[COVID Information Commons (CIC)](#) Research Lightning Talk

Transcript

Olga Wilhelmi:

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All right, well, thank you so much. So first of all, I would like to acknowledge my team, my - the project Co-PIs, Mary Hayden and Peter Howe, and also our collaborator Cassandra O'Lenick. I work at the National Center for Atmospheric Research, which is managed by University Corporation for Atmospheric Research. And I also want to acknowledge the National Science Foundation for funding this work. So this project is about responding to extreme heat in the time of COVID-19. We have many years of research that have shown that extreme heat is the leading cause of weather-related mortality worldwide. And there have been numerous, numerous studies that have assessed heat health risks, characterize population vulnerability, and also assess the efficacy of different protective measures.

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In the beginning of the pandemic last spring, it became evident that many of the safety nets that have been put in place to cope with and respond to extreme heat may be disrupted. And many people could be placed at risk from extreme heat during summer months. So the goal of our work was to better understand and quantify how the COVID-19 pandemic can affect the population's heat risks, perceptions, coping strategies, behaviors during the summer months.

And in this work, we designed a nationally representative survey of 3,000 American adults. That was a geo referencer survey that we will conducted - be conducted in three waves. The survey had questions about, excuse me, questions about the COVID-19 and heat - extreme heat risk perceptions, experiences, self reported symptoms of heat stress, household coping capacity, self-advocacy, and protective behaviors. Our sample was recruited via IPSOS KnowledgePanel and for data analysis we used mixed effects regression models.

So on this slide, I have only a few highlights from the survey. So we found that 82% of the U.S. population were worried about the health effects of COVID-19. In comparison fewer people, but still more than half of the U.S. population, 58% of the American adults, are worried about the impacts of extreme heat. We also saw that the millions of people reported negative heat effects. 19% experienced heat symptoms, 12% reported reduced work productivity, and 15% reported feeling too hot in their homes. And despite the widespread use of air conditioning, we found that 13% of Americans reported that the high cost of electricity prevented them from cooling their homes effectively. They also found that some of the COVID-19 - COVID-19 pandemic conditions decreased the coping capacity of the U.S. population, so that millions of Americans lose their jobs or income, or found it more difficult compared to a normal summer to seek medical care, leave home and go to an air conditioned place, or to check on friends and neighbors.

So in this series of mixed effect models, we looked at, first of all, the effect of geographic and socio-economic predictors of negative heat effects. And here I have an example of heat symptoms. And some of those predictors also included the access to air conditioning, including having air conditioning, or having air conditioning but not being able to use it because of the multiple barriers. So for example, we saw that people with incomes of less than $30,000 per year were 26% more likely than average responders to report heat symptoms. And also people who reported barriers to using air conditioning, even though they have air conditioning at home, were 125% more likely to report heat symptoms than people who had air conditioning and were able to use it.

So then we also assessed the added effect of the pandemic. For example, people who said that it was more difficult for them this summer to change their daily routine to avoid extreme heat were 70% more likely to report heat symptoms than people who said it was less difficult or more different - difficult - different than the summer.

So when they summarize a significant test for predictors for three negative heat health outcomes, which includes decreased productivity, feeling too hot at home, and having heat symptoms, it is evident that

access to cooling played a really key role across all the different outcomes. They also saw that the pandemic-related factors, including social isolation because of the pandemic, shutdown, or other restrictions, were significant predictors. And as you see on this graph, the number of those factors increased - this increase in severity of outcomes. And among all the socio-economic groups, those who were likely to report negative heat effects last summer were women, low-income populations, with income less than $30,000, Hispanic, mixed-race Americans. And geographically, we saw that, in the South, in the West regions of the United States, we had more people that were affected by negative effects of the heat.

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So one of the key findings from this study is that the COVID-19 pandemic indeed exacerbates existing systemic vulnerabilities to heat and also widens the range of vulnerable populations. So in our next steps, we will be focusing a little bit more deeper on the analysis of spatial and temporal variations and people's experiences, risk perceptions, behaviors, and self advocacy. As well we will be taking a look at some of the broader environmental and societal factors that may affect risk perception and decision making. And we also hope that this work can contribute to a better understanding of the multi hazard risks and intersecting vulnerabilities as we are looking at this work and the larger framing of risk and vulnerability, especially this multi-hazard situation. So I will stop here and I will be able to take any questions either offline or in the chat. Thank you.