Star health

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e-mail: starhealth@thedailystar.net

Protecting children from environmental hazards

DR MD RAJIB HOSSAIN

Children are exposed to serious health risks from environmental hazards. Over 40 percent of the global burden of disease attributed to environmental factors falls on children below five years of age, who account for only about 10 percent of the world's population.

Environmental risk factors often act in concert, and their effects are exacerbated by adverse social and economic conditions, particularly conflict, poverty and malnutrition. Timely action needs to be taken to allow them to grow up and develop in good health, and to contribute to economic and social development.

Polluted indoor and outdoor air, contaminated water, lack of adequate sanitation, toxic hazards, disease vectors, ultraviolet radiation and degraded ecosystems are all important environmental risk factors for children and in most cases for their mothers as well.

Particularly in developing countries like Bangladesh, environmental hazards and pollution are a major contributor to childhood deaths, illnesses and disability from acute respiratory disease, diarrhoeal diseases, physical injuries, poisonings, insect-borne diseases and perinatal infections.

Childhood death and illness from causes such as poverty and malnutrition are also associated with unsustainable patterns of development and degraded urban or rural environments.

Major environment-related killers in children under five years of age

- Diarrhoea kills an estimated 1.6 million children each year, caused mainly by unsafe water and poor sanitation.
- Indoor air pollution associated with the still-widespread use of biomass fuels kills nearly one million children annually, mostly as a result of acute respiratory infections. Mothers, in charge of cooking or resting close to the hearth after having given birth, are most at risk of developing chronic respiratory disease.
- Malaria, which may be exacerbated as a result of poor water management and storage, inadequate housing, deforestation and loss of biodiversity, kills an estimated one million children under five annually, mostly in Africa.
- Unintentional physical injuries, which may be related to household or community environmental hazards, kill nearly 300000 children annually: 60000 are attributed to drowning, 40000 to fires, 16000 to falls, 16000 to poisonings, 50000 to road traffic incidents and over 100000 are due to other unintentional injuries

Health-damaging exposure to environmental risks can also begin before birth.

Lead in air, mercury in food and other chemicals can result in long-term, often irreversible effects, such as infertility, miscarriage, and birth defects.

Women's exposure to pesticides, solvents and persistent organic pollutants may potentially affect the health of the fetus. Additionally, while the overall benefits of breastfeeding are recognised, the health of the newborn may be affected by high levels of contaminants in breast milk. Small children, whose bodies are rapidly developing, are particularly susceptible — and in some instances the health impacts may only emerge later in life.

Furthermore, children as young as five years old sometimes work in hazardous settings. Pregnant women living and working in hazardous environments and poor mothers and their children are at a higher risk, as they are exposed to the most degraded environments, are often unaware of the health implications, and lack access to information on potential solutions.

WHO recognises the need to educate and train health care providers at all levels in the prevention, diagnosis and management of children's diseases linked to environmental risk factors. Efforts are undertaken to enable those "in the front line", the health professionals dealing with children and adolescents' health, to recognise, assess and prevent diseases linked to, or triggered by environmental factors.

With low-cost solutions for environment and health problems can be applied in many cases. For instance, simple filtration and disinfection of water at the household level dramatically improves the microbial quality of water, and reduces the risk of diarrhoeal disease at low cost. Improved stoves reduce exposures to indoor air pollution. Better storage and safe use of chemicals at community level reduces exposures to toxic chemicals, especially among toddlers, who explore, touch and taste the products found at home.

Hygiene and sanitation

Washing hands with soap before food preparation, before meals and after defecating significantly reduces the risk of diarrhoeal disease.

Air pollution

Good ventilation in the home, clean fuels and improved cooking stoves decrease indoor air pollution and the exacerbation and development of acute respiratory infections.

Disease vectors

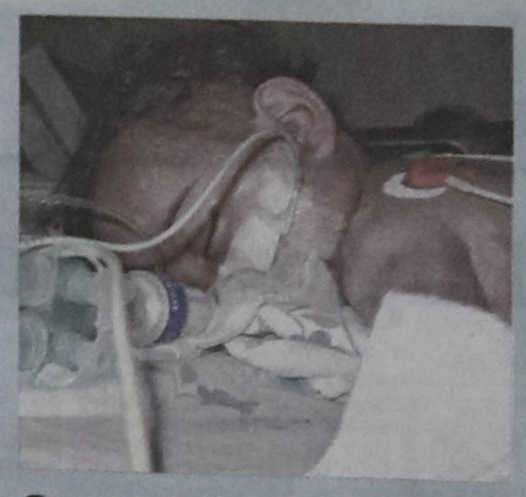
As children usually go to bed earlier than adults at the time mosquitoes become active, the use of insecticide-treated mosquito nets and the screening of windows, doors and eaves provide a very effective means of protecting them against malaria.

