Climate change, extreme heat and heat waves

Climate change has resulted in sub-Saharan Africa being subjected to frequent and intense extremes in climate over the past few decades. Temperatures are expected to rise faster over southern Africa. Areas of the southwestern region, especially in South Africa (SA) and parts of Namibia and Botswana, are expected to experience the greatest temperature increases. Drier and hotter weather was experienced in SA in the last quarter of 2023 and the first quarter of 2024. The SA Weather Service has indicated that heatwaves will increase in future years.[1] Early October 2024 already saw many parts of the country experiencing heat waves, even before we move into the peak of summer.[2,3] A heatwave 'is a period where local excess heat accumulates over a sequence of unusually hot days and nights'. Because of climate change, heatwaves and prolonged excess heat conditions are increasing in frequency, duration, intensity and magnitude.[4]

The extreme heat and heatwaves in SA have affected many sectors, including agriculture and health. Over the years, we have seen crops decreasing and livestock being lost, with huge threats to food security. Extreme heat affects the body's ability to regulate temperature, primarily through cooling, resulting in, *inter alia*, heat cramps, exhaustion, stroke, hyperthermia, headaches and even death. For example, in 2016, there were 11 deaths due to heat stress recorded in North West Province, and 117 in the Northern Cape.[1] Infectious diseases, including vector-borne diseases, water-borne diseases and food-borne diseases are influenced by temperature and other climatic variables, thereby contributing to higher disease burden and associated healthcare costs.[5] The elderly, infants, children, people with pre-existing conditions, outdoor workers and people with low incomes are most affected.[1] Even low- and moderate-intensity heat waves can impact the health and wellbeing of vulnerable populations.[4]

In July this year, the International Labour Organization (ILO) published its report, 'Heat at work: Implications for safety and health', which warned that more workers are being exposed to heat stress worldwide. The report revealed that regions previously unaccustomed to extreme heat will face increased risks, while regions that already have hot climates will confront even more dangerous conditions. The ILO calls heat stress an invisible and silent killer, with both immediate and long-term effects. The latter include serious heart, lung and kidney problems. According to the report, workers in Africa, the Arab states and Asia and the Pacific are most often exposed to excessive heat, with 92.9%, 83.6% and 74.7% of the workforce being affected, respectively. These figures are above the global average of 71%.[6]

According to the World Health Organization (WHO), awareness of the health risks from heat among health workers and the public is inadequate. Lives can be saved with some planning and practical, feasible and often low-cost interventions at the individual, community, organisational, governmental and societal levels. Simple advice on what the public should do could go a long way in countering the health hazards posed by heat. The WHO Fact Sheet recommends as follows:[4]

'**Stay out of the heat**

- Avoid going outside and doing strenuous activity during the hottest time of day.
- Stay in the shade. Remember that perceived temperatures in the sun can be 10 - 15°C higher.
- Spend 2 - 3 hours during the day in a cool place.
- Be aware of the risk of drowning. Never swim alone.
- Stay informed about official heat warnings.

Keep your home cool

- Use the night air to cool down your home by opening windows after dark when the outdoor temperature is lower than the indoor temperature.
- During the day, when outdoor temperatures are higher than indoors, close windows and cover them with blinds or shutters to block direct sunlight. Turn off as many electrical devices as possible.
- Use electric fans only when temperatures are <40°C/104°F. In temperatures >40°C/104°F, fans will heat the body.
- If using air conditioning, set the thermostat to 27°C/81°F and turn on an electric fan – this will make the room feel 4°C cooler. It can also save up to 70% on your electricity bill for cooling.
- Remember that it may be cooler outdoors in the shade.

Keep your body cool and hydrated

- Use light and loose-fitting clothing and bed linens.
- Take cool showers or baths.
- Wet your skin using a damp cloth, spray, or wet light clothing.
- Drink water regularly (1 cup of water per hour and at least 2 - 3 litres per day).
- Regularly check in with vulnerable people in your circle – especially people >65 years old and those with heart, lung or kidney conditions, a disability and living alone.

Protect infants and children

- Never leave children or animals in parked vehicles for any amount of time, as temperatures can quickly become dangerously high.
- Avoid direct exposure to the sun during peak hours, seeking shade or staying indoors instead. Shade can reduce how hot you feel by more than 10°C.
- Never cover an infant stroller/pram with dry fabric – this makes it hotter inside the carriage. Instead, use a wet, thin cloth, and re-wet as necessary to lower the temperature. Combine with a portable fan for even greater cooling.
- Dress children in lightweight, loose-fitting clothing that covers their skin, and use wide-brimmed hats, sunglasses and sunscreen to protect them from the sun's rays.
- Follow the guidance on keeping your home cool to maintain a safe indoor temperature.'

Climate change and heat continue to cause a cocktail of critical health risks. Heat extremes can worsen chronic conditions, and can also disrupt and compromise essential health services. Awareness of these hazards in both health workers and the public is essential.

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