

The Influence of Time Outdoors on Knowledge of Invasive Species

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Abstract

In this study, we worked to see if there is a correlation between the amount of time one spends outdoors and their ability to identify invasive species. After our initial hypothesis, however, we thought of other factors that could influence people's ability to identify invasive species. We concluded that reason for spending time outdoors and education level are also important factors in our hypotheses.



Purple loosestrife – invasive to NYS

Starling – invasive to NYS

Introduction

Invasive species are species introduced to an area (either intentionally or accidentally) where they do not naturally occur and have the ability to spread autonomously. Invasive species are a problem because they can drive out species native to an area through predation, outcompeting for resources, and aggression. The purpose of this study is to determine whether the amount of time one spends outdoors has any effect on their ability to identify invasive species. Our initial observations led us to hypothesize that people who spend more than 10 hours per week outdoors would be able to correctly identify more invasive species in New York State. After creating this initial hypothesis, however, we thought of other factors that could affect people's ability to identify invasive species. We realized that some people may have been exposed to the topic already, or work in a career with an outdoor setting. We concluded that reason for spending time outdoors and education level are also important factors in our hypotheses.

Methodology

To address our research questions, we created a survey to test participants' knowledge of invasive species in New York State. First, participants confirmed that they are over the age of 18 and consented to participate in the survey, which had IRB approval. Participants then answered questions related to our predictor variable: they described their level of education, how much time they spend outdoors per week, and how they spend this time outdoors (work, recreation, sports). Next, participants were presented with ten pictures of species found in New York State and instructed to identify the species as native or invasive, then further asked to identify invasive species by name.

