

# ENVIRONMENTAL HEALTH LITERACY

## Evaluating the impact of our research

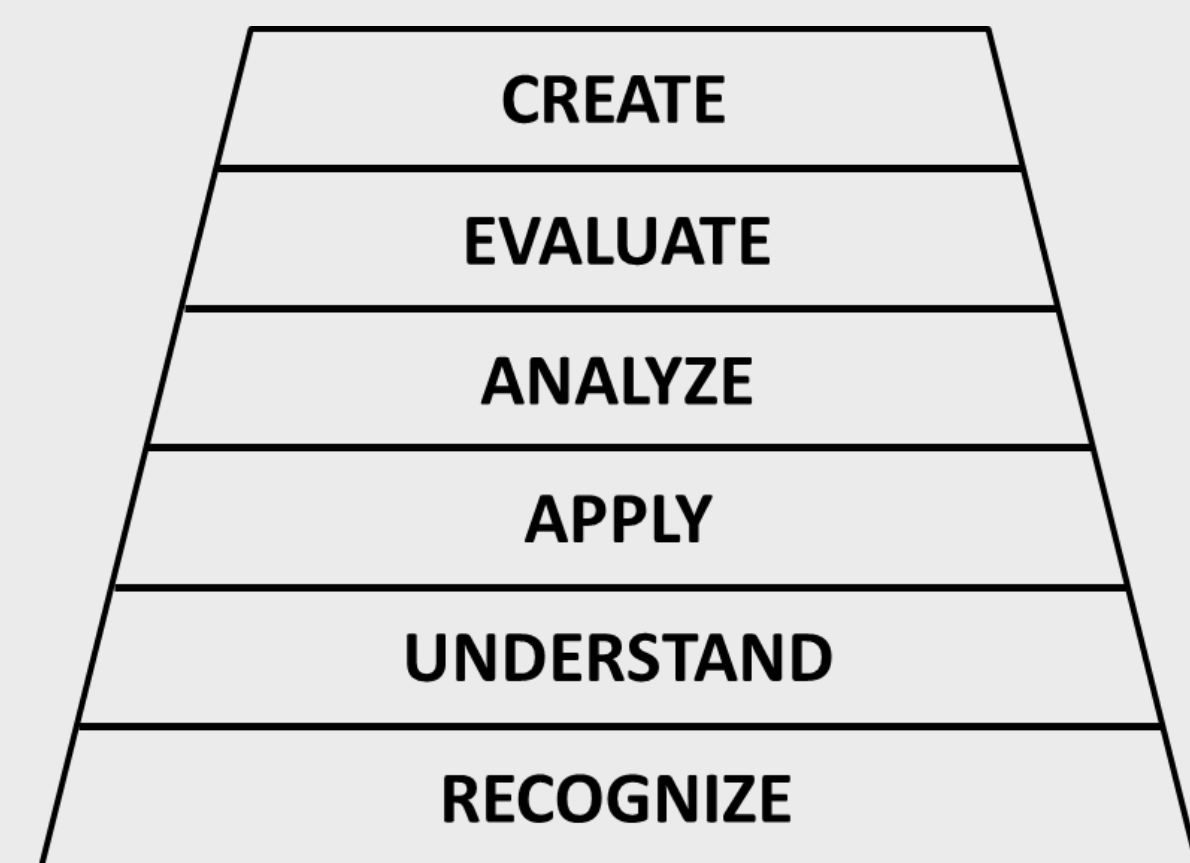
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### BACKGROUND

We are constantly updating our research in the growing field of Environmental Health, yet we do not always translate this information in a way which is understood by the general public. This has resulted in tools which gauge the public's understanding of health information, such as the eHEALS tool. This has been combined with an adaptive eEHL tool to gauge environmental health literacy for our research. A person's environmental health literacy can be calculated on their abilities in six categories – to recognize, understand, apply, evaluate, and create.

