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Climate Change - Should Muslim health professionals care?

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"*Climate change is the biggest public health threat of the 21st century.*"[1]

The good thing about facts is that they are true whether you want them to be or not, regardless of your political party affiliation, religion, heritage and profession. The truth is that climate change is real and worsened by mankind's excess consumption of fossil fuels. It is truly the emergency of our times, something humans should all care about now. This excess fossil fuel consumption has led to dramatic environmental effects with drastic public health consequences, including COVID-19.[1]

The Lancet has stated that: *"climate change is the biggest public health threat of the 21st century."*[1] Public health not only involves the human community, but also the individual and the planetary community, comprising the animal and plant kingdoms as well. There is a balance that exists in the world and excess fossil fuel consumption continues to disrupt that balance. This imbalance is causing several public health impacts of climate change which directly affect every person and every community.

Contrary to some popular beliefs, humans are one species and have similar basic needs and goals. You need to eat, drink, sleep, and feel secure. So does every other human on this planet.

There have been several psychological theories as to what exactly these basic needs are, but one of the most popular theories is Maslow's hierarchy of needs.[2] Climate change is hurting humanity's basic needs and it's only getting worse: *"Taken as a whole, the range of published evidence indicates that the net damage costs of climate change are likely to be significant and to increase over time."*[3]

Impacts

Food

Every living thing on this planet needs some form of nutrition. Humans need to eat every day, and multiple times a day. Imagine how you feel when you skip a meal. For those who fast, you can appreciate the value of food when you haven't eaten for 14-16 hours. However, food insecurity is a common reality for many around the world. In 2019, around 2 billion people suffered from some level of food insecurity.[4] That is almost a quarter of the entire world population. COVID-19 is projected to increase the number of undernourished people by about 83 and 132 million people.[4]

Changing weather and precipitation patterns and insect burden from climate change affect food security. Crop production can be negatively impacted, particularly as there may be less available land for production and farming with deforestation, poor soil quality and drought. Food prices also increase as a result of decreased supply which can lead to food insecurity. This can also lead to an increased reliance on calorie-rich foods that are also nutrient-poor, leading to micronutrient malnutrition and obesity.[5-7]

Warmth

Climate change has been leading to increasing global temperatures every year. Although warmth is recognized as a basic need, this excess heat has led to dire consequences. These unusually high temperatures are leading to increased heat waves and subsequently, heat-related illnesses, like heat stroke and cardiovascular stress.[8] Europe experienced a record-breaking heat-wave in 2003 that led to the deaths of 70,000 people.[9-10] Vulnerable populations around the world are more susceptible to these temperature changes. There was

a significant death toll in Karachi during a historic heat-wave in 2018 that mainly impacted lower-income workers.[11]

The United States and Australia have witnessed a dramatic increase in wildfires due to increased drought and decreased rainfall, as a result of increasing global temperatures.[12-13] Increased fuel combustion, from fossil fuels and events like wildfires, can affect exposure to air pollutants by altering weather and air pollution concentrations.[14] Particulate Matter 2.5 (PM2.5) refers to the microscopic particles in the air that measure 2.5 microns (one millionth of a meter). Particulate matter that is produced by coal combustion are air pollutants that have already been confirmed to be carcinogenic and mutagenic, like polycyclic aromatic hydrocarbons (PAHs), oxygenated polycyclic aromatic hydrocarbons (OPAHs) , and azaarenes.[15-16] Some of these volatile organic compounds are also produced in wildfire smoke.[12] Air pollution can also lead to lung diseases and worsening of lung conditions, like asthma, chronic obstructive pulmonary disorder (COPD).[12]

Water

Water balance serves another purpose for humans beyond a basic physiological need. Precipitation-related events from increased global temperatures are increasing with hurricanes, cyclones and typhoons.[3,17] Category 4 and 5 hurricanes have all increased in frequency since the 1980s.[17] Sea levels are rising as well, as glaciers and ice sheets melt and as the ocean expands from warming temperatures.[18] This is having a disproportionate impact on low- and middle-income countries (LMICs) who suffered 67% of climate change-related deaths between 2010 and 2013.[19] This is only expected to increase as these weather-related disasters increase as storm intensity and sea levels rise.

These weather disasters are also accompanied by flash flooding leading to infrastructure devastation. This directly impacts healthcare delivery, like access to emergency services, follow-up for chronic illnesses, access to medications.

