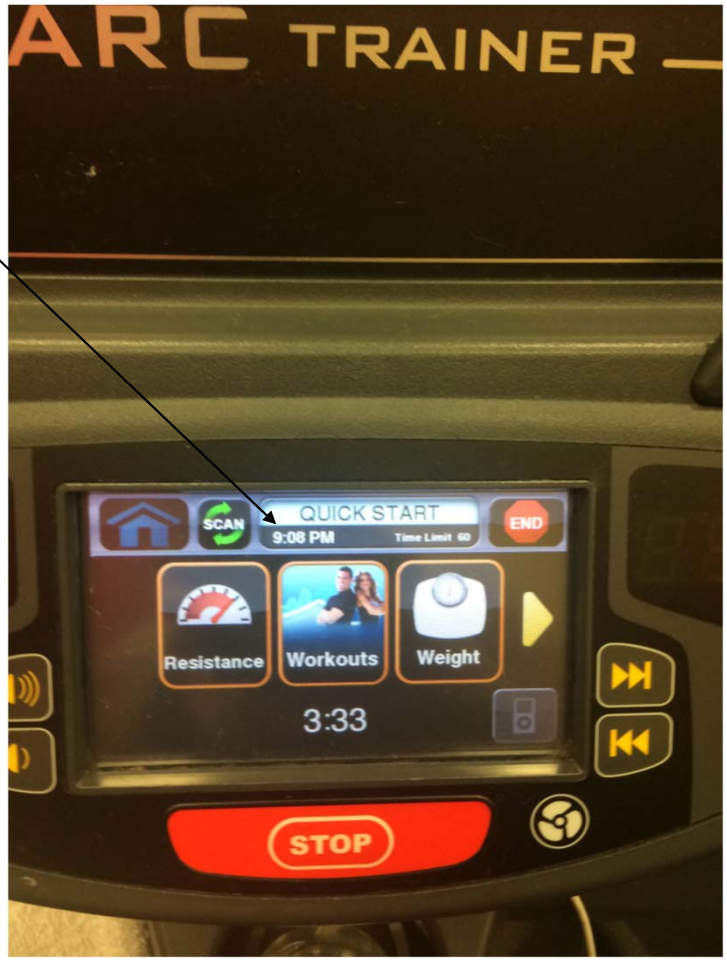
THANKS FOR THE SUPPORT!!

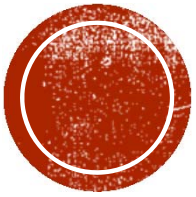
A few weeks back I claimed I was going to work out after class.

This did not happen.

Last week I was SUPER stressed and I was thinking about my promise…

I went and it created a great momentum for the rest of the week!





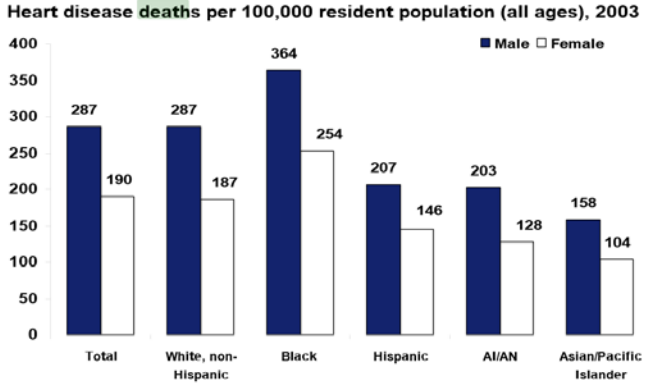
RESEARCH METHODS

MEASURING HEALTH

- What is an epidemiologist?
- "Calculating Rates"
  - **Mortality**: number of deaths caused by specific illness per population
  - **Morbidity**: number of specific illnesses per population
  - **Incidence**: number of *new* cases of specific illness per population (for a specific time)
  - **Prevalence**: number of *all* current cases of specific illness per population (for a specific time)
  - **Relative risk**: number of cases of specific illness in one population relative to another population

MORTALITY

Chart 3-11. Black men and women are more likely to die from heart disease than all other racial/ethnic groups.

