

DAILY TOOTHBRUSHING IN ICU A simple strategy to reduce pneumonia risk and improve patient outcomes

Hospital-acquired pneumonia (HAP) is a common infection associated with adverse outcomes, particularly in intensive care units (ICUs). Traditionally, chlorhexidine oral care has been used for prevention, but its effectiveness has been questioned.

A recent meta-analysis of 15 randomised trials explored the impact of daily toothbrushing as an alternative strategy for HAP prevention. The study included nearly 2,800 patients, with approximately 80% in ICUs. Intervention groups underwent toothbrushing and tongue brushing with chlorhexidine or plaque-removing toothpaste two to four times daily, while control groups received oral care with chlorhexidine swabbing (without toothbrushing) twice daily. The findings revealed that toothbrushing significantly lowered the risk of HAP by 33% and reduced the ICU death risk by 19%.

The benefits were particularly notable for patients receiving invasive mechanical ventilation. Moreover, toothbrushing was linked to fewer days of mechanical ventilation (reduced by 1.2 days) and a shorter ICU length of stay (reduced by 1.8 days). Notably, the positive effects of toothbrushing were consistent even with twice-daily brushing.

This study, published in the JAMA Internal Medicine, suggests that incorporating toothbrushing into ICU oral care routines could be a valuable strategy to prevent HAP and improve patient outcomes, offering a simpler and potentially more effective approach than previous practices.



Global commitment to eliminate cervical cancer: targets, progress, and impact

STAR HEALTH DESK

January is cervical cancer awareness month. Globally, cervical cancer is the fourth most common cancer in women, with 604,000 new cases in 2020. About 90% of the 342,000 deaths caused by cervical cancer occurred in low- and middle-income countries. Women living with HIV are six times more likely to develop cervical cancer compared to the general population, and an estimated 5% of all cervical cancer cases are attributable to HIV. The contribution of HIV to cervical cancer disproportionately affects younger women, and as a result, 20% of children who lose their mother to cancer do so due to cervical cancer.

Causes: Human papillomavirus (HPV) is a common sexually transmitted infection affecting the skin, genitals, and throat that is often asymptomatic. Risk factors include HPV type oncogenicity, immune status, other STIs, number of births, young age at first pregnancy, hormonal contraceptive use, and smoking.

Prevention: Public awareness and access to information are vital for preventing and controlling cervical cancer. Vaccination at ages 9-14 is highly effective in preventing HPV infection and related cancers. Starting screening at 30 (25 for women with HIV) detects cervical disease, preventing the progression to cancer through timely treatment. Early detection at any age, coupled with quality treatment, offers the potential for curing cervical cancer. These strategies underscore the importance of a comprehensive approach across the life course for effective prevention and control.

HPV vaccination and other prevention steps: As of 2023, six globally available HPV vaccines effectively protect against high-risk types 16 and 18, major causes of cervical cancer. Administered primarily to girls aged 9-14 before sexual activity, the vaccine can be given in 1 or 2 doses, with those with weakened immune systems recommended in 2 or 3 doses. Some countries vaccinate boys to further reduce HPV prevalence and prevent associated cancers. Additionally, preventing HPV infection involves being a non-smoker, using condoms,



and considering voluntary male circumcision.

Cervical screening and treatment of precancer: Women should be screened for cervical cancer every 5-10 years, starting at age 30. Women living with HIV should be screened every 3 years, starting at age 25. The global strategy encourages a minimum of two lifetime screens with a high-performance HPV test by age 35 and again by age 45. Precancers rarely cause symptoms, which is why regular cervical cancer screening is important, even if you have been vaccinated against HPV.

After a positive HPV test (or other screening method), a healthcare provider can look for changes on the cervix (such as precancers), which may develop into cervical cancer if left untreated.

Treatment of precancers is a simple procedure and prevents cervical cancer. Treatment may be offered in the same visit (the see and treat approach) or after a second test (the see, triage, and treat approach), which is especially recommended for women living with HIV.

Treatments for precancer are quick and generally painless, causing infrequent complications.

A global response: Globally, countries are committed to eliminating cervical cancer as a public health concern, defined by the World Health Organisation (WHO) as reducing new cases to 4 or fewer per 100,000 women annually. The WHO's Global Strategy outlines three targets to achieve by 2030, including 90% HPV vaccination for girls by age 15, 70% high-quality screening for women aged 35-45, and 90% treatment for women with cervical disease. Modeling estimates project the potential to avert 74 million new cases and prevent 62 million deaths through reaching these goals. The prevention of HPV-associated cancers aligns with broader global health sector strategies, emphasizing a comprehensive approach to combating infectious diseases. Additionally, the World Health Assembly resolution includes actions addressing mouth and throat cancers, underscoring the interconnectedness of health initiatives.

Source: World Health Organisation



HAVE A NICE DAY Gaslighting - Part 1

DR RUBAIUL MURSHED

Have you seen the classic movie 'Gaslight' in which Ingrid Bergman played a crucial role and not only became famous but also popularised the term 'Gaslighting', depicting psychological manipulation so vividly that it is now widely used to describe similar behaviour in real life?

Although gaslighting is getting more attention nowadays, it has always been a detrimental and damaging form of interpersonal abuse. Unfortunately, it is prevalent, occurring more frequently than many may realise. In 2022, Merriam-Webster recognised "gaslighting" as the Word of the Year, underscoring its increased prevalence in the English language.

