



AAS

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Academic Surgery

# Survey Methodology

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- No financial relationships relevant to this topic
- I am giving this talk because:
  1. I suggested that the topic is important
  2. I have made essentially every mistake possible in conducting surveys

# Agenda

- Why surveys are important
- Examples of (sometimes wildly) successful surveys
- Key methods in designing and analyzing your survey
- Setting expectations/ knowing limitations of your survey

# Why surveys are important (strengths)

- Largest scale available to assess intent and opinion
- Sophisticated methods exist to quantify opinions
- Excellent for determining ‘reality’ (no ‘telephone’ inherent in database creation, construction and sharing)
- Illustrates differences between perception and reality
- Hypothesis generating

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## Patients' Expectations about Effects of Chemotherapy for Advanced Cancer

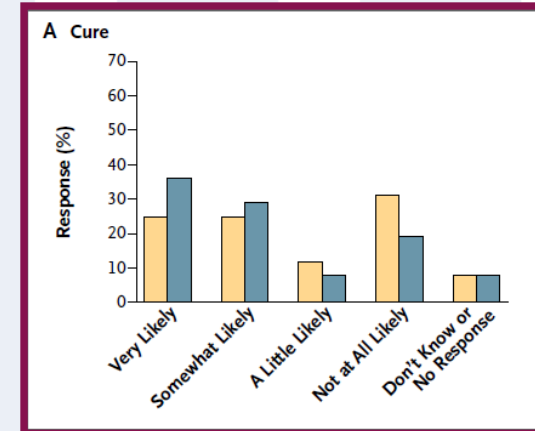
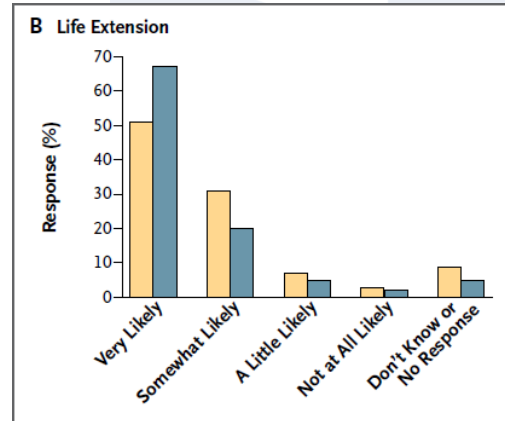
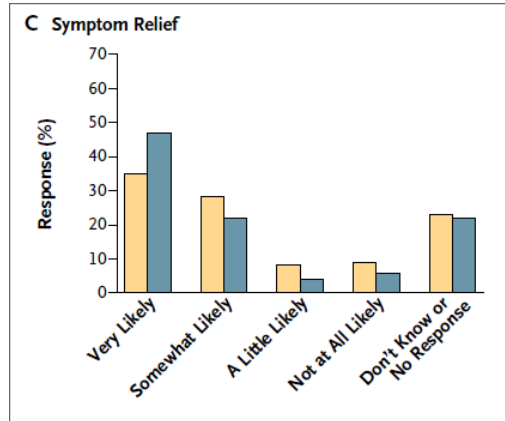
Jane C. Weeks, M.D., Paul J. Catalano, Sc.D., Angel Cronin, M.S.,  
Matthew D. Finkelman, Ph.D., Jennifer W. Mack, M.D., M.P.H.,  
Nancy L. Keating, M.D., M.P.H., and Deborah Schrag, M.D., M.P.H.

# Examples of well conducted (and impactful) surveys

**Figure 1.** Responses to Questions about the Likelihood That Chemotherapy Will Have an Effect, According to the Type of Effect and Diagnosis.

Shown are the responses of patients with advanced lung or colorectal cancer to questions regarding whether chemotherapy will cure their disease (Panel A), extend their life (Panel B), or provide relief of symptoms (Panel C).

■ Lung cancer (N=710) ■ Colorectal cancer (N=483)



# Emotional Intelligence as a Predictor of Resident Well-Being

Dana T Lin, MD, FACS, Cara A Liebert, MD, Jennifer Tran, BS, James N Lau, MD, FACS, Arghavan Salles, MD, PhD