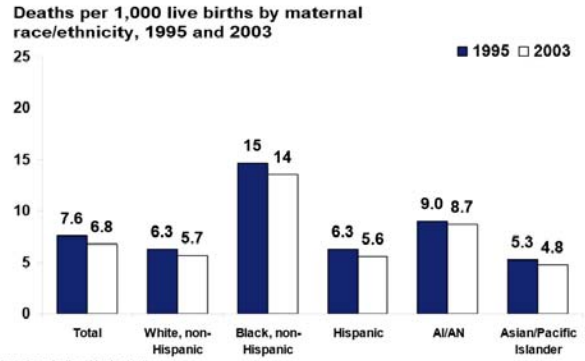


AI/AN = American Indian/Alaska Native.

Note: Data are age adjusted.

Source: National Center for Health Statistics. *Health, United States, 2006: With Chartbook on Trends in the Health of Americans.* 2006.

Chart 3-5. Infant mortality rates are still more than two times higher for blacks than for whites, despite a slight decline for all groups in the past eight years.



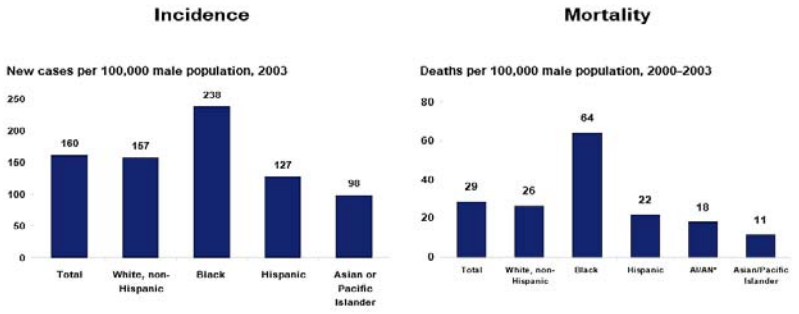
AI/AN = American Indian/Alaska Native.

Note: Infant is defined as a child under one year of age.

Source: T. J. Matthews and M. F. MacDorman, "Infant Mortality Statistics from the 2003 Period Linked Birth/Infant Death Data Set," *National Vital Statistics Reports,* May 3, 2006 54(16):1–29.

INCIDENCE AND MORTALITY*

Chart 3-14. Black men are 50 percent more likely to have prostate cancer than whites but are more than twice as likely to die from it.

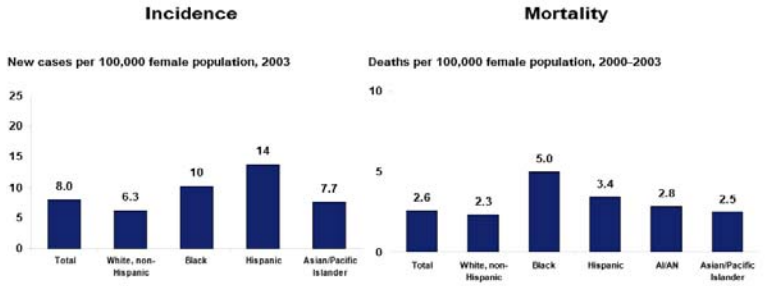


AI/AN = American Indian/Alaska Native.

Note: Data are age adjusted.

Source: National Center for Health Statistics. *Health, United States, 2006: With Chartbook on Trends in the Health of Americans.* 2006.

Chart 3-15. Hispanic women are twice as likely to have cervical cancer than whites; black women are twice as likely to die from the disease.



