Whether you are a new or experienced survey researcher, this guide can help you get started on your survey project and increase your knowledge of survey research. The recommendations made in this guide are grounded in evidence-based research.

**SURVEY PLANNING**
- Research Purpose
- Construct
- Operational Definition
- Hypothesis

**SURVEY DEVELOPMENT**
- Data
- Participants
- Questions
- Response Options

**QUESTIONNAIRE BANKS**
- Q-BANK
- ICPSR
- NCCOR
- PROMIS

**SURVEY MODE SELECTION**
- Self-administered
- Interviewer-administered

**SURVEY FORMATTING**
- Visual Appearance
- Organization
✓ Learn how to choose variables based on your research purpose
✓ Learn how to collect data on abstract attitudes, feelings, beliefs, and more

**Research purpose.** What is the aim of your study? What is your primary research question? What is it that you are hoping to learn?

Who are you studying? *(participants)*
What variables are involved? *(constructs)*
Why are these variables related? *(hypothesis)*

**Construct**- abstract entity you are interested in studying; typically not directly observable or measurable. Also called ‘variables’.

Examples- age, pain, quality of life, etc.  
*You cannot directly observe a person’s age, quality of life, or level of pain.*

Instead, you may ask someone’s date of birth to learn their age; ask questions about daily activities to learn about someone’s quality of life; use the Wong-Baker faces scale to assess someone’s level of pain.

**Operational definition**- is where you specify the *exact* way you will measure each construct; specify each construct in terms of its observable characteristics, make sure specification is clear and complete.

**Hypothesis**- the proposed explanation for a phenomenon; may be the relationship between your constructs and/or between your participants and constructs.

**Research purpose**- Is pain related to children’s quality of life?

**Who**- children
**What**- pain; quality of life
**Why**- pain might relate to quality of life

**Constructs (variables)**- age, pain, quality of life

**Operational definitions**-
Age = ( present date – birthdate)

Pain: numerical rating between 0-5 based on the Wong-Baker faces pain scale.

Quality of life: score on PEDS-QL scale(s) assessing problems with physical mobility, feelings, social relationships, and trouble in school.

**Hypothesis**- Children’s level of pain will correlate with their quality of life scores.
\textbf{DATA}

What will your results say?
Variable A correlates (is related to) with variable B
Variable A predicts variable B
Variable A differs from variable B
Variable A affects variable B

This will impact how you ask questions.

What types of data can I collect in a survey?
Categorical- finite categories/response options
Continuous- numerical data measured on a scale; can be grouped into categories
Qualitative- open-ended responses

*Disciplines differ in how data are treated. For example, medicine often treats self-report data as categorical but other disciplines like psychology, sociology, and education, treat these data as interval level. Neither is right or wrong. The difference is in whether the construct is conceptualized as a continuum.

\textbf{PARTICIPANTS}

Before you develop your survey, you need to consider your participants.

\textbf{Age}. Children younger than 5 years old often cannot yet read, so a self-report paper survey would be inappropriate. However, you could interview children younger than 5 years old and use concrete objects to help them understand response scales. For example, if you are asking a young child how being in the hospital makes them feel, you may show them an Elmo doll and an Oscar the Grouch doll and ask them which doll is more like how they feel.

\textbf{Reading level}. The average reading level of adults in the U.S. is an 8th grade reading level. Surveys should be written at a 6th grade reading level to ensure that most respondents are able to read it.

\textbf{Attention span}. Younger children and older adults may find it difficult to pay attention to a long interview. Make your survey short when possible otherwise consider building in breaks and/or offering snacks.

\textbf{Cultural appropriateness}. Cultures differ in a variety of ways, such as the information they view as private, their history, the gender roles in their society, and so on. Make sure your questions are culturally appropriate.
There is extensive literature on how to write survey questions.

Use existing questions or scales. Search questionnaire banks to find questions you can use. There is no need to re-invent the wheel.

If the question you need does not exist, then consider adapting similar questions from the literature and make subtle changes to suit your needs. If you make major changes or create new questions, pilot test your questions.

Questions should:
Be short (e.g., under 25 words)
Avoid jargon or slang

Questions should NOT be:

Leading or loaded (i.e., make controversial assumptions or suggest an answer)
Example: Q- “Many doctors recommend that young children should only drink water. Do you agree? Please check one: [] Yes [] No”
A- “Yes, doctors know more about what is good for children, so I am sure they are right. Of course I agree with what is right”.

Double-barreled (asking about two things at the same time)
Example: Q- “Are you satisfied with the amount and type of communication you have with your child’s physician? Please check one: [] Yes [] No”
A- “I’m not sure, I am satisfied with the amount, but not the type.”

After the questions are formed, consider the response options.

Response options should:
Match question wording (i.e., answer the question)
Be exhaustive (i.e., no options left out)
Be mutually exclusive (i.e., no overlapping options)

Other & neutral options
Other- use only when you really need it. Analysis of open-ended responses requires extensive time and expertise.

Neutral- use only when you are interested in measuring AMBIVILANCE. The neutral option is the easiest for people to select.

