year after diagnosis and were still significant 18 years later. Comparisons between sisters yielded similar results.

Perinatal depression can have devastating consequences and is easily missed without formal screening. The American College of Obstetricians and Gynecologists recommends universal screening at the initial prenatal visit, later in pregnancy, and at postpartum visits, along with effective treatment for affected patients. The Edinburgh Postnatal Depression Scale, a standard screening tool for perinatal depression, is available online.

Video gamers worldwide may be risking irreversible hearing loss

STAR HEALTH REPORT

Video gamers worldwide may be risking irreversible hearing loss and/or tinnitus—persistent ringing/buzzing in the ears—finds a systematic review of the available evidence, published in the open access journal BMJ Public Health.

The sound levels reported in different studies of more than 50,000 people often near, or exceed, permissible safe limits, conclude the researchers. And given the popularity of these games, greater public health efforts are needed to raise awareness of the potential risks, they urge.

While headphones, earbuds, and music venues have been recognised as sources of potentially unsafe sound levels, relatively little attention has been paid to the effects of video games, including e-sports, on hearing loss, say the researchers.

Gamers often play at high-intensity sound levels and for several hours at a time, they add. And one estimate indicates that there were more than 3 billion gamers worldwide in 2022.

Reported sound levels ranged from 43.2 decibels (dB) (mobile devices) up to 80-89 dB (gaming centres) while length of noise exposure varied by mode and frequency of access–from daily to once a month, for at least an hour at a time, averaging 3 hours/week.

Impulse sounds consist of bursts lasting less than 1 second, with peak levels at least 15 dB higher than the background sound. One study reported that impulse sounds reached levels as high as 119 dB during game play; permissible exposure limits are around 100 dB for children and 130–140 dB for adults.

The International Telecommunication Union (ITU), in collaboration with the World Health Organisation, describes a time–intensity trade-off, known as an exchange rate, for permissible levels and duration of exposure, explain the researchers.

PHOTO: TAREQ SALAHUDDIN

For example, a permissible noise exposure level of 80 dB for 40 hours a week with a 3 dB exchange rate means the permissible exposure time halves with every 3 dB increase in noise level: at 83 dB it is 20 hours; at 86 dB it is 10 hours; at 92 dB it is 2.5 hours; and at 98 dB it is 38 minutes.

For children, the permissible noise exposure level is defined as 75 dB for 40 hours a week. Children can therefore safely listen to an 83 dB sound for around 6.5 hours, 86 dB for around 3.25 hours, 92 dB for 45 minutes, and 98 dB for only 12 minutes a week, explain the researchers.

Six studies reported on video gaming prevalence among young people, which ranged from 20% to 68%. Two South Korean studies reported a prevalence of gaming centre use at around 60%.

Another large observational study reported that video gaming was associated with increased odds of self-reported hearing loss severity.

One study reported that over 10 million people in the USA may be exposed to 'loud' or 'very loud' sound levels from video or computer games.

One study measured sound levels of 5 video games through headphones attached to the gaming console, and found that these averaged 88.5, 87.6, 85.6 and 91.2 dB for 4 separate shooter games, and 85.6 dB for a racing game.

An additional 16 peer-reviewed articles and 14 grey literature sources mention gaming as a potential source of excessive sound exposure.

One grey literature source sought to discover gamers' preferred listening levels while wearing headphones. The author concluded that gaming headphones can reach unsafe listening levels, "which could place some gamers at risk of sound-induced hearing loss."

Three studies evaluated gender differences in gaming behaviours. Altogether, these indicated that boys played video games more often than girls, for longer periods of time, and at higher sound intensity levels.

The researchers acknowledge that some of the included studies date back to the early 1990s, and only 2 published in the past 10 years objectively measured average sound levels from video games or at gaming centres, although both reported high sound levels in these circumstances.

"The findings suggest that there may be a need to prioritise interventions, such as initiatives focused on education and awareness of the potential risks of gaming, that can help promote safe listening among gamers," they suggest.

Source: *World Health Organisation*

HAVE A NICE DAY

Superiority in a spouse

DR RUBAIUL MURSHED

A lovely relationship starts as gently as the wind. The refrain "I can't help falling in love with you" appears in a lot of poetry and music. However, maintaining that bond is another story. It is a whole other ballgame to keep the relationship pleasant, especially after marriage.

Respecting each other's decisions is a key ingredient in a happy marriage. Dishonouring one's partner's viewpoints is the first sign of a toxic relationship. Harmful to one's emotional well-being are acts of defamatory and crude behaviour. Negative emotions of humiliation destroy feelings for each other and eventually make it difficult to overcome the silent mental trauma.

It can be challenging to find a balance between work and personal life; unplanned commitments and unforeseen obligations can make him or her feel down. In such a situation, a partner's role is to provide a shoulder to cry on and ensure that the partner feels valued. If a partner suffers from a superiority complex, that can cause him or her to act proud and arrogant toward others who disagree with them.

