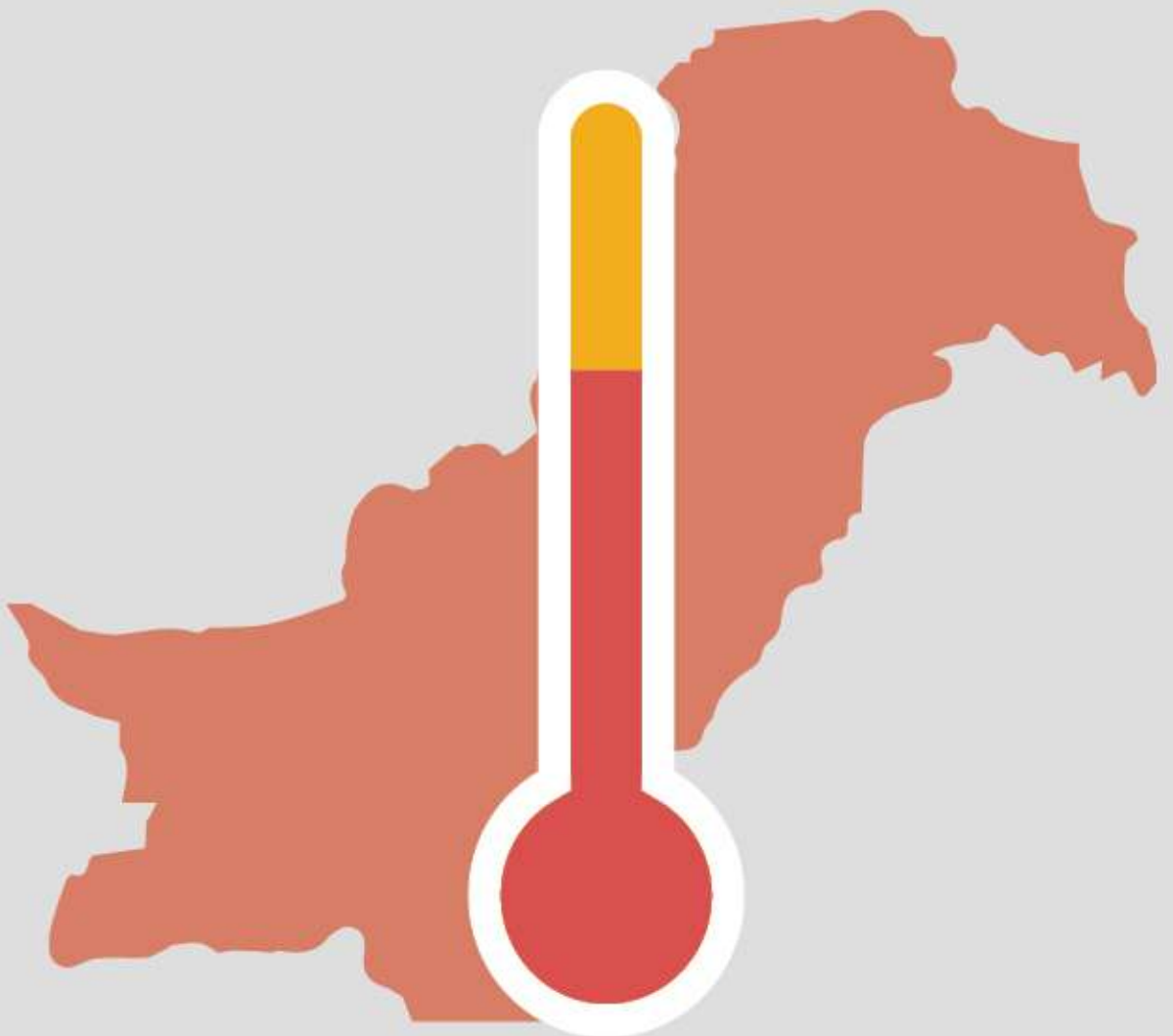




Gallup Pakistan Health Cyber Letter

Edition 14 | Climate Change and
Mortality Rates in Pakistan



Editor's Note

Welcome to the **14th edition of the Gallup Pakistan Health Cyber Letter**. In this issue, we address the severe and escalating impacts of climate change on human health and development, with a particular focus on Pakistan's vulnerability. Pakistan is among the most climate-affected nations, experiencing extreme weather events like heatwaves, floods, and droughts that severely impact public health and economic stability.

We explore the alarming rise in temperature-related mortality, both nationally and globally, and provide targeted recommendations for Pakistan for adapting to these changes, including improved infrastructure, public health interventions, and the adoption of renewable energy.

