Tick-Borne Disease Risk and Climate Change:

A Survey-Based Analysis of Eau Claire County Residents' Knowledge and Perceptions

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Introduction

Tick-borne diseases are an increasing concern in the United States, including Wisconsin, where they are common. In 2023, Wisconsin incidence of Lyme Disease— the most common tick-borne disease in the U.S.— was 215.8 per 100,000 population, and Eau Claire County was 224.3.[1] Evidence suggests that climate change is contributing to this rise, as warming temperatures expand the geographical range of ticks and extend their active season.[2] The aim of this project is to use a survey-based analysis to assess Eau Claire County residents' awareness and understanding of the rise in tick-borne diseases, as well as their perceptions of the role climate change plays in this issue.

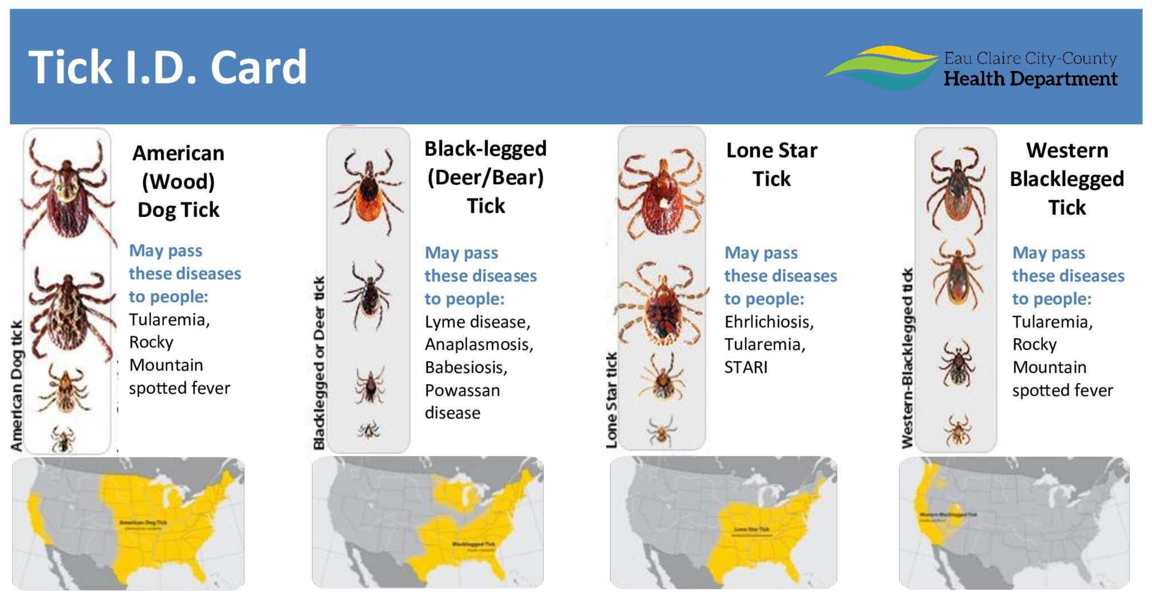

Figure 1: Tick I.D. Card from Eau Claire City-County Health Department. The two left-most ticks (American Dog Tick and Black-legged Tick) are the most common ticks that spread disease in humans- the Black-legged Tick carries the bacteria that causes Lyme Disease.[3]

Methods

An anonymous survey was distributed on posters throughout public spaces in Eau Claire County. The posters included a QR code that led directly to the online survey link. The survey was also distributed via social media.

Results

The survey participants are Eau Claire County residents who completed the survey and answered all questions presented (n= 80).