The eHEALS tool measures an individual's confidence to recognize, understand and apply information found on the internet.

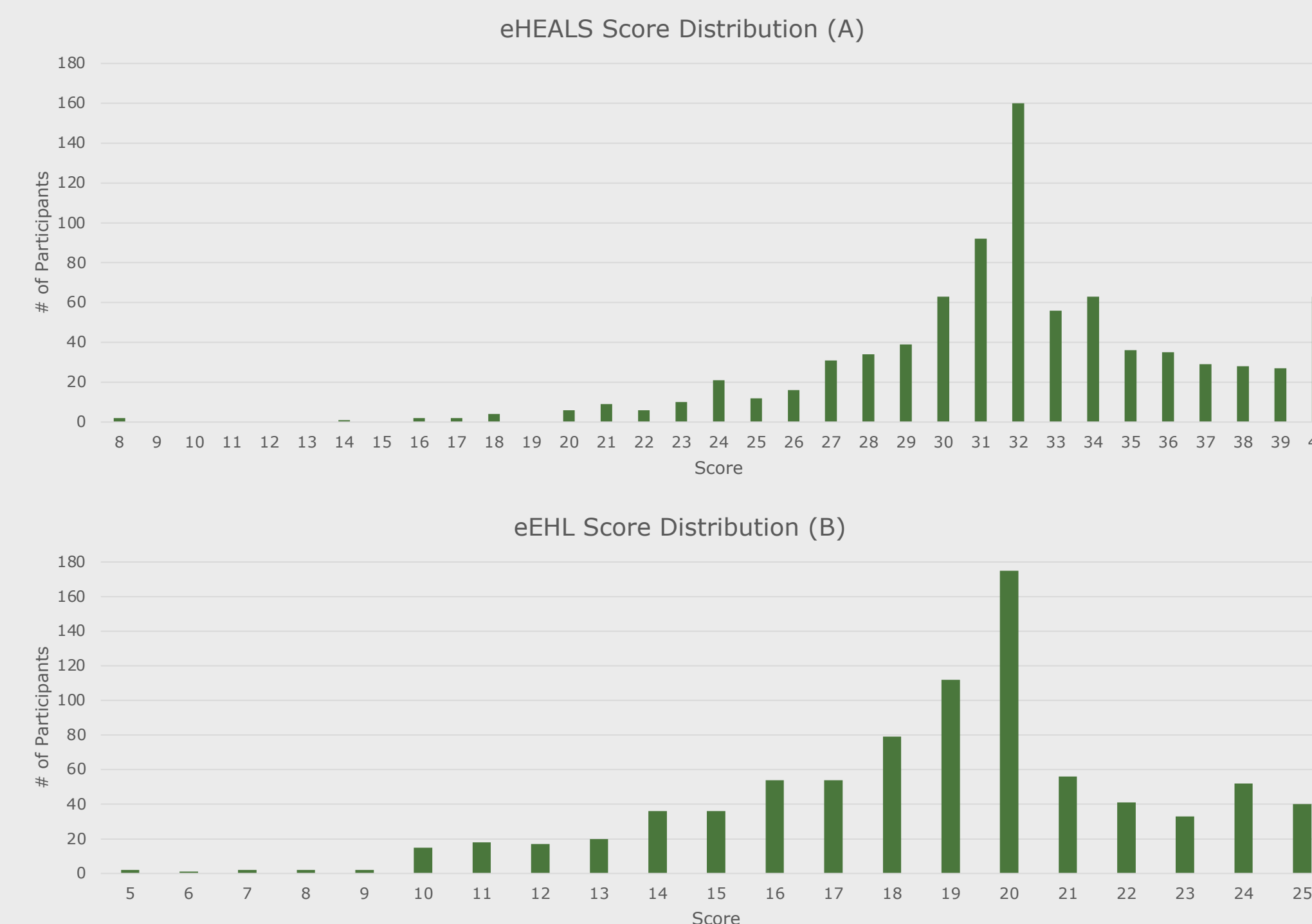


**Figure 1.** EHL Taxonomy. Developed by Finn and O'Fallon (EHP. 2017), this taxonomy shows increasing levels of environmental health literacy (EHL).