This edition utilizes updated data from **Human Climate Horizons (HCH)**¹, a collaboration between the United Nations Human Development Programme (UNDP) and the Climate Impact Lab. These comprehensive statistics help us understand the dangers being posed by extreme temperatures caused by anthropogenic climate change, and how to combat these dangers.

Our aim is to highlight the urgent need for action to mitigate the health impacts of climate change and to guide policy and public awareness efforts that can save lives and secure a healthier future for all.

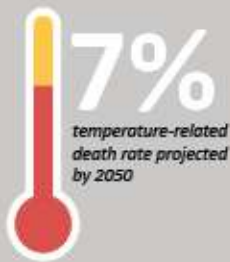
Ayman Fuad

¹ <https://horizons.hdr.undp.org/>

Gallup Pakistan Health Cyber Letter

Climate Change and Mortality Rates in Pakistan

Pakistan is one of the countries most vulnerable to climate change in recent years, it was most recently ranked at number 8 in 2023, and peaked in this index at number 5 in 2020



Between 2030 and 2090, temperature change-related mortality is projected to increase significantly in countries near the Equator, especially in African and Asian nations. By 2050, Pakistan's projected temperature-related death rate will be around 7% of all annual deaths.

Extreme temperatures due to climate change can severely impact health by causing heat-related illnesses like heatstroke and worsening chronic conditions, while extreme cold can lead to hypothermia and respiratory issues. Vulnerable populations, including the elderly, children, and low-income communities, are disproportionately affected by these temperature extremes, leading to higher mortality rates.



The Pakistani government can leverage advanced weather prediction technology to issue timely warnings and implement public health interventions, such as color-coded alert systems, access to cooling spaces, and tree planting, to reduce temperature-related mortality. Improving infrastructure, promoting renewable energy, and encouraging the use of alternative construction materials are also crucial in combating the effects of extreme heat.

Human Climate Horizons (HCH) provides localized data and insights on how climate change will affect various aspects of human development and security in the future². HCH is the joint initiative of the United Nations Human Development Programme (UNDP) and the Climate Impact Lab. This edition of the cyber letter uses data processed by Our World in Data³, initially provided by HCH, and updated in 2024.

1. Pakistan's profile with regards to climate change:

Pakistan has, in recent years, consistently remained in the top 10 countries most vulnerable to climate change, most recently ranked at number 8 in 2023⁴, and peaked in this index at number 5 in 2020⁵. Over the past five decades, the mean temperatures in the country have been rising by 0.5°C annually, accompanied by changes in rainfall patterns and an increase in glacial melting⁶. Across the country, heavy flooding is experienced during the summer months—in the north, melting glaciers trigger floods, while in the south, excessive monsoon rains lead to flooding, coastal erosion, and rising sea levels, which have deteriorated protective mangrove forests.

Natural disasters like cyclones in coastal regions, heatwaves in several regions, and droughts in the arid and semi-arid regions of the country have also been increasing in frequency and intensity. **During the previous decade, Pakistan has suffered the wrath of heatwaves almost every year, with 2014, 2016, and 2020 being the exception⁷.** The mortality rate of the population increases due to these natural disasters, in part due to the consequent spread of diseases.

Pakistan is heavily dependent on its agricultural production and climatic disasters negatively impact agricultural output which is detrimental to the country's economy. **These disasters have resulted in significant loss of life and economic damage, worsening poverty and further lowering the already low standard of living in this developing nation. Pakistan produces less than 1 percent of all global emissions, and yet has to pay one of the highest prices for the effects.** The financial damage caused to the environment, people, infrastructure, and the economy from climate change in Pakistan, from 1999 to 2018, amounted to a total of \$3.8 billion⁸.

The situation is further being aggravated in the coming years, especially coupled with the fact that the global and national funds being allocated for climate change adaptation are insufficient⁹.