The modern definition describes it as a psychological manipulation where one person seeks to control another by convincing them to accept a distorted reality. Gaslighters enjoy putting down their partners or colleagues in front of children, friends, or colleagues, finding joy in taking control and proving their superiority. They enjoy instigating conflicts and derive excitement from witnessing the quarrels or disputes they have caused.

It is a classic mind game that involves making and then denying promises, often with awareness but sometimes unintentionally.

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Uncovering the genetic basis of diarrhoea

In the realm of biomedical research, understanding the genetic causes of diseases has been a longstanding pursuit. Diseases such as Huntington's, sickle cell anaemia, and muscular dystrophy have been linked to mutations in single genes, providing valuable insights into the intricate relationship between genetics and health. However, for most diseases, the picture is more complex, involving variations across multiple genes and environmental factors. Genome-wide association studies (GWAS) have emerged as a powerful tool to explore the genetic underpinnings of various diseases. These studies compare the genetic makeup of individuals with a particular condition, such as diarrhoeal diseases, to those without, identifying key genetic variants associated with susceptibility or protection.

Bangladesh's role in diarrhoeal disease research:

Bangladesh, a country grappling with endemic diarrhoeal pathogens like Rotavirus, Shigella, and Vibrio cholerae, has become a focal point for groundbreaking genetic studies. Researchers from ICDDR,B, in collaboration with others, have utilised three birth cohorts to investigate the genetic variants influencing susceptibility to diarrhoeal diseases. These cohorts, namely the Dhaka Birth Cohort, PROVIDE, and Cryptosporidiosis Birth Cohort, provide valuable genome-wide data and stool samples for surveillance.

Recent discoveries in genetic variants:

A study published in the Journal of Infectious Diseases in March 2023 delved into the influence of genetic variation on the frequency and duration of diarrhoea in infants. Identifying three protective variants, the study shed light on genomic regions related to intestinal inflammation and the control of intestinal blood flow. Earlier studies by the same group revealed genetic variants associated with Shigella-associated diarrhoea and Entamoeba histolytica infection. These findings contribute to understanding the biological mechanisms that underlie susceptibility to different infectious diseases, offering potential avenues for novel therapeutics.

The evolutionary puzzle: Why do

these variants exist?

The diversity in individual responses to diarrhoeal pathogens suggests a complex interplay between genetics and environmental factors. It's possible that pathogens have exerted strong selection on human populations, favouring the spread of variants that provide protection. This notion is supported by the 2013 study on cholera, which identified variants associated with susceptibility and underwent strong past selection in the Bangladeshi population.

Colistin resistance: A growing public health concern:

In a recent development, researchers uncovered the presence of Colistin-resistant Escherichia coli (E. coli) in Dhaka city sludge, a last-resort antibiotic widely used in the poultry industry in Bangladesh. This multidrug-resistant bacterium, resistant to 11 antibiotics, carries the mcr-1 gene—an alarming indication of antibiotic resistance. Overuse of Colistin in poultry farms, estimated at 30 percent in Bangladesh, contributes to the rise of multidrug-resistant bacteria. Urban sludge disposal into water bodies further amplifies the environmental presence of antibiotics, posing a serious threat to humans and animals.

The one health approach:

The interconnectedness of human, animal, and environmental health underscores the need for a one-health approach. Widespread faecal-oral contamination, coupled with antibiotic residues entering the food chain, intensifies the risk of rapid transmission of multidrug-resistant pathogens. The study strongly advocates broader surveillance in both clinical and environmental settings to prevent the further spread of bacteria carrying mcr-1. It calls for urgent measures to ensure rational antibiotic usage, monitoring of clinical settings, and proper disposal systems to safeguard against the looming threat of antibiotic resistance.

As we navigate the intricate landscape of genetics, infectious diseases, and antibiotic resistance, these discoveries emphasise the urgency of responsible antibiotic use and environmental stewardship. Our actions today will determine our ability to combat diseases in the future.



Gaza faces unprecedented hunger crisis; urgent humanitarian ceasefire needed

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The Integrated Food Security Phase Classification (IPC) partnership, including the World Health Organisation (WHO), warns of catastrophic food insecurity in Gaza, with an alarming 93% of the population facing crisis hunger levels. At least 1 in 4 households is experiencing extreme food scarcity, resorting to selling possessions for a basic meal.

Desperation is palpable, even in hospitals. Infectious diseases are rampant, with over 100,000 cases of diarrhoea reported since mid-October—a 25-fold increase among young children. Respiratory infections, meningitis, skin rashes, and chickenpox are surging.

Malnutrition heightens the risk of children succumbing to illnesses, while wasting can have lasting impacts on growth and cognitive development. Displacement of over 1.9 million people, overcrowded shelters, and a crumbling health system create a perfect storm for disease spread.

With one shower for every 4,500 people and limited sanitation, infectious diseases become inevitable. Access to health services has plummeted due to the conflict, leaving those grappling with hunger and disease with limited options.

The people of Gaza face the dual threat of starvation and easily treatable diseases, underscoring the urgent need for increased humanitarian aid. WHO reiterates the call for an immediate ceasefire to facilitate the flow of essential aid and alleviate the escalating crisis.




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