On the other hand, a superiority complex could be a cover for low self-worth or an inferiority complex. Whether in terms of intellect or physical fitness, the distribution of aptitude and capabilities between partners may not always be equal. Nevertheless, such differences typically do not lead to internal conflicts. These societal, ephemeral criteria should not be used to label one person as superior and wise. Having a great deal of wealth or an extensive list of academic achievements does not guarantee superiority.

To be truly unique, wiser than others, and a potential mentor, one must be free from 'dark human nature,' defined as unkindness, unforgiving arrogance, shallow knowledge, and a lack of steadfastness in the culture of giving.

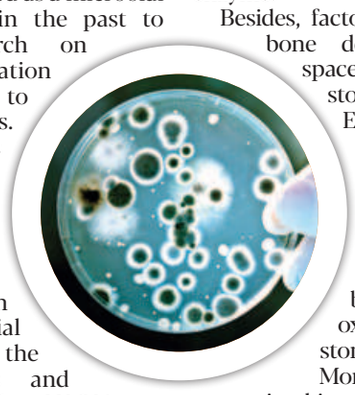
E-mail: rubaiulmurshed@shomman.org

The roles of microbes in space from a health perspective

DR SABBIR RAHMAN SHUVO

The survivability tests of microbes in space conditions started more than 90 years ago. The early experiments utilised balloon flights and rocket payloads to expose the microorganisms in spaceflight conditions. In 1966, the National Aeronautics and Space Administration (NASA) performed experiments on microbes by exposing them to space conditions. The resilience of those organisms was poor due to the radiation of the space.

Since then, the initiation of the International Space Station (ISS) expeditions in 2000 in Low Earth Orbital (LEO) has enhanced the scope of advanced research on microbes. The closed system in ISS acted as a microbial testing facility in the past to conduct research on microbial adaptation and resilience to space conditions. Microorganisms must acclimate primarily to radiation and microgravity to survive in space. This adaptation can be beneficial or harmful for the crew members and spacecraft. Besides, NASA's plan to return humans to the lunar surface and Mars by 2033 enhances the requirement to understand the roles of microbes in space from the health point of view.



Exploiting and engineering microbes essential for human health can be utilised to address limited resources and potential health risks for deep space exploration. This self-sufficiency can be achieved by implementing bio-regenerative life support systems (BLSS). Microbes, primarily microalgae, play significant roles in BLSS by providing oxygen, fatty acids, minerals, proteins, carbohydrates, and vitamins for a balanced diet.

The presence of microorganisms with enhanced virulence in space missions could increase the risk of crew members contracting infections. Bacterial infections are generally treated with antibiotics, but the formation of biofilms and propagation of multi-drug resistance microbes in spaceflight environments limit these therapeutic options.

Additionally, antibiotic-associated diarrhoea may arise in space as a side effect of administering antibiotics to treat infections. Engineered microorganisms can be a promising alternative to overcome serious health issues in space. Engineered yeast probiotics reduce inflammation in IBD by reducing the extracellular adenosine triphosphate (eATP) by secreting the eATP-degrading enzyme.

Besides, factors like increased bone decalcification in space may cause kidney stone diseases. Engineered bacteria can produce oxalate decarboxylase enzyme, which has shown efficacy in breaking down oxalate in kidney stones.

Moreover, the gut microbiome can affect general physiological responses, immunity, and health. Genetically modified microorganisms alter the microbiome's composition and inhibit opportunistic pathogens' growth.

Our understanding of microbial life in space has come miles, from early balloon tests to the ISS lab. Maintaining a healthy astronaut microbiome and harnessing the power of engineered microbes will be vital for future deep space exploration. The imminent of space travel may be tiny, but its impact could be gigantic.

***Sabbir Rahman Shuvo**, PhD is an Assistant Professor at the Department of Biochemistry & Microbiology at North South University, Dhaka. E-mail: sabbir.shuvo@northsouth.edu*

Metformin decreased dementia risk in older adults with type 2 diabetes mellitus

Type 2 diabetes is a risk factor for dementia. Researchers analysed data from Taiwan's National Health Insurance Research Database (NHIRD) to assess whether treatment for type 2 diabetes affected dementia risk in adults ≥60 years old with type 2 diabetes mellitus on treatment. Diabetes diagnosis, type of anti-diabetic medication used, and dementia classification were based on NHIRD records.

Among 14,558 participants, the average age at diabetes diagnosis was 71 years for both metformin users and non-users. Nine percent of metformin users and 15% of non-metformin users developed dementia over 5 years. The most prevalent non-metformin medications included sulfonylureas, alpha-glucosidase inhibitors, dipeptidyl peptidase-4 inhibitors, and insulin.

Metformin use decreased the risk for dementia by 34% in a dose-response relationship after adjustment for covariates compared with nonuse of metformin. This decreased risk for dementia for metformin users remained significant after additional analyses.

The results of this study suggest that metformin can decrease dementia risk in older adults with type 2 diabetes mellitus. The authors propose that metformin's ability to cross the blood–brain barrier may be a contributing mechanism.