² <https://horizons.hdr.undp.org/>

³ <https://ourworldindata.org/>

⁴ <https://tribune.com.pk/story/2440567/pakistan-8th-most-vulnerable-to-climate-change>

⁵ <https://www.dawn.com/news/1520402>

⁶ <https://www.undp.org/pakistan/projects/climate-promise-ii>

⁷ <https://energytracker.asia/heat-wave-in-pakistan/>

⁸ <https://www.dawn.com/news/1520402>

⁹ <https://www.dawn.com/news/1520402>

2. Global climate-change trajectory:

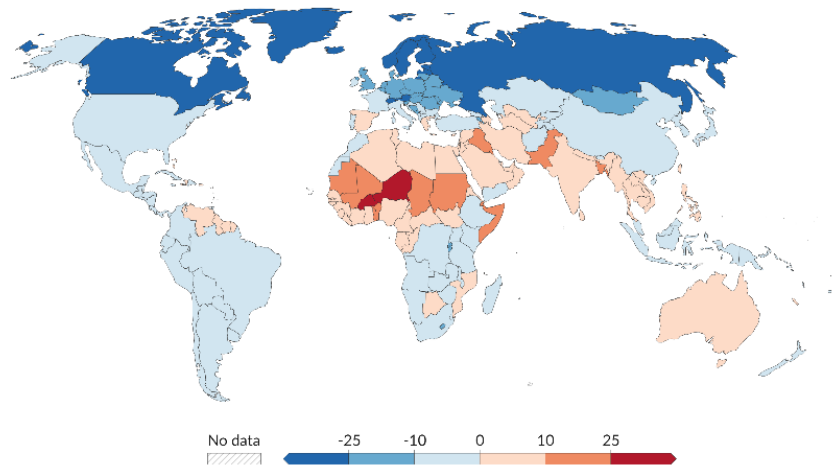
According to the data from Human Climate Horizons, deaths from suboptimal temperatures are increasing across the world. Temperature change-related mortality deaths refer to excess deaths occurring from extremely hot and extremely cold temperatures, which are higher or lower than temperatures in an average year. **Between 2030-2090, temperature change-related mortality is projected to increase significantly in countries near the Equator, especially in African and Asian nations¹⁰.**

In 2030, the countries with the highest rate of deaths (more than 25 from every 100,000 individuals) from extreme temperatures include Burkina Faso and Niger on the African continent (highlighted in red in Figure 1). Countries which have the mortality rate of 10-25 individuals from every 100,000 include Bangladesh, Iraq, Kuwait, and Pakistan in Asia, and Benin, Chad, Djibouti, Mali, Mauritania, Somalia, Sudan, and Togo in Africa (highlighted in orange in Figure 1). All these countries lie above the Equator line.

Estimated change in the death rate from non-optimal temperatures, 2030

Our World in Data

Positive figures show an increase in deaths, negative figures show a decrease. Premature deaths include deaths from hot and cold temperatures, measured per 100,000 people. This is the estimated change based on the Representative Concentration Pathway, RCP4.5 which reaches around 2°C of warming by mid-century, and 2.5°C by 2100.



Data source: Human Climate Horizons (2024). Climate Impact Lab and the United Nations Human Development Programme. CC BY

(Fig. 1) Source: [Our World in Data](#) via [Human Climate Horizons](#) (2024), Climate Impact Lab and the United Nations Human Development Programme. Analysis by Gallup Pakistan

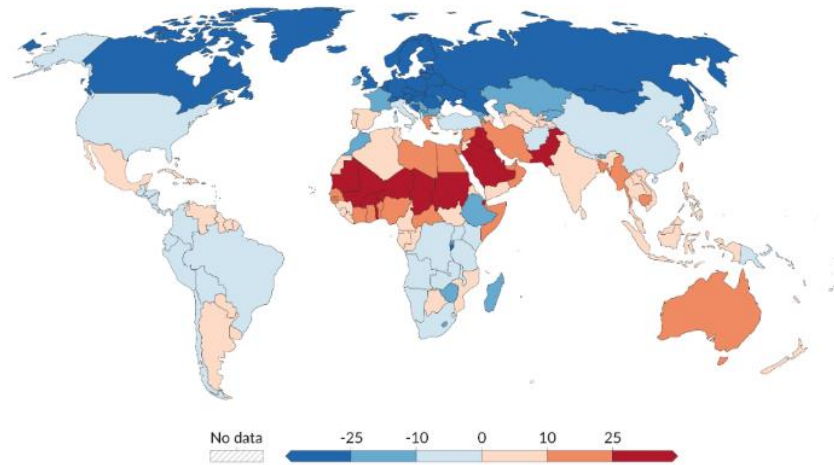
Figure 2 shows that temperature change-related mortality deaths will increase to more than 25 persons per every 100,000 people by 2050 in the countries where the rates were between 10 to 25 persons. The highest increases in deaths by 2050, at more than 25 per every 100,000 people, are seen in African and Asian countries (Figure 2). **In Asia, Iraq, Pakistan, and Saudi Arabia are affected severely, and in Africa the highly impacted countries include Burkina Faso, Chad, Djibouti, Mali, Mauritania, Niger, Sudan, and Togo.**

¹⁰ <https://ourworldindata.org/part-two-how-many-people-die-from-extreme-temperatures-and-how-could-this-change-in-the-future>

Estimated change in the death rate from non-optimal temperatures, 2050



Positive figures show an increase in deaths, negative figures show a decrease. Premature deaths include deaths from hot and cold temperatures, measured per 100,000 people. This is the estimated change based on the Representative Concentration Pathway, RCP4.5 which reaches around 2°C of warming by mid-century, and 2.5°C by 2100.