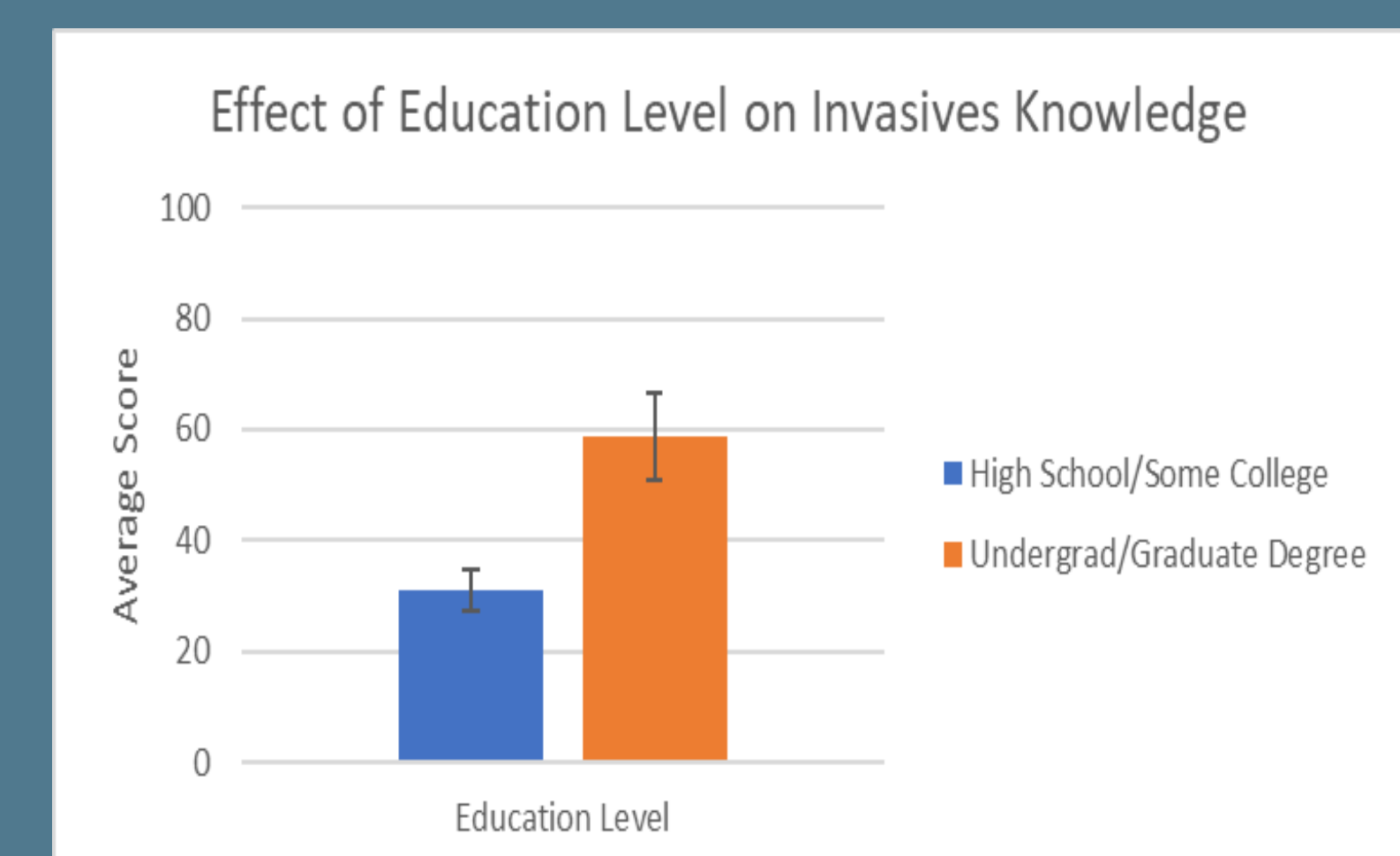
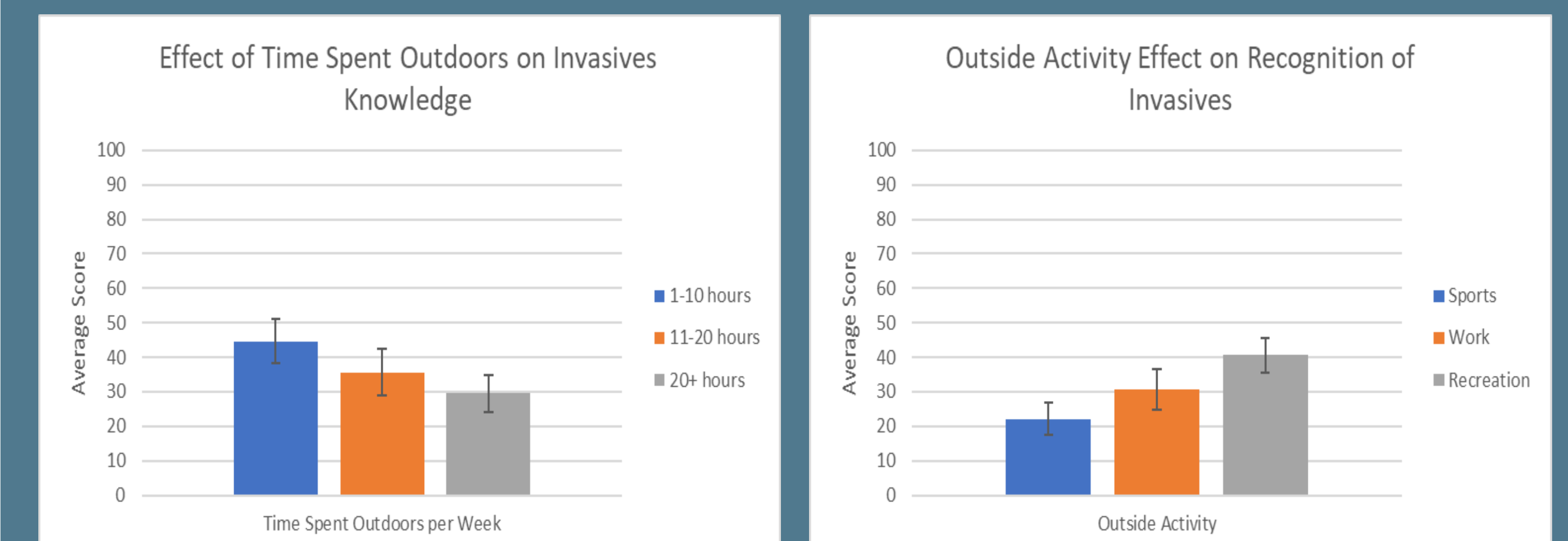
We administered the survey online through our social media platforms from April 5-15 2023. We acknowledge that this is not a random sample, but was our best approach to random given logistical constraints. A total of 51 people participated in the survey. We determined how many of the ten species each participant identified correctly as invasive or native and created a composite score (i.e. 2/10) which we expressed as a percentage (20%). We performed an ANOVA test to determine whether there was significant difference between the answers of people who spend 1-10 hours outdoors, 11-20 hours outdoors and those who spend 20+ hours outdoors. We also used an ANOVA test to see if there was a significant difference between the answers of participants based on how they spend the majority of their time outside (work, sports, recreation). To test for a significant difference between the answers of the participants based on education level, we split the sample group into two categories, graduate/undergraduate degree and some college/high school diploma and conducted a t-test. Following these tests, we also looked at the responses of the participants who said they knew what an invasive species was to evaluate their definitions of invasive species. Finally, we used qualitative analysis to determine if participants were familiar with all aspects of what makes a species invasive.

Conclusion

As far as defining the term invasive species, there was no significant variation due to level of education, however a significant number of respondents who said they spend little to no time outdoors answered that they do not know what an invasive species is. While our initial hypothesis was disproved, we found that our secondary hypotheses were correct. The results of this study suggest that education has an important role in familiarity with invasive species. Perhaps environmental education should be implemented as a strategy in invasive species removal, as more people would be able to recognize invasive species and report them to environmental agencies. Additionally, the study results also suggest that recreation is an important factor in invasive species recognition. Placing signage in recreation areas (i.e. parks) may help boost knowledge.

Results

This study found that the amount of time one spends outdoors does not have a significant impact on their ability to identify invasive species. However, we found that the education level and reason for spending time outdoors both had a significant impact on participants ability to correctly identify invasive species. Those with an undergraduate or graduate degree scored better on the invasive species identification than those with only some college or a high school diploma. Additionally, people who spent the majority of their time outside recreating scored better than those who spent the majority of their time outdoors working or playing sports. When asked if they could define invasive species, 26 individuals were correct (or had a general idea). 16 respondents incorrectly defined invasive species. Six respondents were not able to define invasive species.



Acknowledgements

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