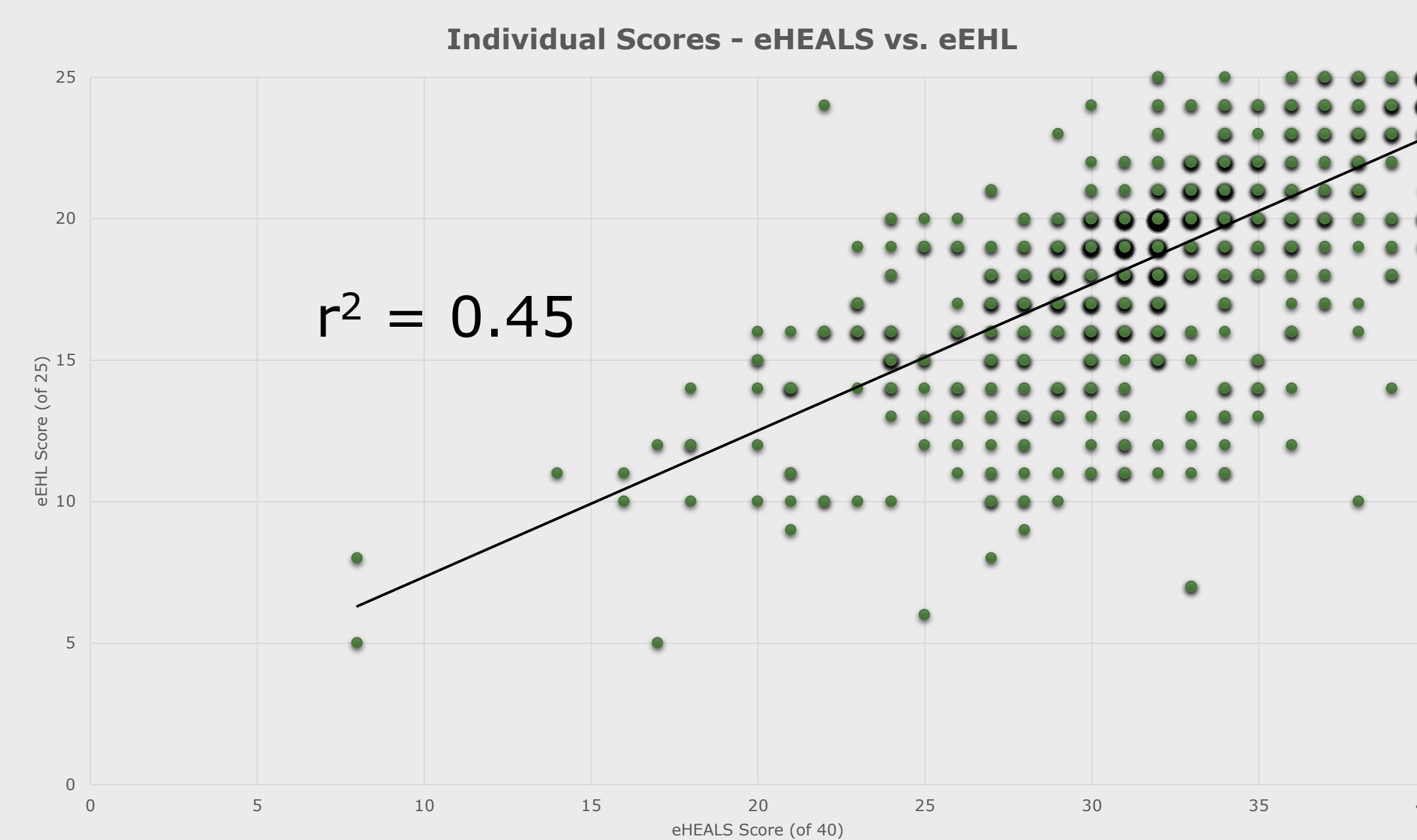
### METHODS

- Using the validated eHEALS scale as a template, we developed a 5-point scale for evaluating participant confidence at finding environmental health resources on the internet (see side-bar).
- Survey disseminated via mechanical workers (mTURK) platform on Amazon
- 869 individuals completed the mTURK survey, and is described in Table 1.
- All data was exported to Excel. A data dictionary was developed. Scores for each scale were calculated