Data source: Human Climate Horizons (2024). Climate Impact Lab and the United Nations Human Development Programme. CC BY

(Fig. 2) Source: [Our World in Data](#) via [Human Climate Horizons](#) (2024), Climate Impact Lab and the United Nations Human Development Programme. Analysis by Gallup Pakistan

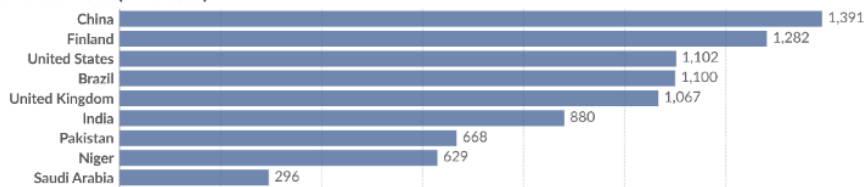
Figure 3 shows Niger, Pakistan, Saudi Arabia, and India witnessing increases in temperature-related death rates in particular. **By 2050, Pakistan’s projected death rate (of all causes) will be 668 per every 100,000 people, and the temperature-related death rate will be 49 per every 100,000 people, meaning that climate change will be the perpetrator of around 7% of annual deaths in 2050.**

Estimated changes in temperature-related death rates compared to projected death rates, 2050



Positive values mean an increase in death rates, negative numbers mean a decrease, and are measured per 100,000 people. Temperature-related deaths include hot and cold temperatures, and are based on the Representative Concentration Pathway, RCP4.5 which reaches around 2°C of warming by mid-century, and 2.5°C by 2100. This is given next to the UN's projected all-cause death rates in its medium population scenario.

Projected death rate (all causes)



Change in heat-related death rates



Data source: Projected death rates from UN, World Population Prospects (2024); Heat-related death rates from Human Climate Horizons (2024). CC BY

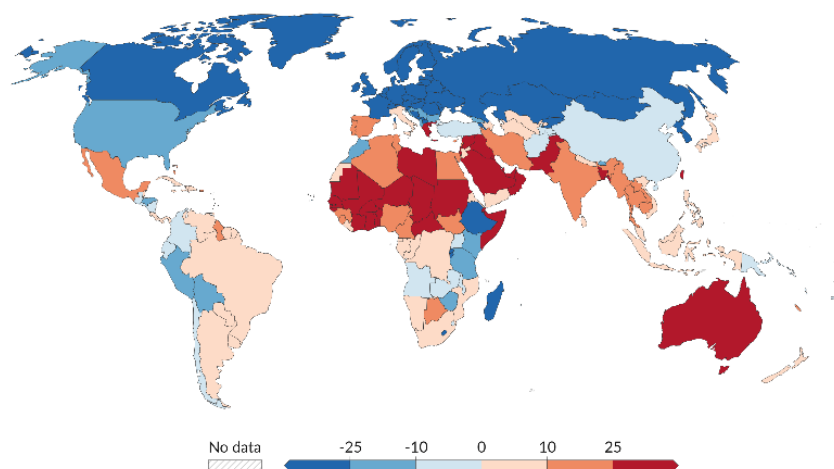
(Fig. 3) Source: [Our World in Data](#) via [Human Climate Horizons](#) (2024), Climate Impact Lab and the United Nations Human Development Programme. Analysis by Gallup Pakistan

By 2090, along with the countries already affected from 2030 to 2050, the impact across Asia and Africa will escalate, a few countries in Europe as well as the entirety of Australia will also suffer the negative results of anthropogenic activity (Figure 4). Bahrain, Bangladesh, Hong Kong, Israel, Kuwait, Lebanon, Libya, Macao, Oman, Syria, Taiwan, and the United Arab Emirates will also be included in the affected countries of Asia which will have the temperature-mortality rate of more 25 for every 100,000 people in 2090. This means that almost the entire Middle East is at high risk of temperature-mortality by the end of this century. The African countries that will be affected severely in 2090 include Benin, Central African Republic, Cote d'Ivoire, Gambia, Ghana, Guinea-Bissau, Senegal, and Somalia. In Europe, Cyprus, Greece, and Malta will be suffering from a high temperature-mortality rate.

