A public health campaign analyzes the association between access to healthy food options (high vs. low availability) and obesity rates (percentage) in different communities. Specify the response and explanatory variables, considering potential confounding factors like income and physical activity levels.

2. A clinical trial tests the safety and efficacy of a new drug (treatment vs. placebo) for lowering cholesterol levels (measured in mg/dL) in patients with high cholesterol. Define the response and explanatory variables.

3. A health education program evaluates the influence of two educational interventions (video vs. interactive workshop) on knowledge and understanding of diabetes management (measured by scores) in individuals with type 2 diabetes. Specify the response and explanatory variables.

4. A sleep study investigates the impact of regular exercise (presence or absence) on sleep quality (measured by sleep diary) in adults with insomnia. Identify the response and explanatory variables with the types.

5. A study assesses the relationship between smartphone screen time (hours per day) and sleep duration (hours per night) in teenagers. What are the response and explanatory variables with the types?

6. Researchers examine the relationship between dietary fiber intake (grams per day) and gut microbiome composition (measured by DNA sequencing) in adults with digestive issues. What are the response and explanatory variables?

7. An experiment tests the effectiveness of two teaching methods (traditional lecture vs. interactive learning) on math test scores (percentage) in high school students. Identify the response and explanatory variables with their types. N.B. A Likert scale is a rating scale that assesses opinions, attitudes, or behaviors quantitatively.

8. A study investigates the relationship between dietary salt intake (grams per day) and blood pressure (measured in mmHg) in adults with pre-hypertension. What are the response and explanatory variables and their types?

9. A public health survey analyzes the association between access to preventive healthcare services (presence or absence) and rates of chronic diseases (prevalence) in different communities. Specify the response and explanatory variables.

10. A clinical trial tests the safety and efficacy of a new treatment for reducing pain and inflammation in individuals with arthritis (measured by pain scores). Define the response and explanatory variables.

11. A study analyzes the association between smoking status (never smoker, current smoker, former smoker) and risk of developing heart disease (presence or absence) in middle-aged adults. Specify the response and explanatory variables with their types.