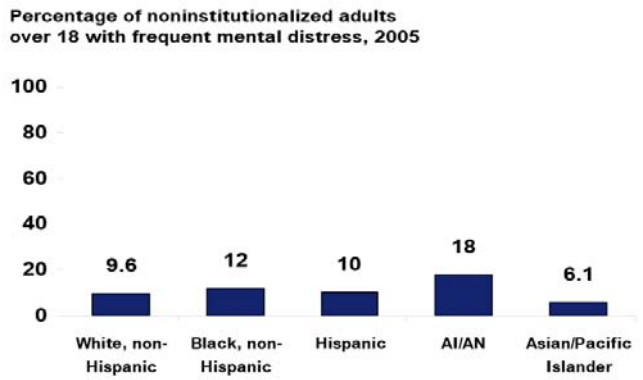
AI/AN = American Indian/Alaska Native.

Note: Data are age adjusted.

Source: National Cancer Institute, *Surveillance Epidemiology and End Results (SEER) Cancer Statistics Review, 1975–2003.*

MORBIDITY

Chart 3-20. American Indians/Alaska Natives are nearly twice as likely as whites to have frequent mental distress.

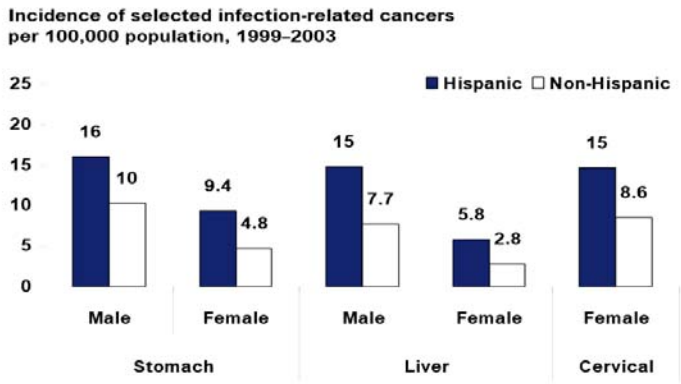


AI/AN = American Indian/Alaska Native.
Note: Frequent mental distress is defined as having 14 or more mentally unhealthy days in the year.
Source: Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. 2005.

THE COMMONWEALTH FUND

PREVALENCE

Chart 3-16. Hispanics are more likely to suffer from infection-related cancers than non-Hispanics.

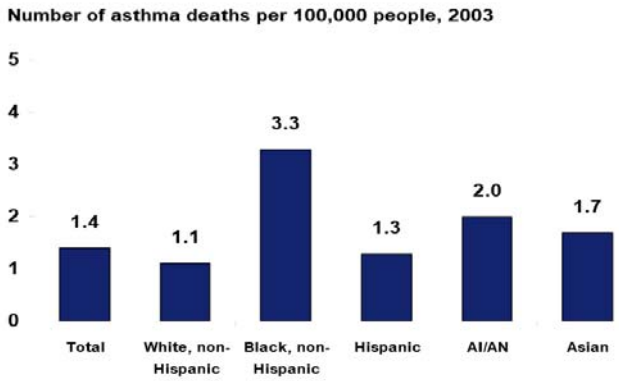


Note: Data are age adjusted to the 2000 U.S. standard population.

Source: H. L. Howe et al., "Annual Report to the Nation on the Status of Cancer, 1975–2003, Featuring Cancer Among U.S. Hispanic/Latino Populations," *Cancer,* Oct. 15, 2006 107(8):1711–42.

RELATIVE RISK

Chart 3-19. Blacks are three times more likely to die from asthma than whites.