by assigning each response a score of 1-5 depending on a person's confidence, with 1 being the lowest possible confidence and 5 being the highest. All responses were added together to determine their total score.
- eHEALS max score = 40
- eEHL max score = 25
- Statistical analysis was conducted in Excel.

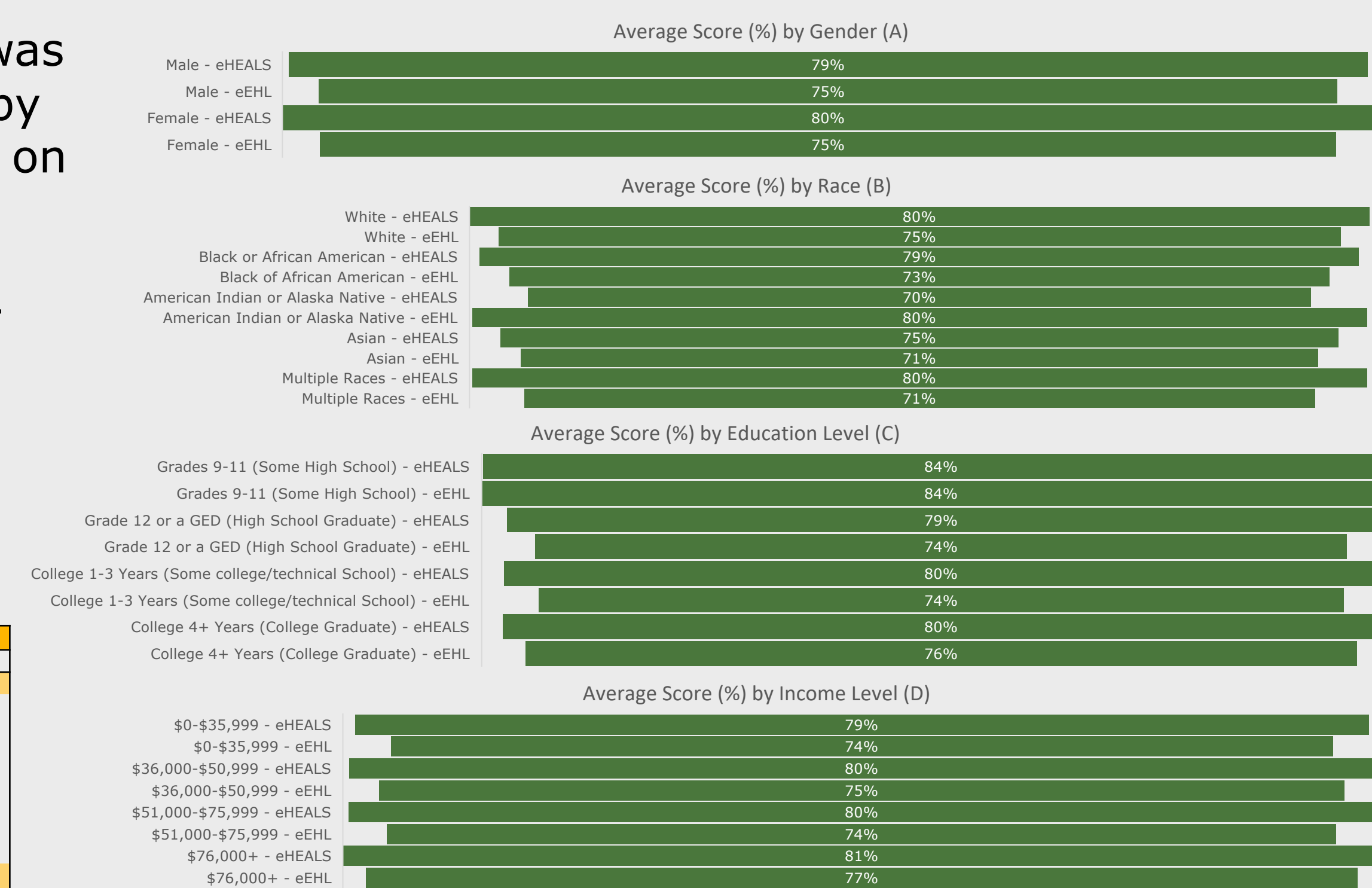
Survey Demographics		
Number of participants: 869 total, with 22 excluded in analysis		
<b>Age</b>		
< 18	0	Never attended school or Kindergarten
18 - 25	102	Grades 1 - 8 (Elementary)
26 - 40	452	Grades 9 - 11 (Some High School)
41 - 64	273	Grade 12 or a GED (High School Graduate)
65 - 74	18	College 1 - 3 years (Some college or technical school)
75+	1	College 4+ years (College graduate)
<b>Gender</b>		
Male	353	
Female	486	
<b>Race</b>		
White	721	
Black or African American	52	
American Indian or Alaska Native	2	
Asian	38	
Asian Islander	0	
Pacific Islander	0	
Multiracial	22	
<b>Homeownership</b>		
Rent	370	
Own	419	
Other Arrangement	57	



