PRESS RELEASE

MAX PLANCK INSTITUTE
FOR DEMOGRAPHIC RESEARCH

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Population Dynamics and Sustainable Well-Being

Hardest Hit by Heat: Study Exposes Racial Disparities in U.S. Mortality Rates

A new study examines how extreme temperatures in the United States significantly affect mortality among different racial groups and found that both cold and hot days increase mortality rates, with the latter disproportionately affecting underrepresented populations. In particular, Non-Hispanic Blacks experienced higher excess mortality on hot days compared to Whites. The findings highlight the importance of adaptation measures, especially for racial minorities, and call for urgent action and targeted policies to mitigate the health risks of extreme temperatures caused by climate change.

Rostock, Germany. Each passing year, climate change drives summer temperatures to new extremes, with heat records being shattered one after another. In a new study, scientists from the Max Planck Institute for Demographic Research (MPIDR) have examined how extreme temperatures in the US affect the mortality of people from different racial groups. Risto Conte Keivabu, Ugofilippo Basellini, and Emilio Zagheni (director of MPIDR) analyzed data from 1993 to 2005 and examined racial differences in temperature-related deaths. The study found that both extreme cold (temperatures in the coldest 5%) and extreme heat (temperatures in the hottest 5%) increase mortality rates, with heat disproportionate impacting racial minorities.

For their study, the researchers analyzed data from death registries in more than 3,000 U.S. counties and found clear evidence that hot days, in particular, have a disproportionate effect on minority communities. Using these results, the researchers extended their analysis to predict trends from 2006 to 2023, since they do not have data for that period. Their calculations suggest that the recent rise in temperatures has only worsened the racial disparities in heat-related deaths.

Minorities bear the brunt

These disparities are particularly pronounced when looking at the year 2022, one of the hottest summers on record. During this period, researchers calculated that the excess death rate for Non-Hispanic Blacks was about 26 per 100,000, while for whites it was about 15 per 100,000. The study also revealed large geographical differences in such estimates, further highlighting the uneven burden of extreme heat.

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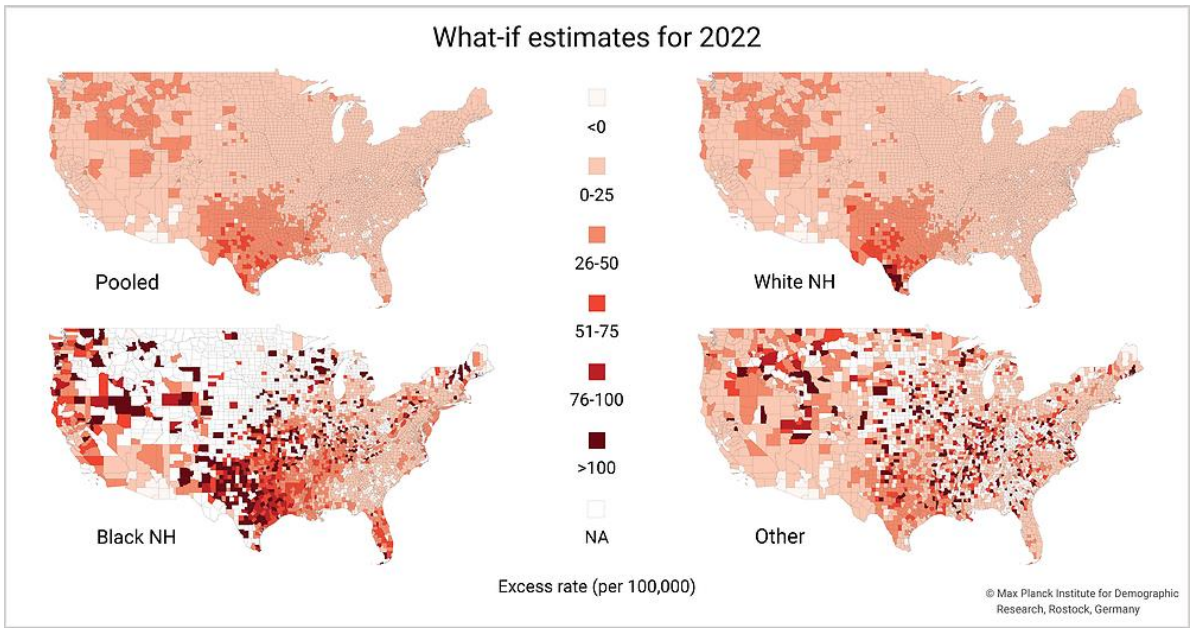

The Maps show the Temperature-Related Excess Deaths (per 100,000) by County Based on Temperatures in 2022. The results show that if temperatures between 1993 and 2005 had been similar to those in 2022, there would have been more deaths. The increase is not the same everywhere - it varies by location or region ("spatial heterogeneity"). The results suggest that the southern regions of the United States may have experienced a greater increase in excess deaths. © MPIDR

"While our study reveals critical insights, it also has some limitations. The data only goes back to 2005, so the effects of recent temperature increases may not have been fully reflected in our calculations. In addition, we also lacked Individual level socioeconomic data, which may be important for understanding the effects of temperature on mortality. Finally, our counterfactual analysis assumes that the association between heat and mortality persisted after the study period," explains Risto Conte Keivabu.

Despite these limitations the study makes a compelling case for immediate action. "Our findings highlight the critical needs of adaptation measures to shield vulnerable populations to the growing dangers of extreme temperatures," the researcher concludes.

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This press release and belonging figures can be downloaded at
www.demogr.mpg.de/go/hitbyheat

About the MPIDR

The Max Planck Institute for Demographic Research (MPIDR) in Rostock investigates the structure and dynamics of populations. The Institute's researchers explore issues of political relevance, such as demographic change, aging, fertility, and the redistribution of work over the life course, as well as digitization and the use of new data sources for the estimation of migration flows. The MPIDR is one of the largest demographic research bodies in Europe and is a worldwide leader in the study of populations. The Institute is part of the Max Planck Society, the internationally renowned German research organization.

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