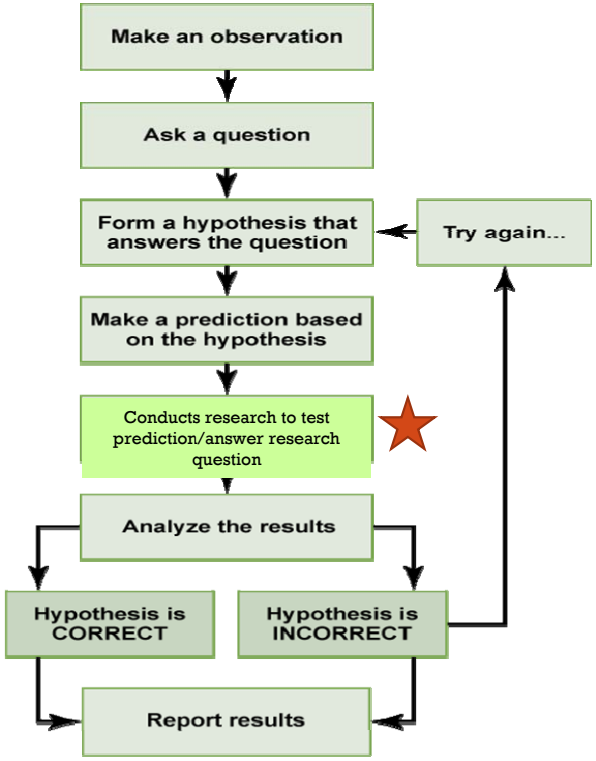


AI/AN = American Indian/Alaska Native.
Note: Data are age adjusted to the 2000 United States standard population.
Source: L. Akinbami, *Asthma Prevalence, Health Care Use and Mortality: United States, 2003–05.* National Center for Health Statistics.

QUESTIONS:

- *What* do these charts tell us?
- How do you *feel* about the usefulness of these charts after learning about the (lack of) relationship between race and biology?
- How *should* these charts be used?
- How might these charts *inform research* done by health psychologists?

See more at The Common Wealth Fund

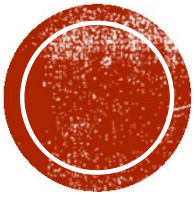


Notes:

- The question asked is either "basic" or "***applied***"
- "Try again…" NEVER with the same data set
  - *data mining*
- Literature review is ESSENTIAL
  - It's the "educated" piece of an "educated guess"
- Data can be analyzed in a NUMBER of ways
  - The type of analysis MUST be determined before the research is conducted
- Results are to be interpreted in the context of previous literature
- If you are ADDING something to the existing conversation, you PUBLISH results (regardless of hypothesis correctness)

SETTING UP A HYPOTHESIS: MAKING THINGS MEASUREABLE

- Independent variable
  - The first domino to fall
- Dependent variable
  - Is related to or "caused" by the Independent variable
- "If, then" wording helps to identify these variables
- Use the term "cause" RARELY (only in experiments)
- Confounding variables (IMPORTANT TO KEEP IN MIND!)
  - Think of the phrase "above and beyond"
  - It's like preparing yourself in advance for criticism of others
- Example… physician racism and # of doctor's visits relationship



MODES OF COLLECTING DATA

Observation, Case Studies, Surveys/Interviews

OBSERVATION

- Observation differs from most other forms of data collection--researcher does not manipulate variables or directly question participants.
- The advantages of observation:
  - observing natural behavior
  - refining hypotheses
  - allowing for observation of behavior that cannot be produced in an artificial environment for ethical or practical reasons.
- The disadvantages of observation:
  - studies do not produce quantitative data
  - do not allow for cause and effect statements
  - may be very time consuming
  - can be prone to researcher bias.

CASE STUDIES

- Case studies allow for the development of novel hypotheses
  - provide detailed descriptions of rare events
  - explore the intricacies of existing theories of causation.
- Case studies cannot directly indicate cause and effect relationships or test hypotheses
  - findings from case studies cannot be generalized to a wider population.
- Famous case studies, like that of Phineas Gage, and researchers using case studies, like Jean Piaget, have helped establish entire fields of psychology.
  - Phineas Gage helped researchers understand the relationship between brain areas and personality
  - Piaget developed a model of development based on his studies.