Estimated change in the death rate from non-optimal temperatures, 2090



Positive figures show an increase in deaths, negative figures show a decrease. Premature deaths include deaths from hot and cold temperatures, measured per 100,000 people. This is the estimated change based on the Representative Concentration Pathway, RCP4.5 which reaches around 2°C of warming by mid-century, and 2.5°C by 2100.



Data source: Human Climate Horizons (2024). Climate Impact Lab and the United Nations Human Development Programme. CC BY

(Fig. 4) Source: [Our World in Data](#) via [Human Climate Horizons](#) (2024), Climate Impact Lab and the United Nations Human Development Programme. Analysis by Gallup Pakistan

Given that the aforementioned regions are near the Equator and most of their temperature-related deaths are due to heat rather than cold, the rising mortality rates shown in Figure 4 can be attributed to increasing temperatures in these areas.

These figures do not mean that these changes will necessarily take place; it is also possible that some of the aforementioned countries take necessary measures to mitigate the effects of climate change and thus will not be experiencing the same level of temperature-mortality as displayed in the above figures. Additionally, some other countries may suffer higher consequences and thus be placed on this list instead.

Simultaneously, Figure 4 show high decreases in temperature-related deaths in Russia, Canada, the United States, the United Kingdom, and other Northern and Western European nations such as Germany, France, Sweden, Norway, etc. Some of the East African countries (Ethiopia, Madagascar, Rwanda) and a few South American countries towards the western part of the continent

(Peru and Bolivia) also exhibit a high decrease in temperature-related deaths of either less than 25, or less than 10 and 25, for every 100,000 individuals from.

The US, because of its vastness, has varying climates in different parts, as is the case with Western Europe. Russia, Canada and the Northern European nations have colder climates, meaning that deaths from extremely cold temperatures are more likely than deaths from extreme heat. As climate change leads to higher temperatures across the globe, regions with colder climates start experiencing milder and more temperate climates. This explains the trend of declining mortality related to temperature changes in these countries. However, it must also be noted that the temperature-mortality rates in these countries were already low to begin with (as evidenced in Figures 1 and 2) and are only falling further.

3. Significant health problems caused by non-optimal temperatures, both hot and cold:

Increases in temperatures due to climate change leading to hotter climates can affect the health of individuals in a variety of ways, diminishing their quality of life by having direct and indirect impacts. **The most common cause of death caused directly by rising temperatures are heat exhaustion and heatstroke, where the latter can be life-threatening.** Other health problems caused by increasing temperatures include the worsening of symptoms of cardiovascular and kidney diseases due to heat stress, and increased air pollution leading to respiratory problems and diseases. **Mosquito-, tick-, and water-borne diseases spread to new regions that are now becoming warmer, and the risk of food contamination and malnutrition rises as infrastructure necessary to mitigate the effects of these diseases is found lacking.**

Vulnerable populations such as the elderly, children, and people with pre-existing conditions are more susceptible to the effects of higher temperatures as they have lower physical abilities to handle the rising heat. **Low-income communities are another vulnerable population because they lack the financial resources required to access healthcare, air conditioning, and other resources to cope with extreme heat.** The stress of dealing with extreme weather events (like heatwaves, droughts, and floods) and concerns about the future can increase anxiety, depression, and other mental health issues. **Increased demand for emergency services during heatwaves and other extreme weather events can strain healthcare systems, potentially leading to reduced quality of care.** All of this leads to higher mortality rates caused by extreme heat as a result of climate change.

Sub-optimal temperatures also include low temperatures caused by climate change in places which are not used to the cold, and extremely low temperatures in regions which are usually cold as well. **These changes in temperatures can result in populations being affected by hypothermia and frostbite, both of which are extremely dangerous, where hypothermia can be life-threatening as well.** Individuals with chronic health conditions will be more vulnerable to having their symptoms exacerbated by the change in temperatures; cardiovascular diseases, respiratory diseases worsened by a weakened immune system (asthma, bronchitis, pneumonia, etc.), and musculoskeletal problems (e.g. arthritis).