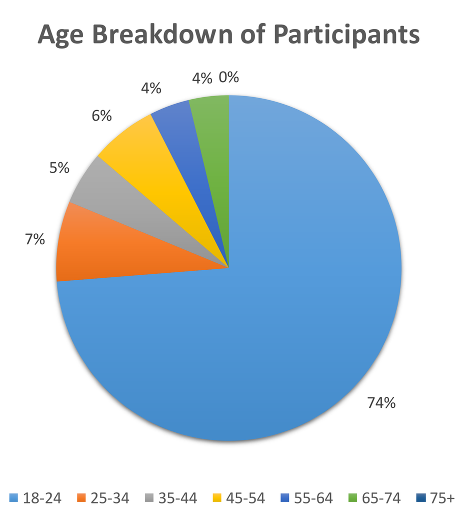

Figure 2 (left): Breakdown of survey participant age groups: 74% 18-24 years, 7% 25-34 years, 5% 35-44 years, 6% 45-54 years, 4% 55-74 years, 4% 65-74 years, and there were no participants 75 years or older.

- 89% live in a suburban area and 11% live in a rural area.
- 68% take preventative measures to protect themselves against tick-borne diseases.
- 51% of respondents identified Eau Claire County as a high-risk area for contracting a tick-borne disease.
- When asked where they find information on tick-borne diseases, the most common responses were friends and family, public health organizations, and online medical websites.

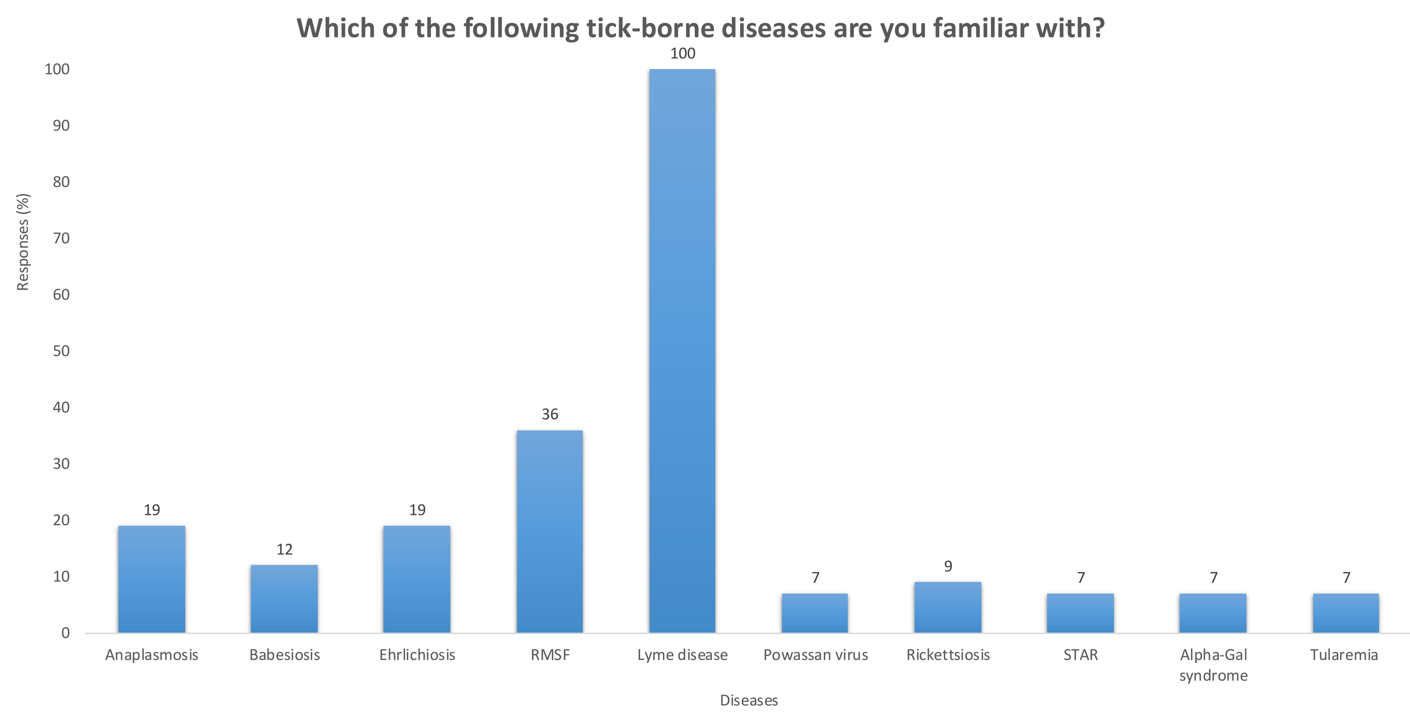

Figure 3: 100% of participants reported being familiar with Lyme Disease, but only 7- 36% of participants reported familiarity with all other listed tick-borne diseases.