SURVEYS AND INTERVIEWS

- The survey method of data collection is likely the most common of the research methods.
- The benefits of this method include low cost, large sample size, and efficiency.
- The major problem with this method is accuracy: since surveys depend on subjects' motivation, honesty, memory, and ability to respond, they are very susceptible to bias.
  - You CAN and MUST combat bias in a number of ways
    - Power analysis
    - Language
    - Incentive
    - Transparency
    - Sampling methods
- A researcher must have a strong understanding of how to properly frame survey questions in order to gather reliable and relevant information.
  - Psychological measurement is its own discipline--- reliable measures are certain
  - Reliability AND validity

TYPES OF RESEARCH

Descriptive, Correlational, Experimental

DESCRIPTIVE RESEARCH

- Descriptive studies do not test specific relationships between factors
  - they provide information about behaviors and attributes with the goal of reaching a better understanding of a given topic.
- Descriptive research is a useful method of gathering information about rare phenomena that could not be reproduced in a laboratory or about subjects that are not well understood.
- Descriptive research is an example of "basic" research

CORRELATIONAL

- Defined as: "the extent to which 2 or more things differ similarly"
- There are some instances where experimental research is not an option for practical or ethical reasons.
  - correlational research is used to determine if two (or more) variables are related.
- Correlations can be used to make predictions about the likelihood of two (or more) variables occurring together.
- Correlation does not imply causation.
  - Just because one factor correlates with another does not mean the first factor causes the other or that these are the only two factors involved in the relationship.
  - Remember, confounding variables and directionality
  - Only an experiment can establish cause and effect.
    - Correlations can be POWERFUL despite being able to prove cause and effect--- correlations can also be meaningless. It's a balancing act!

EXPERIMENTAL RESEARCH

- Experiments are generally the most precise studies and have the most conclusive power.
  - They are particularly effective in supporting hypotheses about cause and effect relationships.
  - However, since the conditions in an experiment are somewhat artificial, they may not apply to everyday situations.
- A well-designed experiment has features that control random variables to make sure that the effect measured is caused by the independent variable being manipulated.
  - These features include random assignment, use of a control group, and use of a single or double-blind design.
  - SAMPLING is CRUCIAL to experimentation
- An experimenter decides how to manipulate the independent variable while measuring the dependent variable.
  - In a good experiment, only the independent variable will affect the dependent variable.
  - Confounding variables (other Independent variables) ideally get ruled out OR their effects are reduce by the manipulated IV

BROADLY DEFINED TYPES OF RESEARCH

- Qualitative
- Quantitative
- Mixed-methods
- Meta-analysis
- Literature Review

METHODOLOGY

- Qualitative vs Quantitative
- Experimental; Quasi-Experimental; Non-experimental
- Relationships vs Cause & Effect

__Experiments__ are the ONLY research method capable of revealing __Cause & Effect__

METHODOLOGY

Qualitative (non-experimental)

- Case study
- Focus groups
- Interviews

Quantitative (non-experimental)

- Correlational studies
- Quasi-experimental
- Interventions
- Longitudinal versus cross-sectional

Quantitative (experimental)

- Experiments
  - Clinical trials

EXPERIMENTS . . . ONE. MORE. TIME.

- Experimental research
  - Referred to as the "Gold Standard" of science
    - Independent variable(s)
    - Dependent variable(s)
    - Confounding variables
    - Random sampling
    - Grouping (control vs experimental)

ETHICAL GUIDELINES (HUMAN RESEARCH)

- Ethical guidelines that govern the use of human subjects in research are a fairly new but important construct developed in response to unethical and harmful experiments such as the Tuskegee syphilis experiment.
- As a result of various unethical experiments carried out in the United States in the 20th century, several organizations were put in place to help monitor clinical research involving humans.
- At most colleges and universities, institutional review boards (ethics committees) are formally chosen to approve, review, and monitor bio-medical and behavioral research involving humans.
- Key ethical guidelines include the assurance of confidentiality, informed consent, and debriefing.