

Single-Subject Design
Considerations in Planning the Research and Considerations in Writing

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I. Research/Clinical Questions--Force yourself to think carefully about the question, or questions you wish to ask and answer, or the hypotheses you wish to test. Remember, the question really will be about the functional relationship between your manipulation and outcomes/change.

A. What do you wish to learn?

For example:

- Does treatment change behavior X?
- What behaviors does the treatment impact? How? In what contexts?
- Do particular kinds of clients respond to this treatment?
- How much treatment is necessary to bring about change?
- Can treatment be more robust?
- Which treatment components are responsible for change? For the most robust change?
- Is significant, important change occurring?

B. What do you wish to prove?

For example:

- A particular aspect of the treatment was most important.
- A particular time in treatment was necessary.
- Behavior X deteriorates without treatment.

II. Subjects/clients/participants--Who receives the treatment? Who is expected to change?

A. Consider what are the most important client characteristics related to your treatment?

B. Consider how you will select the subjects. What criteria will you use to include individuals and exclude them? What criteria are essential?

C. Sometimes you will want your subjects to be very similar; this will be the case if you are trying to document a general trend in behavior change. Other times you will wish to include a different type of subject, to document that a particular characteristic of a person alters the outcome.

III. Independent Variables--Be able to clearly describe your treatment. Make sure you include the following:

A. The behavioral target/focus of treatment

B. A description of the treatment, including how it is implemented and by whom, where it is implemented, length of each session, duration of treatment phase, instructions, etc.

C. Criteria for starting and stopping treatment. Consider whether treatment will be started and stopped based on time (i.e., number of sessions/or weeks) or behavioral criteria (i.e., a certain level of performance by the client) (this will be dependent upon your question).

IV. Dependent Measures--What and How to measure change. Consider multiple measures. How can you best capture expected change, unexpected change?

A. Define the dependent measures. Make sure you operationally define the behaviors you will be observing and measuring. Rethink your research/clinical question(s) and plan your dependent measures to insure answering them—consider target behaviors, generalization behaviors, and control behaviors.

B. Plan the way in which your data will be collected. How will you insure sampling the desired behaviors? Who will be involved? What settings should be included? How structured should the sampling context be? How often will you need to sample behaviors? (How realistic is the plan?)

V. Reliability – consider how much data you need to present to convince your reader that your data are indeed reliable-believable. Don't forget to plan and track your training of reliability coders/observers.

A. Procedural reliability for both independent and dependent variables

B. Measurement reliability for data you will be reporting

VI. Design/Experimental Control--How will you set up the “experiment”? Consider how you will introduce and withdraw treatment within and across subjects/clients to demonstrate that the behavioral change is a result of these manipulations. Consider how you will use replication (within and across subjects/clients, within and across experiments) to increase the validity of the findings.

A. Describe the single-subject design elements that will be used to answer your research/clinical questions. Don't worry about a specific name for a design, but rather describe the components: ABA, where you describe what you are referring to by each phase. You can use the terms “with series, between series, and combined series”, as you set the stage, but ultimately, describing the elements/phases is what you need to do.

Organization Ideas for the Methods: A Conventional Approach followed by Variations

METHOD

Subjects/Participants

General Procedures (this generally sets the stage for sections to follow)

Paragraph: Types of sessions---treatment and measurement; how often they occur, who is the clinician/examiner. This is very general to give the reader a sense of what is to come; perhaps, like an overview

Treatment (Independent Variables)

Paragraph: Specific procedures (clinician/experimenter, client/participant)
(Training, if pertinent, goes here)

Paragraph: Setting and Materials
(Paragraph: Reliability)

Measures (Dependent Variables) (These are typically probe, but remember, you might be using treatment data. They would be described here).

Paragraph: Definition of Dependent Measures

Paragraph: Data Collection Procedures (setting, materials)

This of course gets tricky with multiple measures. Make sure you indicate the different behaviors and measures, how and when they will be collected)

Paragraph: Data Reduction (coding taxonomy – actual data, and measures)
(sometimes it is helpful at the end of this section to have a table indicating the research question, data that are collected, how/where/when data are collected, and then what measures you will be ultimately using (e.g., % correct, rate/minute, proportion of opportunities that yield a particular behavior, etc.

(Paragraph: Reliability)

Design

Paragraph: State design and explain phases, including a description of baseline and criteria for phase changes. I have found that it is easier to put the design here, rather than at the beginning, because very often the design is tied to the measurement. This is also where I usually put the criteria for each phase length: baseline, treatment, withdrawal. Don't forget: you can't just say "stable baseline" – what constitutes stable? "upward trend" – what constitutes upward and trend – over how many sessions? The design section should also include criteria for introducing treatments in a multiple baseline structure. However, having said all of this, if your criteria for withdrawing treatment or introducing another treatment are based on treatment performance, then this information might also be included in the above section on treatment. However, if these decisions are based on client/participant performance on the probe, then it is best described here – only here.

Data Analysis

Paragraph: Data Analysis- How will you interpret the data (within series, between series). State specifically if you are using visual inspection and what you are looking for. And if you are using some type of descriptive statistics, put that here, and what you hope these statistics will add to your visual inspection.

SOME VARIATIONS

Your goal is to have the Methods make sense! This is quite a challenge because of the way the sections overlap and depend upon each other. The format above may or may not work. Here are some variations to consider. My advice: look through journals to see the various ways authors have presented their information.

Reliability

Sometimes it is better to have a separate Reliability section (that's why I have reliability above in parentheses). I actually prefer a separate section. This will have at least two major paragraphs—procedural and measurement reliability. Make sure you include training here. What did you do in your training, and how did you decide the reliability coder was ready to go. This is an alternative to including reliability as presented above. A separate Reliability Section will typically follow Measures or proceed Data Analysis. See what makes sense to you. I also prefer to put the results of the reliability testing right there in the reliability section. I don't like it in the Results—too much required of my memory.

Data Reduction

Data reduction is the step between data collection and data analysis. It often has a separate section, or sometimes it is included under Data Analysis, typically as the first paragraph of that section. I prefer to not put it with Data Analysis. It feels better to me under Measures.

Design

Sometimes the Design Section works best when it comes right after Subjects. It leads off the Procedures. The tricky thing about the Design Section is making sure all of the terms that are used in that section are clear to the reader. This is so tricky that this Section often comes later in the Methods. I found in my alternating treatments design work that it worked best to have the design mentioned early—Design and General Procedures. But, when all is said and done, what makes sense to you!