**Figure 2.** Distribution of scores in the eHEALS (A) and the eEHL scale (B).



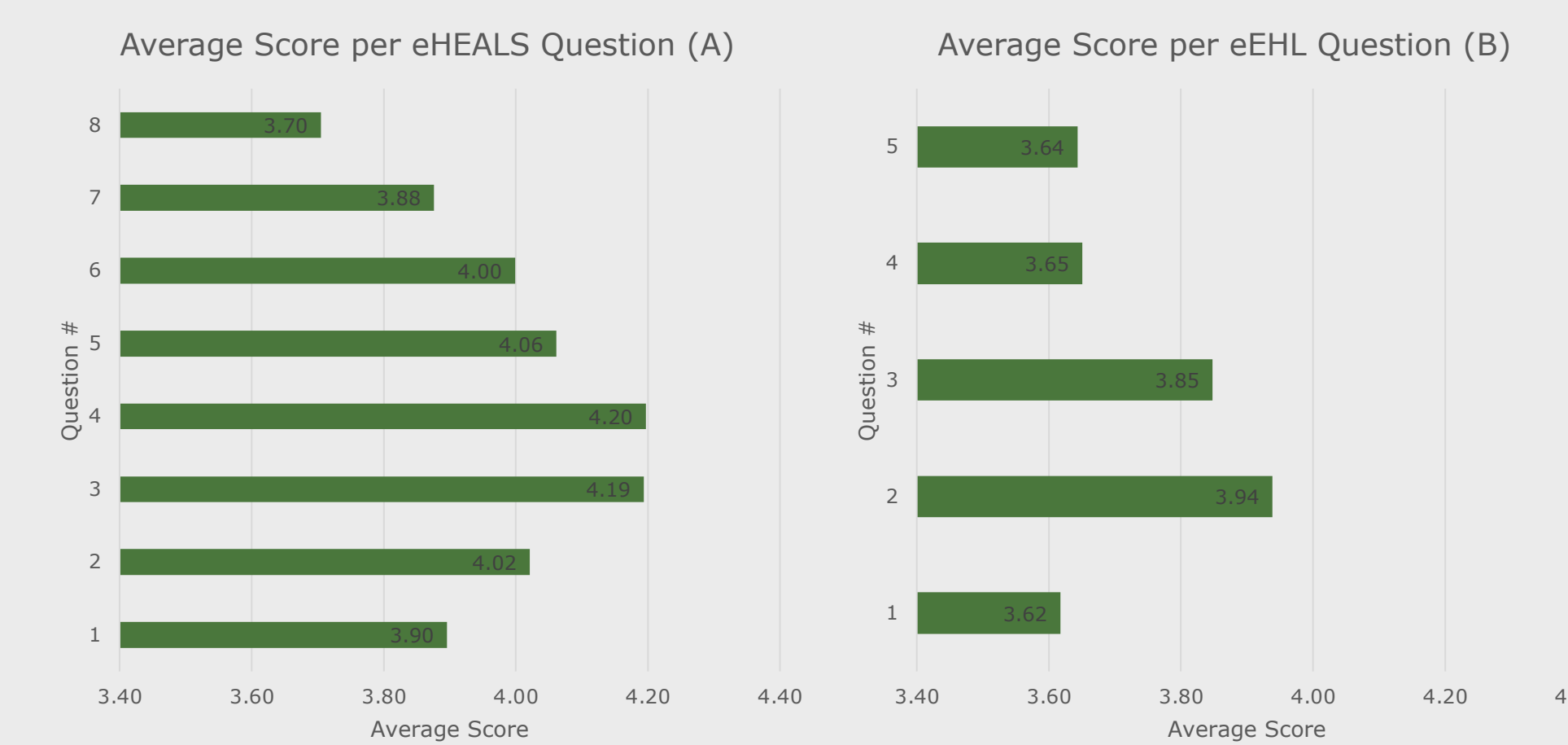
**Figure 3.** Correlation between eHEALS and eEHL. Scores were not highly correlated ( $r^2 = 0.45$ ).