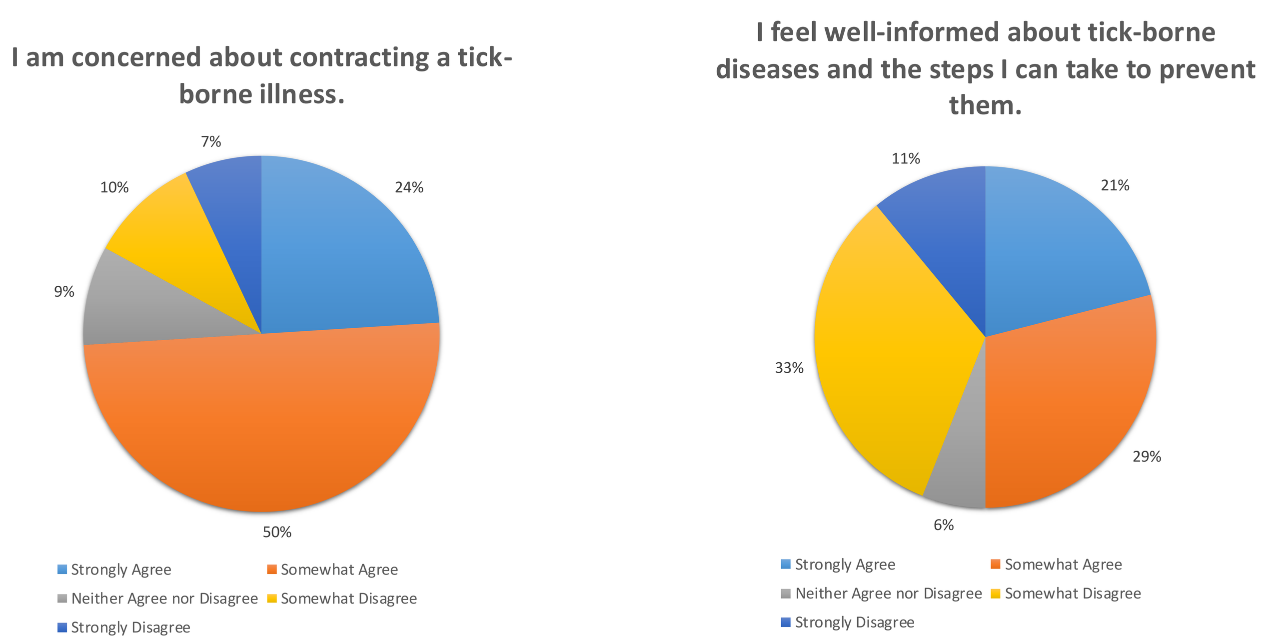

Figure 4: While 73% of participants reported being somewhat concerned or concerned about contracting a tick-borne disease, only 50% agreed that they were well-informed about tick-borne diseases and prevention.