Similar to extreme heat, the vulnerable population groups who will suffer disproportionately from the extreme cold include the elderly, infants, low-income communities, as well as homeless populations. People living in poorly insulated homes or without access to adequate heating are at higher risk of cold-related health issues. **Energy poverty, where people cannot afford to heat their homes, is a significant concern during cold periods.** Those without shelter are at extreme risk of hypothermia, frostbite, and death during cold weather. In terms of mental health, the decreased daylight and colder temperatures during winter months can lead to seasonal affective disorder (SAD), a type of depression that occurs at a specific time of year, usually in the winter. **Additionally, cold and snowy weather creates hazardous driving conditions and even roadblocks, which restrict individuals' access to food resources and increase the risk of accidents.** Healthcare systems are resultantly strained due to increased demand, and these also become inaccessible in certain regions due to the effects of the extreme cold. Air quality issues caused by an increased use of fossil fuels for heating can lead to higher levels of indoor air pollution, which compromise the health of individuals. All of the above factors increase the risk of death, making extreme temperatures a cause for higher mortality rates.

4. Recommendations for Pakistan on how to adapt health-wise to very high non-optimal temperatures caused by climate change:

With complex technology available now to accurately predict weather for up to 10 days, the government has the ability to forewarn citizens of very low or very high temperatures which may be detrimental to their health. Public messaging and emergency alerts from the government's weather services become critical in such circumstances. As in the case of Ahmedabad in India, governments dealing with high temperatures can employ color-coded alert systems coupled with public health interventions¹¹. For example, for temperatures in the yellow code (which can escalate all the way up to red), fans are provided in public spaces where possible (e.g. in public transport stations) and drinking water is distributed. For temperatures in the red code, those who work outdoors are encouraged to shift their hours to avoid the extreme heat, and health workers are deployed to help deal with symptoms of dehydration, heat stroke, and related illnesses. Health camps can also be set up to increase access to health facilities in places where hospitals are overburdened or where they are located at considerable distances from the population. The government also needs to provide financial support to those who work outside in case they miss shifts due to high temperatures or illnesses caused by these temperatures.

Air conditioning in public spaces can provide refuge from the heat for economically vulnerable communities who may not be able to afford air conditioning in their homes. **The data supports the notion that air conditioning drastically reduces heat-related deaths (by 75%)¹². Thus, making air conditioning cheaper is a vital component in the fight against temperature-related mortality during summers. This includes reducing the costs of both air conditioning units as well as energy.** Renewable energy like solar is a fantastic option which can lower energy costs and simultaneously

¹¹ <https://ourworldindata.org/how-can-the-world-reduce-deaths-from-extreme-heat>

¹² <https://ourworldindata.org/how-can-the-world-reduce-deaths-from-extreme-heat>

serve the climate. The government can provide subsidies to solar power companies and reduce primary installation costs, especially on an income-per-household basis. Government schemes which can provide water coolers or air conditioners will also be helpful. **Pakistan additionally suffers from poor electricity infrastructure and lack of proper maintenance; when high consumption from all households and industries during the summer months leads to a higher overall load on the grids, heavy loadshedding is the result**¹³. Tackling electricity infrastructure issues will help reduce loadshedding in Pakistan, which is necessary to avoid a high temperature-mortality rate during the summer months.

Planting trees across residential and commercial areas will further help drive down temperatures, but this is only possible if these initiatives are taken seriously both by the government and the citizens. Laws against cutting down trees will also be necessary to mitigate experiencing rising temperatures. **The use of construction materials like cement and concrete which trap heat needs to be combatted with alternative materials being made widely available**¹⁴. These include wood, clay, adobe, rammed earth, insulated panels, green roofs (plants growing on roofs), and light- or white-colored reflective materials which do not absorb as much heat and reflect it instead¹⁵. Shifting usage from concrete to other construction materials will be difficult to achieve as concrete is widely used, but the government can set limits on its usage and make alternative materials more easily accessible. Such measures will reduce the chances of individuals being impacted by heatwaves and heat strokes.

¹³ <https://www.cfr.org/in-brief/whats-stake-pakistans-power-crisis>

¹⁴ <https://news.mit.edu/2021/countering-climate-change-cool-pavements-0822>

¹⁵ <https://www.cleanenergywire.org/factsheets/what-are-best-materials-sustainable-construction-and-renovation>

GALLUP PAKISTAN PUBLIC HEALTH PROGRAM

Gallup Pakistan formally introduced the Gallup Pakistan Public Health Program in 2020. Through this dedicated space, we hope to act as catalysts of change in the public health landscape by using innovative and collaborative solutions to tackle complex problems in the country.