**Figure 4.** Impact of gender (A), race (B), education (C) and income (D) were evaluated on eHEALS and eEHL scores.

### RESULTS

- The scores between eHEALS and eEHL are not highly correlated.
- Scores on either tool do not seem to be impacted by gender, race, education, or income.
- Survey respondents on average scored higher on eHEALS than on eEHL questions.
- There is a much higher confidence in finding health information on the internet than there is in determining its quality and utilizing it in making effective health decisions.



**Figure 5.** Average scores for each question on the eHEALS (A) and eEHL (B) surveys.

### DISCUSSION

Based on our results, the general public tend to be more confident in finding and utilizing health information on the internet than they are when it comes to environmental health information.

On the eHEALS, our survey respondents expressed the highest confidence in their knowledge of what health resources are available on the internet and where to find them, but the lowest confidence in determining the quality of this information and making appropriate health decisions.

On the eEHL, our respondents expressed the highest confidence in using environmental health information from the internet, and are aware of common hazardous substances. Finding this quality information and evaluating the health effects from these hazards showed a much lower confidence.

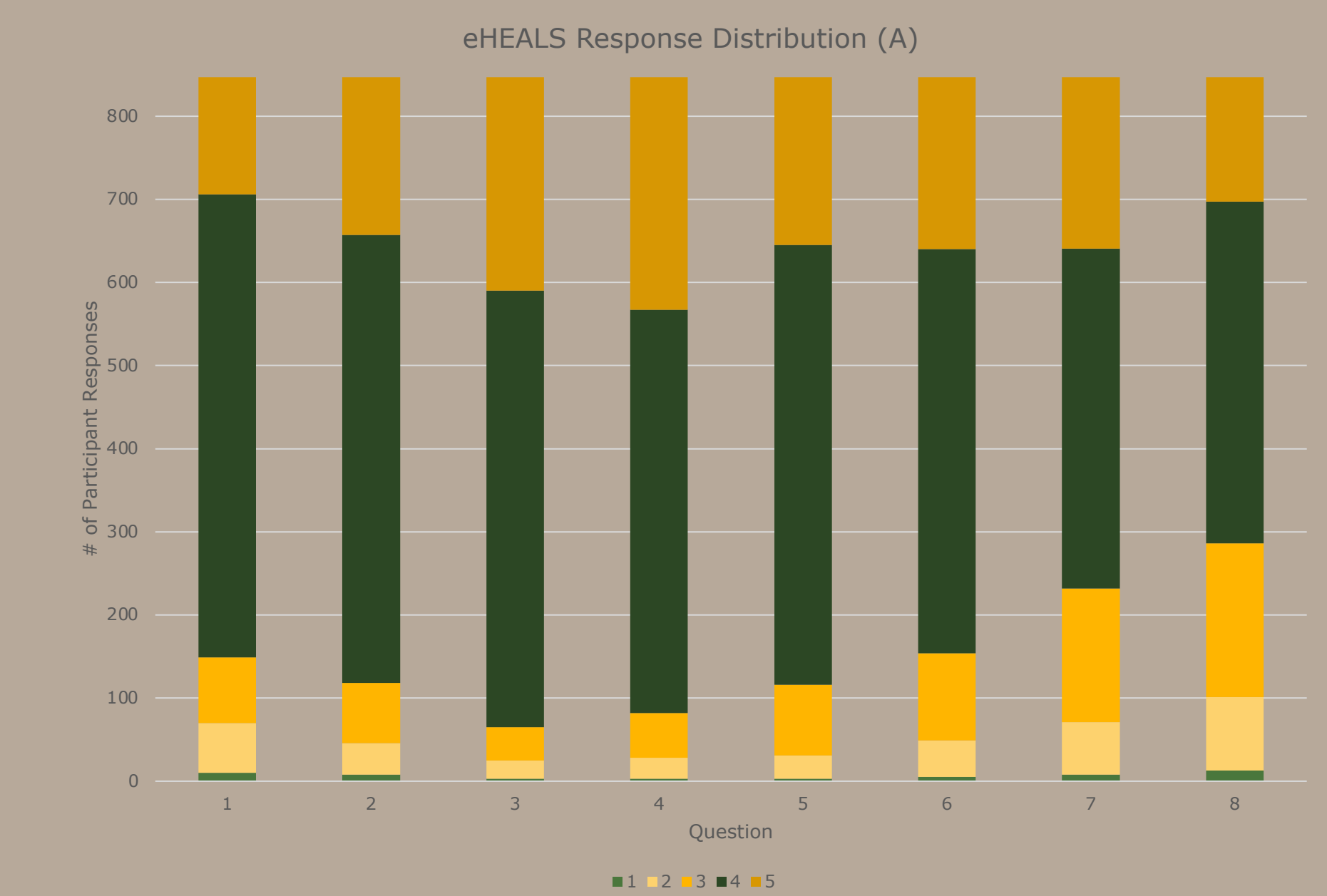
In order to better understand and improve the impact of our environmental health research on the public, we have an interest in understanding where people are accessing their information and how it is being used. From there, we can work to better our communication on how our environment affects our health, and where to find appropriate resources.