When there is excess standing water after these extreme precipitation events, vector-borne diseases become a subsequent public health concern.[20]

Security/safety

Although there are typical daily and seasonal variations in vector patterns, climate change has led to variations in typical patterns which is leading to changes in infection patterns. Seasons for tick-borne illnesses are extending longer and new areas that are experiencing these changes in patterns in the U.S. are at a new risk for vector-related illnesses they were not accustomed to previously.[20] Tropical and sub-tropical viruses, like dengue fever and Zika virus, both transmitted via mosquitoes, were seen in a wider range of latitudes, like Europe.[21] This year has witnessed a once-in-a-hundred-year pandemic, the COVID-19 pandemic. Although there are proven direct links between climate change and COVID-19, climate change creates situations where it is difficult to handle the crisis: stressed healthcare systems, weather extremes that threaten shelter and make physical distancing difficult.[22]

Humans need safety and security from illnesses, like communicable diseases. We also need protection from loss of shelter and violence. Sea level rise threatens living conditions along the coast. This leads to the phenomenon of climate refugees. It's estimated that about 50-250 million could be displaced from their homes by 2050.[23] The CNA's Military Advisory Board has called climate change impacts "threat multipliers," that can worsen current stressors, like political instability.[24] When resources are limited by weather extremes and situations like water shortages, this can lead to worsening conflict and sociopolitical instability.[24] Climate change also played a role in the tragic Syrian crisis from decreasing freshwater access as well as drought.[25]

Rest/Mental Health

Despite being a stigma within many communities, mental health is an extremely vital component of human health. It has been documented that mental health problems increase after disasters, including ones made worse by climate change, like Hurricane Katrina and wildfires.[26] This includes post-traumatic stress disorder, alcohol abuse, child abuse and domestic violence. This increase in stressors and mental health impacts has also been linked to pre-term birth and maternal complications.[26]

Progress Made

Although all of these public health implications are real and appear to be bleak, there is a hope: ourselves. We do have the ability to stop the long-term, perpetuating effects of climate change if we take serious actions as a global society.[27]

The Paris Declaration/Conference of Parties (COP) was a landmark commitment by high-income and low-middle income countries to work collaboratively to decrease carbon production and focus on mitigation and adaptation strategies. Some investment funds are discussing divestment from fossil fuels, like Black Rock, the largest fund manager in the world.[28] Attention is also now being directed towards "sustainable food systems,"[29] which are defined by the World Commission on Environment and Development (also known as the Brundtland Commission) as: "a food system that meets the needs of the present without compromising the ability of future generations to meet their needs."[30-31] Given environmental change and other concerns like population size and public health issues, a sustainable food system will become a priority.[29]

There needs to be continued focus on individual and community (local, national and international) responses to tackling climate change. Limiting global temperatures to less than 2 degrees Celsius is one of the main benchmark goals form the Intergovernmental Panel on Climate Change (IPCC) which can prevent worsening of these climate change impacts on public health.[3]

Muslim World Response

The Muslim world has made contributions to addressing climate change. The Federation of Islamic Medical Associations (FIMA) came together and all the Islamic Medical Associations (IMAs) signed onto a consensus statement to tackle climate change. They recognized that as medical professionals, inspired by their Islamic faith and how the Prophet Muhammad (Peace and Blessing Be Upon Him and His Family) lived his life[32], they will work to carry out their God-given responsibility as stewards of the earth. FIMA has pivoted its efforts to address climate change through its FIMA Save Earth platform. IMANA, the Islamic Medical Association, has focused on climate change as its flagship advocacy initiative. IMANA Medical Relief (IMR) has been responding to healthcare needs in disaster situations around the world, addressing climate adaptation needs. The Islamic Declaration on Climate Change was signed by Muslim-majority countries in Istanbul, Turkey in 2015, advocating to dramatically decreased carbon emissions and redirect attention to renewable energy.[33] The World Innovation Summit on Health (WISH), with support from the Kingdom of Qatar, has drafted a report on Climate Change and Health with recommended strategies for healthcare professionals.[34]

Conclusion

Each generation had its own problems and battles to fight. Climate change is ours. It is a global emergency that we need to care about and an emergency we have the ability to stop. We are descendants of intelligent and brave Muslims who shaped the world with their faith and determination. We have the ability to do the same, if we want to. There is no one coming to save us because we are the ones we are waiting for.

"Indeed, Allah sends for this ummah, at the onset of every century, those who renew the religion for it." (Prophet Muhammad PBUH)[35]

Further resources and how to get involved:

Email Marium Husain to get more involved
WHO - https://www.who.int/globalchange/summary/en/
CDC- https://www.cdc.gov/climateandhealth/default.htm
Sunrise Movement - www.sunrise.org
World Innovation Summit on Health, Climate Change and Health Report: https://2020.wish.org.qa/about-wish/ (email wishclimateaction@qf.org.qa to get involved).

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