Under this program, the streams of work currently include:

1. Let's Talk Public Health
2. Gallup Pakistan and CDC Sponsored Projects: including the Cause of Death (COD) Training and Enhancing Integrated Mortality Surveillance Workshop held in Islamabad from February 6 – February 10, 2023
3. Gallup Pakistan and Digital Vaccine Register Project
4. Gallup Big Data Analysis of Pakistan Statistical Yearbook – Healthcare in Pakistan (2010 – 2020)
5. Gallup Big Data Analysis of Pakistan Statistical Yearbook – Live Births (2018 – 2020) – Pakistan Demographic Survey 2020
6. Gallup Pakistan 40-year report on Health

One of our pioneering initiatives as part of the Public Health Program is the **“Let's Talk Public Health”** series which was launched in March 2022. Through this platform, we conduct insightful conversations with experts/researchers/practitioners in the field, on public health challenges that Pakistan is facing today and we hope we can find ways to reimagine the concept of health as well as make meaningful contributions to the public health discourse in both, Pakistan and globally.

Links to our previous episodes can be accessed below:

- *Episode 1: Lifestyle and Non-communicable diseases (NCDs) – Conceptual, Empirical and Practical Perspective* by Dr. Ijaz Gilani. <https://youtu.be/uJcYQIj3GH4>
- *Episode 2: Pakistan's Healthcare Market, Medical Devices and Digital Health* by Hammad Ijaz. <https://youtu.be/Wz8QWExlHGg>
- *Episode 3: Health Perception Survey - WiN International and Gallup Pakistan* by Mishalle Kayani and Laila Waqar. <https://youtu.be/IFOp6Op6GrQ>
- *Episode 4: Value of Community Co-design for Vaccine Confidence Interventions - A Case from Karachi* by Rubina Qasim.: <https://youtu.be/7TqLL3cM17A>
- *Episode 5: Science Behind Artistic Processes (Conducive Tools for Health Sector)* by Dr. Habib Afsar. <https://www.youtube.com/watch?v=1ZWK0EhZyD8>
- *Episode 6: Family Planning in Pakistan: Issues, Progress and the Way Forward* by Dr. Adnan Khan. <https://youtu.be/LyOfFv0w8oA>
- *Episode 7: The Menace of Self-Citation: An Audit of Two Years from Journals of KPK* by Dr. Umema Zafar. <https://youtu.be/UZrCBreD8No>
- *Episode 8: International Health Regulations (IHRs) and Pakistan* by Dr. Saeed Ahmad. <https://www.youtube.com/watch?v=t9sZOnzfiS8&t=64s>
- *Episode 9: Migration and Health* by Dr. Roomi Aziz. <https://www.youtube.com/watch?v=E89KBuiU52E>
- *Episode 10: Dispelling Development Myths: The Power of Community Engagement* by Dr. Ayesha Khan. <https://www.youtube.com/watch?v=WtFXmrnazzc>
- *Episode 11: Nutrition and Health in Pakistan: A Conversation with Mishalle A. Kayani and Zainab Khan from Gallup Pakistan.* <https://www.youtube.com/watch?v=4LuHd77lK-M>

In our 11th episode of our “Let’s Talk Public Health” series, we discussed findings from Gallup Pakistan’s 7th Health Cyber Letter, which focused on health and nutrition in the country. The discussion included unpacking the cultural and regional influences on the perceptions of diet and health for an average Pakistani. In addition to this, we discussed changes in nutritional preferences and how these have been shaped by socio-economic influences over the years. For the last section of our talk, we explored the possible social policy actions that could encourage adopting healthier nutritional habits to improve the overall health status of Pakistan.

In addition to our talk series, we’ve worked on several *research projects with the Centers for Disease Control (CDC)*.¹⁶

Project: *Survey of Social and Behavioral Determinants of COVID-19 Vaccination Uptake and Evaluation of On-going National and Subnational Programming to Increase Demand for COVID-19 Vaccines. 2021*

Description: The project aimed to prepare for the rollout of COVID-19 vaccines by assessing social and behavioral determinants for under vaccination in the EMRO region. The multi-country assessment focused on understanding determinants of demand for COVID-19 and other vaccines among priority populations, particularly the role of rumors and misinformation on behavior, and a secondary focus on challenges in vaccine service delivery faced by healthcare workers and program administrators. This project also evaluated ongoing regional, country-level, and subnational planning efforts to introduce COVID-19 vaccines to high priority populations of healthcare workers, adults over 65, and high-risk adults. An important aspect of this project was data triangulation- collecting and reviewing diverse sources of data to compare, contrast, and develop a fuller picture of demand for COVID-19 vaccines in each selected country.