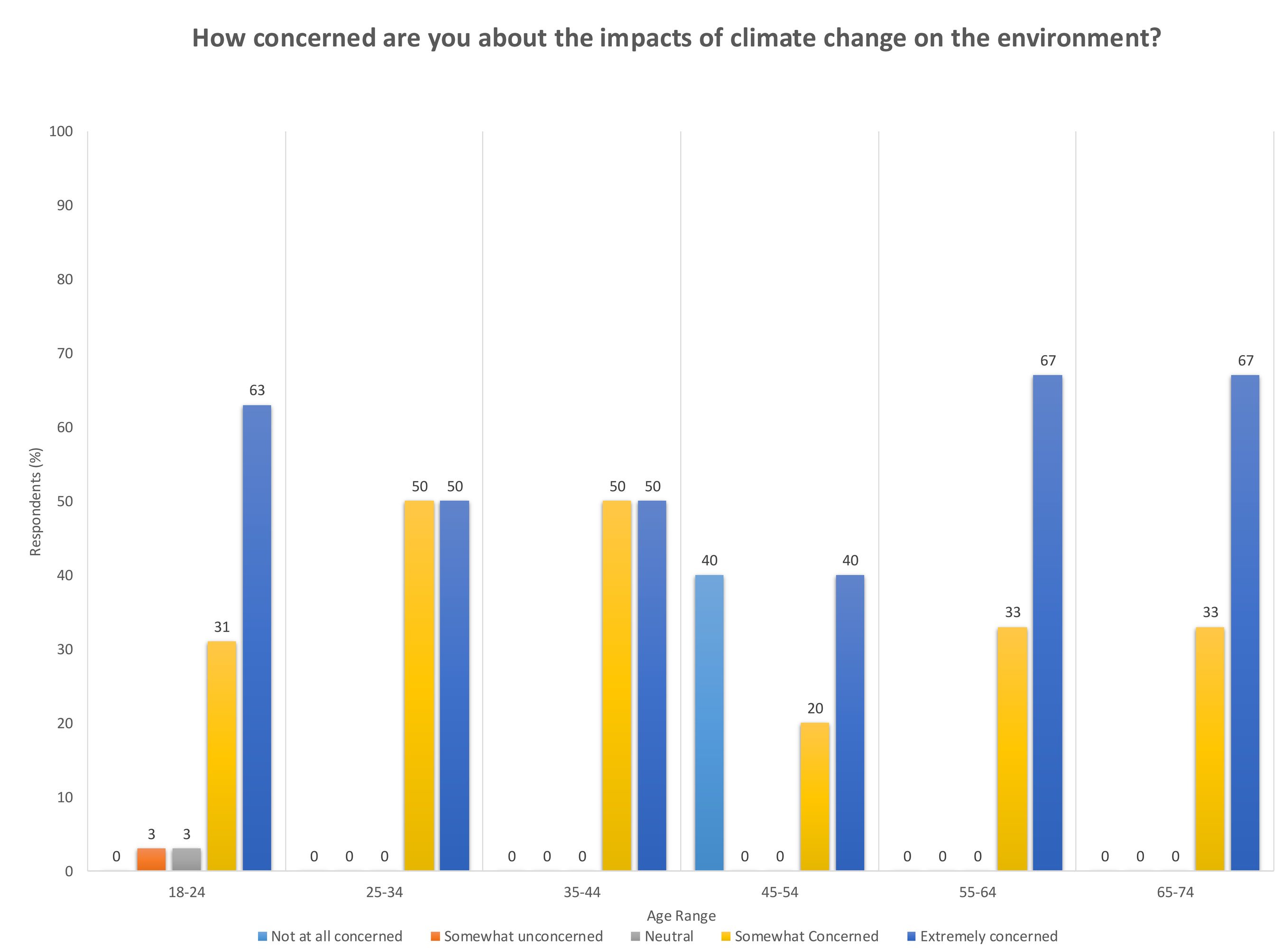

Figure 5: Across all age groups, 92% of participants are concerned about climate change. Broken down by age group, the 55-64 and 65-74 ranges are the most concerned with 67% each answering "extremely concerned," followed by 18-24 with 63%— this group also had the biggest variety in answers with 4 out of 5 options selected. Those in 45-54 range are the least concerned with 40% answering "not at all concerned."