# Examples of well conducted (and impactful) surveys

## METHODS

*Trait Emotional Intelligence Questionnaire-Short Form*

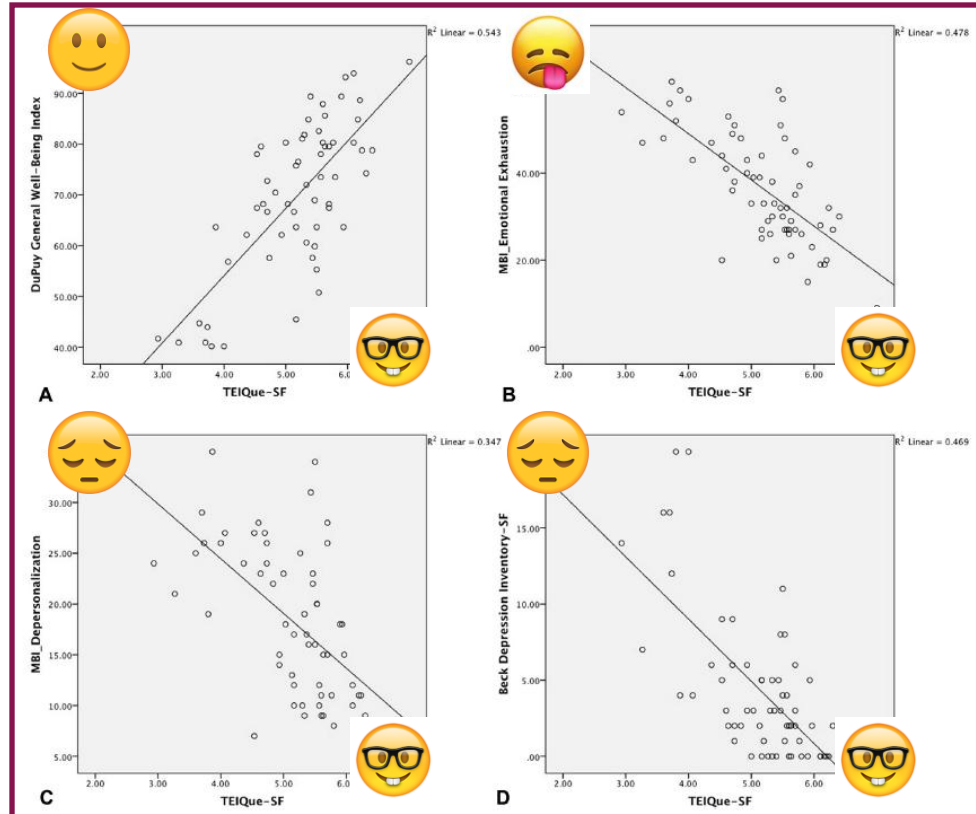
*Dupuy Psychological General Well-Being Index*

*Maslach Burnout Inventory*

*Beck Depression Inventory-Short Form*



# Examples of well conducted (and impactful) surveys



# Designing a survey

- Do a literature search
- Question development
- Determine whether temporality is important
- Open v closed ended questions
- Question wording and order
- Use pilot tests or focus groups?
- Use pretests?

# Critical methods—psychometrics:

- Psychometrics—the science of measuring mental capacities and processes (i.e. **psychological measurement**) (**GOOGLE**)
- Essentially translates non-quantitative answers into numerical reports (**DAN ABBOTT**)

# Critical methods—psychometrics:

- Examples include:
  - Measuring categorical data—e.g Rasch analysis
  - Measuring personality—Five Factor Model (‘Big 5’)
  - Attitude measurement—Likert scale (aka ‘rating scale’)

# Critical methods—validated instruments:

- Use validated instruments whenever possible
- Examples:
  - Patient-reported outcomes (PROs)
    - PROMIS measures
    - <http://www.healthmeasures.net/explore-measurement-systems/promis>
  - RAND survey tools  
([https://www.rand.org/health/surveys\\_tools.html](https://www.rand.org/health/surveys_tools.html)):
    - Health economics
    - Quality of Life (SF-12, SF-20, SF-36, etc...)

# Critical methods—novelty:

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- Have a novel idea:
  - Apply validated instruments to a new population
  - Combine validated instruments in a new setting
  - Collaborate with expert psychometrician to develop a new instrument

# Methods—delivery and tabulation


- Departmental list serves
- Program Directors
- Society constituents (e.g. SSO, AHPBA)
- EHR extraction
- Tools:
  - Survey Monkey
  - Google Surveys
  - Many, many more

# Setting expectations

- Others may not be as excited about your survey as you are
- Reviewers less likely to appreciate methodology compared to other studies
- Likely takes connections or a solicited/ commissioned idea to publish in a high-impact factor journal



# Survey limitations

- They rely on people telling the truth
- Realities live on a spectrum, not:
  - Yes/ No
  - Between 1 and 10
  - Between 
- Significance within rating scales not captured (e.g. Likert responses not necessarily linear, are arbitrary, interval not standard, etc...)

# Summary

- Surveys CAN BE tremendously rich sources of data
- Partner with an expert
- Be specific and precise in your questions and answers
- Be thoughtful in the planning, rationale, **and expectations** for your project