Chemical hazards

Ensure safe storage, packaging, use and clear labelling of cleaners, fuels, solvents, pesticides and other chemicals used at home and in schools.

Children are our future, numbering over 2.3 billion worldwide and representing boundless potential. Child survival and development hinge on basic needs to support life; among these, a safe, healthy and clean environment is fundamental.

E-mail: rajibssmc@gmail.com



Cost-effective measures could stop pneumonia deaths

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Implementing measures to improve nutrition, indoor air pollution, immunisation coverage and the management of pneumonia cases could be cost-effective and significantly reduce child mortality from pneumonia, according to a study led by the Johns Hopkins Bloomberg School of Public Health.

Researchers found that these strategies combined could reduce total child mortality by 17 percent and could reduce pneumonia deaths by more than 90 percent. Pneumonia is a leading cause of death of infants in many developing countries, resulting in 2.2 million deaths each year.

The study, conducted in collaboration with the World Health Organisation (WHO) and other public health schools, assessed economic aspects of existing child interventions and identified the most efficient pneumonia control strategies. Programmes to promote better community-based treatment of pneumonia, promotion of exclusive breastfeeding, zinc supplementation and vaccination for Hib and *S. pneumoniae* were found to be the most cost-effective interventions.

The burning of solid fuels like wood, for cooking and heating, was found to contribute at least 20 percent to the burden of childhood pneumonia.

"The interventions we examined already exist, but are not fully implemented in the developing world. In addition, implementation of these interventions do not require a great deal of new infrastructure to carry out," said Louis Niessen, lead author of the study and associate professor in the Bloomberg School's Department of International Health. "Fully funding and implementing these interventions could bring us a big step closer towards reaching the U.N. Millennium Development Goals", he added.

"The next step is to assess how donors and countries currently deliver these interventions and want to progress in the coming years," said Majid Ezzati, PhD, co-investigator of the study and associate professor at the Harvard School of Public Health.

Hidden dangers of plastic containers

MUHAMMAD ARIF

We all have heard that drinking more water is better for our health, but the plastic bottles we drink from may contain dangerous toxins! Some scientific research showed that plastics can emit toxin chemicals that are hazardous to the body.

Harvard School of Public Health researchers report that the plastic bottles in which bottled water is typically sold are made up of toxin polycarbonate which leaches chemical bisphenol A (BPA) leaches. It increases the physiological concentration of this toxic chemical within the body.

"We found that drinking cold liquids from polycarbonate bottles for just one week increased urinary BPA levels by more than two-thirds. If you heat those bottles, as is the case with baby bottles, we would expect the levels to be considerably higher. This would be of concern since infants may be particularly susceptible to BPA's endocrine-disrupting potential," said one of the researchers Karin B Michels of Harvard School of Public Health.

Virtually everything that requires shatterproof, lightweight, clear material that can endure high heat: Reusable food and drink containers, plastic food wrap, eyeglass lenses, medical devices, dental fillings and sealants, helmets, computers, appliances, power tools, CDs, DVDs and carbonless paper used for receipts.

BPA is an endocrine disruptor meaning it disrupts hormone function (BPA acts as a potent estrogen). Studies show laboratory animals exposed to low levels of BPA have increased rates of reproductive problems, decreased sperm count, early puberty, obesity, diabetes, memory and prostate cancers, and neurological problems.

Last year, in the Journal of the American Medical Association, researchers from the US and the UK reported the relationship between urine concentrations of BPA and increased cardiovascular disease, type II diabetes and liver enzyme abnormalities in humans.

Now, Harvard School of Public Health researchers focused on drinking cold beverage from polycarbonate bottles, measured urinary BPA concentration and demonstrated an increase in BPA level. Incidentally, boiling water is known to increase BPA leaching rate up to 55-fold.

BPA is pervasive and can be detected in virtually everybody in the United States. Canada has declared BPA a "toxic chemical" and banned its use in polycarbonate baby bottles in 2008. A few plastic bottle manufacturers have voluntarily removed BPA from their products.

Epidemiological research data warrant the regulatory agencies to pay attention to the growing body of evidence, curb the health hazards posed by BPA and limit human and environmental exposures.

Muhammad Arif is a microbiologist at the Broad Institute of MIT and Harvard University in Cambridge, Massachusetts. E-mail: arif@broad.mit.edu