Project: *A Cross-Sectional Survey on COVID-19 Knowledge, Attitudes, Practices (KAP) and Resiliency in Pakistan. 2021-2022*

Description: The goal of this study was to provide a nationally and regionally representative comprehensive understanding of knowledge, attitudes, and practices (KAPs) around COVID-19 as well as the mental health impacts and other personal effects of the pandemic by providing context specific evidence to help address COVID-19 more effectively. Measuring key cognitive and behavioral factors associated with COVID-19 will help inform recommendations for effective public health management of the disease, such as behavior change strategies, communication strategies to counteract misperceptions around COVID-19, address stigma, community and home-care strategies, and the deployment of food or cash assistance, to vulnerable households.

Project: *Track and Trace of COVID-19 Suspected Cases – Pilot Program Working with Faith-Based Organizations. 2022*

¹⁶ Funding for this conference was made possible (in part) by the Centers for Disease Control and Prevention. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services, nor does the mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

Description: Engaging faith communities to advance COVID-19 risk communication and mitigation represents a pivotal opportunity to accelerate pandemic control. The project goal was to pilot a program in which contact tracing and advocacy around non-pharmaceutical intervention (NPIs) is done by FBO's and lessons can be learned and shared with policy-makers dealing with COVID-19.

Project: *Estimating Excess Deaths and Improving Mortality Surveillance and Civil Registration Systems in Pakistan during COVID-19. 2022-2023*

Description: This project aims to estimate and improve the capacity for estimation of excess deaths and their causes in selected areas of Pakistan; understand and inform as to causes of increases in preventable deaths; and to attempt to integrate relevant partners and systems to build sustainable capacity in mortality surveillance and in National Public Health Institutes.

Cause of Death (COD) Training (Monday, February 6 to Wednesday February 8, 2023)

Over the course of 3-days, health stakeholders such as doctors from public and private hospitals, the district health office (DHO), Ministry of Health (MoH) and the Civil Registration and Vital Statistics Unit (CRVS) in Islamabad, participated in a training module led by the Centers for Disease Control and Prevention (CDC-US) with Gallup Pakistan's support. The technical training focused on assigning cause of death, the use of ICD-10/11 coding for maternal mortality (MM) and perinatal mortality (PM), and birth and death record assessment and management. Participants also took part in practical exercises using digital platforms like DORIS and AnaCOD as well as group case studies to appropriately fill out death registration forms and discuss mortality management with respect to participants' institutions.

Enhancing Integrated Mortality Surveillance Workshop (Thursday, February 9 to Friday, February 10, 2023)

On February 9 and 10, 2023, Gallup Pakistan and the Ministry of National Health Services and Coordination held a workshop in Islamabad to discuss potential ways to strengthen mortality surveillance in Pakistan. Participants included doctors from public and private hospitals in Islamabad, development organizations and other key actors involved in health surveillance and management systems in Pakistan. Participants had the chance to learn from insightful presentations on existing health infrastructure which included detailed information on data collection processes. In addition to this, participants also actively engaged in group exercises which involved the identification of problems as well as solutions to problems in current surveillance systems at different levels of implementation ranging from the community level up to the facility and institutional levels.

Lastly, during this year we also worked on a **Digital Vaccine Register Project**, the details of which, you can find below:

The **Zindagi Mehfooz (ZM)** application has been designed as a digital repository of enrolment and vaccination records of women and children on a web-based dashboard, currently being leveraged as a micro-data collection tool in the health centers of Sindh, Pakistan. The scope of the research study was to evaluate the impact of the application on immunization service delivery, registry coverage, uptake of immunization services, and data use patterns.

The qualitative aspect of the evaluation included a series of focus group discussions, key informant interviews, and observations across health facilities/offices in the districts of Jacobabad, Shikarpur, and Naushahro Feroz with the goal of understanding the perceptions of all the stakeholders involved (ZM staff, caregivers, vaccinators, supervisors/coordinators, district managers, and provincial managers) regarding the use and impacts of the ZM application.

Gallup Big Data Analysis of Pakistan Statistical Yearbook – Healthcare in Pakistan (2010 – 2020)
<https://gallup.com.pk/wp/wp-content/uploads/2022/12/Health-pr.pdf>

Gallup Big Data Analysis of Pakistan Statistical Yearbook – Live Births (2018 – 2020) – Pakistan Demographic Survey 2020

In addition to all the initiatives, Gallup Pakistan is also working on producing a ***40-year report on Health in Pakistan*** which is a compilation of findings from health research conducted by the organization over the last 4 decades.

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