

College of Health & Human Performance





Differences in Perceptions and Risks of Climate Change between Rural and Urban Counties in North Carolina

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Introduction

Poverty predisposes individuals to adverse economic and health problems whenever disasters strike. Poor individuals often lack resources to mitigate or manage such outcomes. In North Carolina, most rural counties experience higher levels of poverty, low education levels and employment rates are low compared to urban or suburban counties. Additionally, these rural counties face significant disparities in access to healthcare services. With global warming, such disasters are expected to worsen which will not only exacerbate the predicaments of poor rural communities but also cost governments a lot. Experts predict extreme weather conditions including heat stress, more deadly hurricanes, droughts and flooding will create health concerns (Fig. 1). Such changes are also expected to alter the ecology of vectors including mosquitoes and ticks thus an upsurge of infectious diseases might be seen in coming years. These events would put more strain on the healthcare system, increased healthcare expenditure and widening of the economic gap. To mitigate these adversities, there is need to effectively communicate and empower poor rural communities and policy makers about the reality of climate change.



Figure 1. Wheel Graphic of Impacts of Climate Change on Human Health (CDC)

Specific Aims

The primary purpose of this project is to demonstrate the differences that exist in terms of risk perceptions between people living in rural counties and those living in urban and suburban counties. Results from this study may assist healthcare providers, public health practitioners, educators and policymakers with an increased understanding of counties where more efficient communication and sensitization on the effects of climate change needs to be directed.

Methods

Publicly available data (Yale Program on Climate Change Communication 2018) was used to evaluate knowledge and risk perceptions towards global warming between those who live in rural and urban/suburban counties in NC. U.S. Census Bureau data 2018 was downloaded into Microsoft Excel (2007). To compare differences in perceptions between urban/suburban and rural counties (Fig. 2), Stata 15 (Stata Corporation, College Station, TX, USA) was used to compute student t test where P values <0.05 were considered statistically significant.



Figure 2: Urban, Suburban and Rural Counties in North Carolina
Source: NC Rural Center 2018

Results

NC has a considerably higher percent of rural counties (80) than urban/suburban counties. As shown in Figure 3, rural counties demonstrated that people were less likely to think global warming is happening (65% vs 69%) and were less likely to think global warming is caused by human activities (51% vs 55%) as shown in Figure 4. Similarly, 53% people in rural counties mentioned that they were worried about global warming compared to 58% in urban/suburban counties (Figure 5). In terms of global warming causing harm to plants and animals 66% of people in rural counties agreed compared to 69% of people from urban/suburban counties (Figure 6). While 68% of people from urban/suburban counties thought global warming would harm future generations, about 65% of those from rural counties has similar thoughts as shown in Figure 7. As shown in Table 1, student t test showed significant differences between opinions from people living in rural counties to those living in urban or suburban counties.

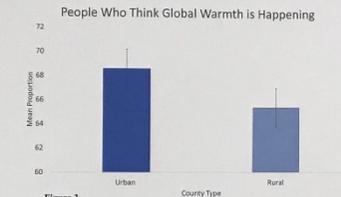


Figure 3

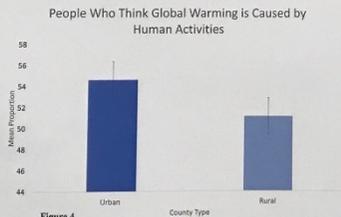


Figure 4

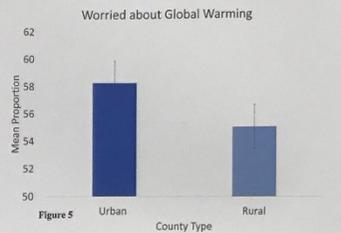


Figure 5

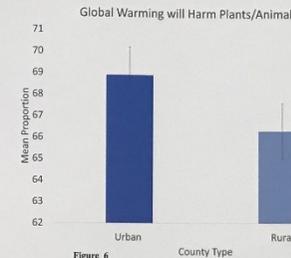


Figure 6

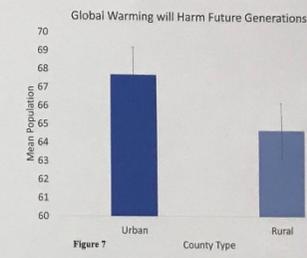


Figure 7

Table 1: Differences in knowledge, Attitudes and Perception of NC residents towards Global Warming

	Students T-test		
	Urban/Suburban (n=20)	Rural (n=80)	P-Value
GW caused by human activities	54.6	51.1	0.000
Worried about GW	58.3	55.1	0.010
GW is Happening	68.6	65.4	0.010
GW Will Harm Plants and Animals	68.9	66.3	0.003
GW will Harm Future Generations	67.7	64.7	0.001

Conclusions

There is a rising need to effectively communicate and create awareness on the adverse effects of climate change and how these would impact health of the people especially the impoverished living in rural eastern North Carolina. Advocacy to policy makers to devise and enact policies that would mitigate the implications of climate change among poor rural communities is equally important.

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Photos WEHD 2019 - Environmental Health Sciences Program, Department of Health Education and Promotion, East Carolina University, Greenville, North Carolina, USA

