

**Clinical trials** are studies that provide intervention to human subjects and attempt to determine whether the intervention is safe and effective. Investigate the clinical trial, “A Behavioral Intervention to Improve Hypertension Control in Veterans,” which can be found online at

<https://clinicaltrials.gov/ct2/show/study/NCT00286754>

**Question #1** For this study, what is the real-world question of interest?

Which method of intervention will help the best to reduce blood pressure.

**Question #2** What is the population of interest in this study? What was the sample being studied (what are the experimental units, and how many are there)?

The population of interest is 533 veterans and the sample being studied are the three groups. These three groups were equally randomized and categorized based on the intervention method use for the respective group. The group names included SMI, HEI and UC.

**Question #3** What was the factor (experimental/explanatory) variable in this study? What were the primary outcome (response) variables? Classify each variable as categorical (qualitative) or numerical (quantitative).

The experimental variable was the type of treatment and the explanatory variable was the group of randomly selected veterans. Primary outcome variables included blood pressure, adherence (to diet, exercise and medications), quality of life, acceptability, cost/cost effectiveness.

Categorical: adherence, quality of life, cost effectiveness

Quantitative: blood pressure, cost, acceptability

**Question #4** What was the control group in this study? What was/were the treatment group(s)?

The control group on this study is the UC (usual care) group as there is no new change in the veteran's way of life. The treatment groups were SMI and HEI because they did introduce something new.

**Question #5** Did the experimenters avoid confounding due to the placebo effect? If so, how? If not, why not?

The experimenters managed to avoid confounding variables because they randomly selected their population and there is blinding on both the veteran and their respective social worker. These measures will mitigate bias and inaccurate data.

**Question #6** The experimenters included a number of “exclusion criteria.” People meeting one of these criteria would not be included in the study. For one of those criteria, explain why including people meeting that criterion might bias the results.

One of the criterion that would be introduce bias would be “Unable to follow the study protocol”. This is hard to ensure because people can/will lie if they know they’re in a study. That is called the Hawthorne Effect.

“A/B testing” is fancy name for randomized controlled experiments that manipulate only a single factor. Typically, most A/B testing is now done via the Internet, including websites, apps, e-mail marketing, etc. Open the paper “Controlled Experiments on the Web: Survey and Practical Guide,” which can be found at <http://www.exp-platform.com/Documents/controlledExperimentDMKD.pdf> and read sections 2 and 3.

**Question #7** Why is an A/B test called an A/B test?

There are two different versions of an end product but one will be well received and the other will suffer.

**Question #8** What is an A/A test and why would researchers use it?

You split your sample group in two but expose them to the same experience. Researchers would use it to test the experimentation system and assess its variability for power calculations.

**Question #9** For one of the examples discussed in section 2 (pages 143-148 of the document), explain what the treatment and control groups are.

For the Doctor FootCare UI example, people who had the coupon text input field had more of an adverse reaction to completing their purchase. This was because they felt there might be a better deal out there and they have not found it yet. When removed in later iterations, the sales went up by 6.5%.

**Question #10** For the example you chose in **Question #9**, what was the Overall Evaluation Criterion (OEC)? Is the Overall Evaluation Criterion based on an experimental (explanatory) variable or an outcome (response)?

The OEC in this example was the initial decrease in sales when the coupon text field was present and the overall increase when it was subsequently removed.