Stating and Refining the Question

Quiz, 8 questions

1 point

1. Suppose you conduct a survey of people and ask them various questions about their current health status and their home environment. Which of the following is an example of a **descriptive** question that can be answered by these data?

- What is the prevalence of asthma in the U.S. population?
- Amongst children in the U.S., how is living in an urban environment related to developing doctor-diagnosed asthma?
- What would be the change in asthma prevalence if we installed air purifiers in people's homes?
- What is the prevalence of asthma amongst people in the survey?

1 point

2. Mistaking an exploratory question for an inferential question is commonly referred to as

- Hypothesis testing
- Data dredging
- Predictive modeling
- Overfitting

1 point

3. When asking a predictive question, we are primarily NOT concerned with

- obtaining a low prediction error rate.
- maximizing correlation between the outcome and a set of predictors
- developing a deep understanding of the causal mechanism underlying variation between different features of the data.

1 point

4. What is the primary goal of an inferential question?

- To identify deterministic relationships between features.
- To make a statement about a quantity or pattern that cannot be observed.
- To look for patterns, trends, or relationships between variables in a dataset.
- To summarize a characteristic of a dataset.

1 point

5. Suppose you run a web site and the web server that hosts the site keeps track of every visitor that comes to the site and which country they are coming from. You want to answer the question "How many of the visitors to our web site are from China?" This is an example of which type of question?

- Predictive
- Causal
- Descriptive
- Inferential

1 point

6. The following summary was taken from a recent study of diabetes published in the *Journal of the American Medical Association.*

Importance: Previous studies have shown increasing prevalence of diabetes in the United States. New US data are available to estimate prevalence of and trends in diabetes.

Objective: To estimate the recent prevalence and update US trends in total diabetes, diagnosed diabetes, and undiagnosed diabetes using National Health and Nutrition Examination Survey (NHANES) data.

Design, Setting, and Participants: Cross-sectional surveys conducted between 1988-1994 and 1999-2012 of nationally representative samples of the civilian, noninstitutionalized US population; 2781 adults from 2011-2012 were used to estimate recent prevalence.

Main Outcomes and Measures: The prevalence of diabetes was defined using a previous diagnosis of diabetes or, if diabetes was not previously diagnosed, by (1) a hemoglobin A1c level of 6.5% or greater or a fasting plasma glucose (FPG) level of 126 mg/dL or greater (hemoglobin A1c or FPG definition) or (2) additionally including 2-hour plasma glucose (2-hour PG) level of 200 mg/dL or greater (hemoglobin A1c, FPG, or 2-hour PG definition). Prediabetes was defined as a hemoglobin A1c level of 5.7% to 6.4%, an FPG level of 100 mg/dL to 125 mg/dL, or a 2-hour PG level of 140 mg/dL to 199 mg/dL.

Conclusions and Relevance: In 2011-2012, the estimated prevalence of diabetes was 12% to 14% among US adults, depending on the criteria used.

What type of question was asked in this study?

- Predictive
- Descriptive
- Inferential

1 point

7. One characteristic of a good question is that it is

- Easy to answer

- Quantitative rather than qualitative
- Plausible

1 point

8. Which is a benefit of asking a sharp question?

- Sharp questions generally do not have ethical problems associated with them
- Sharp questions can lead to well-defined interventions or change of behavior
- Sharp questions are relevant to broad audiences.

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