Example: Rate agreement with: “I am comfortable giving medication to my child”.

If you give the neutral option, you will not know whether parents have no opinion or are on the verge of being comfortable (or uncomfortable).

Number of response options. Provide 4-7 response options. More than 7 response options adds respondent burden and may make your results more difficult to analyze. Less than 4 can limit analyses. In some cases (e.g., when working with children) you may be limited to 2-3 response options.
✓ Find validated questions or instruments
✓ Compare your results to other survey results

**Q-Bank** Center for Disease Control website provides evaluated questions from Federal surveys covering a variety of health topics for nationally representative large samples of U.S. adults and children.

**ICPSR** Interuniversity Consortium for Political and Social Research is funded by the National Science Foundation and has compiled data/questions from over 2,200 studies. Online data analysis available.

**NCCOR** National Collaborative Childhood Obesity Research measures registry is a searchable database of diet and physical activity measures relevant to children or adults. Constructs assessed include physical activity, frequency of food consumption, nutrition and the food environment, and more.

**PROMIS** The Patient Reported Outcomes Measurement Information System is funded by the National Institutes of Health. Valid and reliable assessment tools that measure patient–reported health status are available.

**Benefits**
Save time writing, editing, and testing questions by using pre-existing measures.
Compare your results with published results that used identical survey questions.
Use questions that are valid and reliable.

**Considerations**
Check relevant copyright laws (most published scales must be used with all accompanying questions).
### Survey Mode Selection

How do you decide what mode your survey should use? Read the pros and cons below.

#### Self-administered

This is when people fill out the survey on their own. The survey can be on the WEB or PENCIL & PAPER.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Trade-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower cost</td>
<td>Lower response rates</td>
</tr>
<tr>
<td>Less staff needed</td>
<td>Staff not available to help answer questions</td>
</tr>
<tr>
<td>Feels more anonymous</td>
<td>Less accountability (people feel no ‘pressure’ to respond)</td>
</tr>
</tbody>
</table>

#### Interview-administered

This is when people answer questions that an interviewer asks. The survey can be on the TELEPHONE or FACE to FACE.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Trade-off</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher response rates</td>
<td>Higher cost</td>
</tr>
<tr>
<td>Surveys can be long &amp; complex</td>
<td>Need more staff</td>
</tr>
<tr>
<td>Less missing data</td>
<td>Less anonymity</td>
</tr>
<tr>
<td>Interviewer can clarify</td>
<td>More interviewer bias and social desirability bias</td>
</tr>
</tbody>
</table>
Formatting a paper survey requires you to think about what will be easiest for the respondent to understand and navigate. See Appendix A for a sample survey.

**Purpose.** Respondents will assume that everything in your survey is purposeful. For example, if you have a picture in the survey, respondents will refer to the picture when thinking about the survey questions.

**Goal.** Design a survey that looks professional and brief.

**Font.** Use standard fonts (e.g., use Times New Roman or Calibri instead of Comic Sans or Curlz MT).

**Font size.** No smaller than 11 point or it's too hard to read.

**Style.** For emphasis choose only one: **bold**, *italics*, or _underline_. *All three are too much.*

**Margins.** At least 1 inch (if less than 1 inch, your text will appear to “waterfall” off the page).

**Color.** Use sparingly; text and background color should have high contrast with one another.

**Extras.** (e.g., pictures, borders, etc.) Use sparingly, each item you add diverts attention from your survey questions.

**Numbering.** Numbering questions is common practice; sometimes, numbering response options 1) creates additional clutter and 2) adds no new information for respondents; 3) remove in these cases.

**Instructions.** Provide your respondents with instructions, even if you think the task is simple. Instructions provide a proper introduction and increase the likelihood that respondents will understand the question similarly.

**Chunking.** Group questions with the same response options near one another. The survey will be completed quicker if respondents can complete several questions without having to read new instructions or interpret new response options.

**Visual flow.** Your survey should flow from one item to the next in an obvious manner. When you ask a respondent to skip a question (often based on a previous answer) you may use an arrow and instruction to make the skip clear and obvious. Example: “1. What is your gender?”

[] Male
[] Female  \(\rightarrow\) GO TO question 3
Appendix A: Sample Survey

Welcome to the survey on patient satisfaction.
Please check the boxes below that best reflect how you feel.

<table>
<thead>
<tr>
<th>Question</th>
<th>Very satisfied</th>
<th>Somewhat satisfied</th>
<th>Somewhat dissatisfied</th>
<th>Very dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall, how satisfied are you with the care that you received from your doctor?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>2. Overall, how satisfied are you with the care that you received during your last visit?</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>3. Was your last visit more than one week ago?</td>
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<tr>
<td>□ Yes</td>
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<tr>
<td>□ No → GO TO Question 5</td>
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<tr>
<td>4. Was your last visit more than one month ago?</td>
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<td>□ Yes</td>
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<tr>
<td>□ No</td>
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<tr>
<td>5. What is your gender?</td>
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<tr>
<td>□ Male</td>
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<tr>
<td>□ Female</td>
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<tr>
<td>□ Prefer not to say</td>
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Thank you for your time.