### ACKNOWLEDGEMENTS

Funding provided by URSA Engage

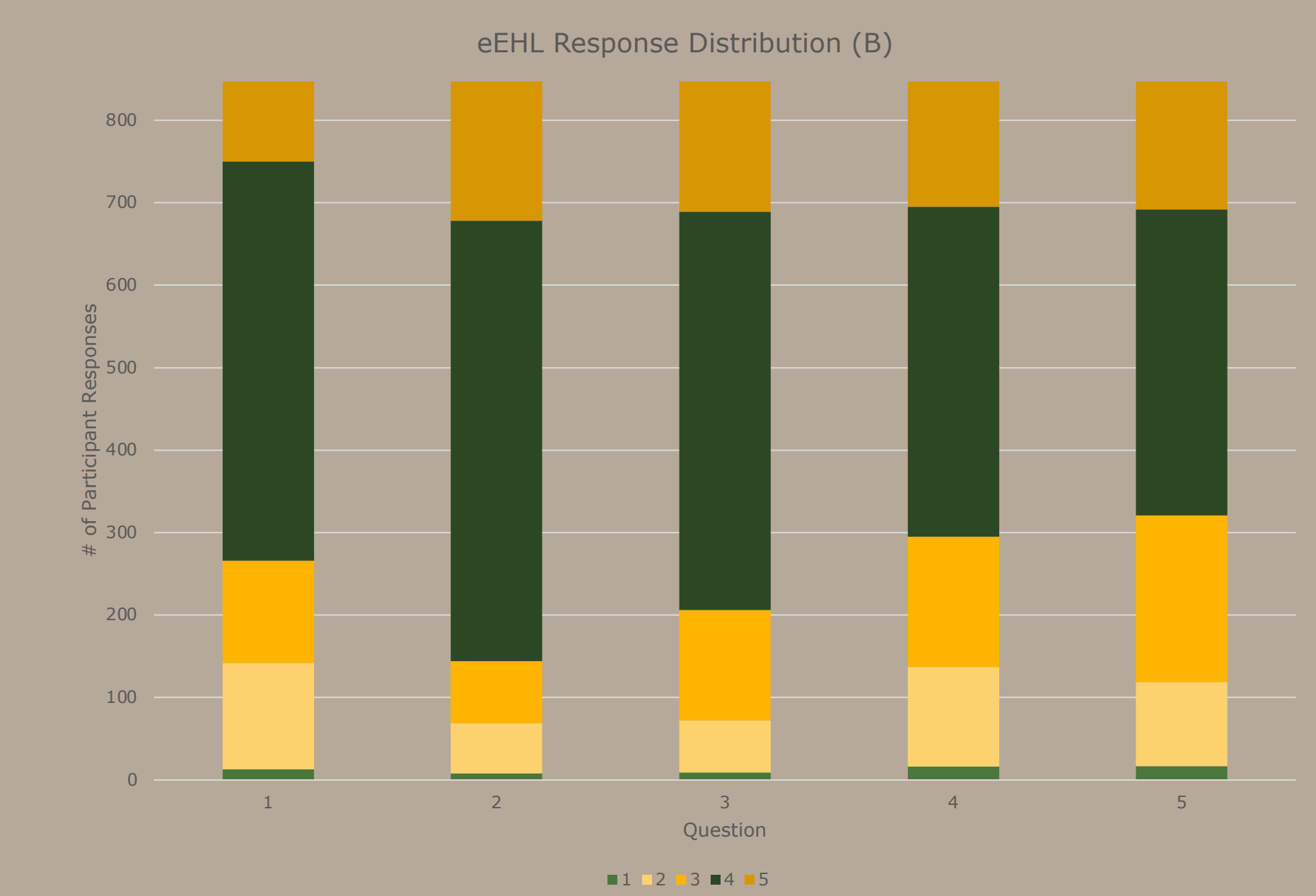
### eHEALS QUESTIONNAIRE

- I know how to find helpful health resources on the Internet.
- I know how to use the Internet to answer my health questions.
- I know what health resources are available on the Internet.
- I know where to find helpful health resources on the Internet.
- I know how to use the health information I find on the Internet to help me.
- I have the skills I need to evaluate the health resources I find on the Internet.
- I can tell high quality from low quality health resources on the Internet.
- I feel confident in using information from the Internet to make health decisions



### eEHL QUESTIONNAIRE

- I know how to find helpful resources on the Internet about hazards in the home.
- I know how to use the information about hazards in the home that I find on the Internet.
- I know what lead, mold, phthalates, radon, and flame retardants are.
- I have the skills I need to evaluate health effects from hazards in the home.
- I can tell high quality information from low quality information regarding hazards in the home.



**Figure 6.** Distribution of responses for each question on the eHEALS (A) and eEHL (B) surveys.