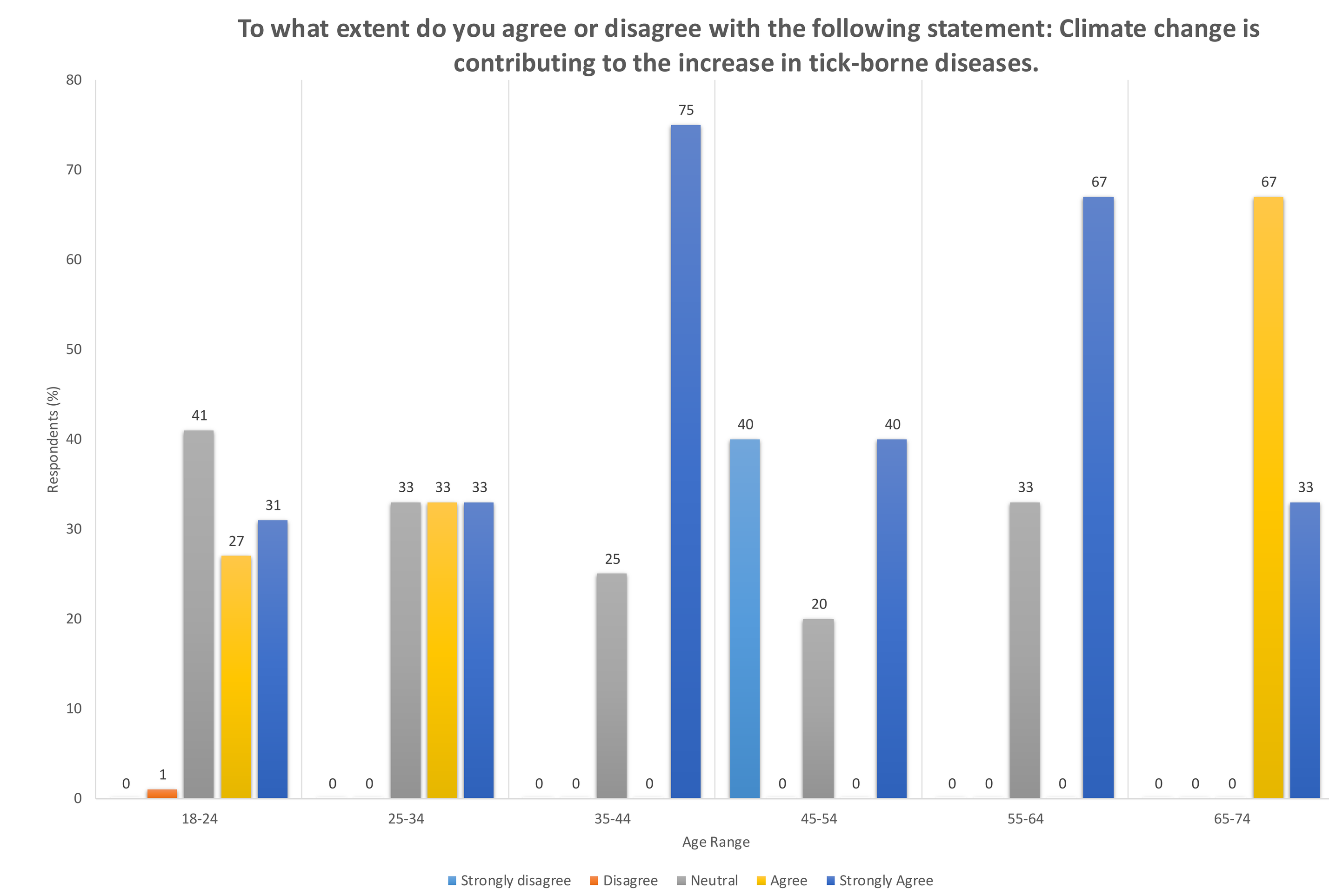

Figure 6: Over half of all participants either agree or strongly agree that climate change is contributing to the increase in tick-borne diseases. The 35-44 age group had the most agreement with 75% responding "strongly agree."

Discussion

Our survey results thus far indicate that Eau Claire County residents are concerned about tick-borne diseases and the implications of climate change's impact on the environment and the rise in tick-borne disease incidence.

- Only half of the participants felt well-informed about tick-borne diseases. This shows a need for more public education efforts; increasing public outreach at local events may be a possible method for helping more Eau Claire residents to become well-informed about tick-borne disease.
- While all participants were familiar with Lyme Disease, few were familiar with other tick-borne diseases. Education efforts should focus on raising awareness about the lesser-known diseases.
- This research is ongoing and as most participants so far have been 18-24 years old, we will focus efforts on finding a more diverse demographic of participants to better represent the county.

Acknowledgements

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References

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