Section Name: Statistical Literacy

Learning Objectives for Section:

- Locate the source of a statistic
- Evaluate source and purpose of a statistic
- Determine how a problem is defined and measured in a study
- Become familiar with language used to describe statistics, and understand common presentation mistakes

Related ACRL Standards Addressed:

STANDARD ONE: The information literate student determines the nature and extent of the information needed.
Performance Indicator 2 - The information literate student identifies a variety of types and formats of potential sources for information.

STANDARD TWO: The information literate student accesses needed information effectively and efficiently.
Performance Indicator 1 - The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

STANDARD THREE: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.
Performance Indicator 2 - The information literate student articulates and applies initial criteria for evaluating both the information and its sources.
Performance Indicator 4 - The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.

Multimedia:

Video: Important Concepts in Statistical Evaluation (4:56)
Video: Questions to Ask When Evaluating Statistics (4:50)
Quiz: Statistical Literacy Section (10 questions)

Introduction (real world relevance):

We are surrounded by statistics that try to summarize the vast amount of data in the world around us. Before making important decisions based on a statistic, it is important to evaluate the validity, accuracy, and of the information presented.
Topics for Discussion

Prevalence of statistics

How are statistics created?
- Definition of problem(s)
- Identification and measurement of variables
- Population and sample
- Calculation and analysis
- Presentation
- All of these steps depend on a person making judgments

Evaluating Statistics

“All statistics, even the most authoritative, are created by people. This does not mean that they are inevitably flawed or wrong, but it does mean that we ought to ask ourselves just how the statistics we encounter were created… We should not simply accept statistics by uncritically treating numbers as true or factual. If people create statistics, then those numbers need to be assessed and evaluated.” —Joel Best, Damned Lies and Statistics, 2001
- Source of study
- Source of data
- Why is data tracked/information gathered?
- Methodology – definition, measurement, calculation, analysis
- Presentation
- Are the words accurately describing the data?
- Do visual presentations match the data?
- Are correlation and causation treated correctly?
- Put the data in context – find related data to use as a benchmark

Activities

Either provide a health article from a popular new site, such as the BBC or New York Times, or ask students to find one. Ask students to find the original source of the statistic and identify:
- Who created this information (study authors)
- Where the study was originally published
- The purpose of the study
- The source of the data
- A description of the population
- A description of the sample
- A short definition of the problem
- A short definition of the variables for the statistic reported in the newspaper
- Benchmark variables
- Questions about how the data may be flawed

If time allows, ask the students to find benchmark variables and write an evaluation of the statistic.
### Websites


### Readings
