First Name:_____ Last Name:_____

Student ID #: _____

PSC 041 Research Methods in Psychology WQ 2023

Unit 4 Exam Version C

Research Summary

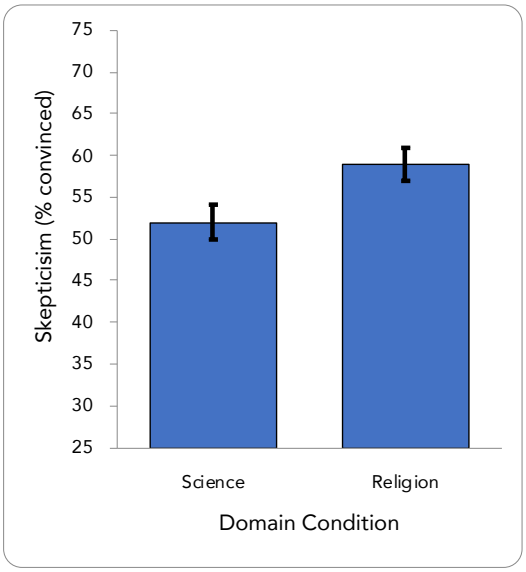
Please answer the following questions in the space provided. Only write on the lines.

Adapted from: Lobato, E. J. C., Tabatabaelan, S., Fleming, M., Sulzmann, S., & Holbrook, C. (2019). Predictors of evidentiary standards. *Social Psychological and Personality Science, 11, 546-551.*

How much evidence do people need before believing that a medication works? Are they easily persuaded or are they skeptical?

Imagine that you hear that a friend took medication and also recovered from an illness. Would you immediately conclude that the medication caused the recovery or would you need to hear about other people having the same experience? How many other people would you need to hear about before you felt confident concluding that the medication caused the recovery? If you were very confident in the claim, you might only need one or two additional pieces of evidence. If you were very skeptical about the claim, it would take a lot of additional cases before you believed that the medicine worked.

What if the cure is claimed to be due to religious beliefs rather than medication? Compared to a medical cure, will people be more or less skeptical about the effect of prayer on illness? In this study, they found the surprising result that people seemed more easily convinced of a religious cure than of a scientific cure!
In one day, researchers recruited 796 participants on the internet. Participants responded to a pop-up advert on social media sites. In exchange for participating, they were entered in a raffle for gift cards. Once someone agreed to participate, they clicked a link that opened a survey on the website Survey Monkey. First, each participant filled out a demographic survey. Participants came from diverse locations and spanned across age groups. Then they read a "press release" about a cure for a disease and were asked how much more evidence they would need to believe the cure was real.



Participants were randomly assigned to read one of two "press releases." In the "science domain" condition, participants read about a group of scientists testing a medicine to treat an illness. In the "religion domain" condition, participants read about a group of people praying to God to treat an illness. The press releases were otherwise identical and indicated that the technique had successfully cured one person. Then, participants were asked to rate their skepticism by indicating if they were convinced that the treatment was responsible for curing the illness or not. Results showed that fewer participants were convinced about the scientific cure (52.02%) compared to the religious cure (59.64%), $X^2(N=796) = 17.43$, $p = .003$.

Predictor Variable

Thinking about the Predictor / Independent Variable: Domain Condition

Partial operational definition: Participants were shown an explanation either indicating a scientific explanation or a religious explanation.

2 pts 1. The Predictor / Independent Variable is (fill in the box)

☐ **Categorical** ☐ **Continuous**

2 pts 2. How was the Predictor / Independent Variable measured? (fill in the box)

☐ **Observation** ☐ **Physiological**

☐ **Self-Report** ☐ **It was manipulated**

5 pts 3. Is this a causal or associative claim? (fill in the box)

☐ **Causal** ☐ **Associative**

5 pts 4. This variable is (fill in the box)

☐ **between groups** ☐ **within group**

Use this information only for the next two questions:
Another researcher wants to extend this finding using different approach to address a similar research question. This researcher randomly assigns participants to listen to either a religious sermon or a scientific lecture.

2 pts 5. How was this new Predictor / Independent Variable measured? (fill in the box)

☐ **Observation** ☐ **Physiological**

☐ **Self-Report** ☐ **It was manipulated**

10 pts 6. How will the new predictor variable change the **claim type** from the original predictor? Explain your reasoning in a few sentences.

Outcome Variable

Thinking about the outcome / dependent variable: Skepticism

10 pts 7. How did the researchers **operationally define** the outcome / dependent variable? Describe it using your own words. Be sure to include the levels or values and indicate how the codes will be interpreted.

2 pts 8. The outcome / dependent variable is (fill in the box)

☐ **Categorical** ☐ **Continuous**

2 pts 9. How was the outcome / dependent variable measured? (fill in the box)

☐ **Observation** ☐ **Physiological**

☐ **Self-Report** ☐ **It was manipulated**

10 pts 10. Evaluate the **construct validity** of the outcome / dependent variable.
ProTips: Give an overall evaluation. Think about the face validity, the procedure, and the method-match to inform your decision. Use specific vocabulary. Be sure to only discuss this one variable.

Evaluate Internal Validity and Research Design

10 pts 11. For this research summary, there ***is not a maturation effect*** because…

10 pts 12. For this research summary, "religious beliefs" **is not a confound** because…

5 pts 13. How could you change the study to introduce this confound?

Summarize the findings

5 pts 14. How did the researchers summarize the findings? (fill in the box)

- ☐ **compare group means**
- ☐ **compare group frequency**
- ☐ **indicate strength and direction of the overall relationship**

5 pts 15. The error bars _____ overlap. Therefore, there likely ___ a real relationship between the variables? (fill in the box)

- ☐ **do; is**
- ☐ **do; is not**
- ☐ **do not; is**
- ☐ **do not; is not**

5 pts 16. The *p* value is _____ . Therefore, there ___ a statistically significant relationship between the variables. (fill in the box)

- ☐ **greater than 0.05; is**
- ☐ **greater than 0.05; is not**
- ☐ **less than 0.05; is**
- ☐ **less than 0.05; is not**
- ☐ **greater than 0.5; is**
- ☐ **greater than 0.5; is not**
- ☐ **less than 0.5; is**
- ☐ **less than 0.5; is not**

Sampling

5 pts 17. This is a _____ sample of adults in the USA.

- ☐ **probability**
- ☐ **non-probability**

5 pts 18. What kind of sampling technique did the researchers use?

- ☐ **Cluster**
- ☐ **Convenience**
- ☐ **Snowball**
- ☐ **Quota**
- ☐ **Systematic**
- ☐ **Stratified**
- ☐ **Simple Random**
- ☐ **Judgmental**

10 pts 19. In **general** (not specific to this research summary), define **random sampling** and **random assignment**. Describe what they have in common (e.g., random) and what is different (e.g., which validity they contribute to).

Evaluate External Validity

10 pts 20. For this research, evaluate one aspect of **external validity**. You may include evidence for either a strength or a weakness. (e.g., is this authentic? does this generalize to other situations? does this generalize to other individuals?)

10 pts 21. Another researcher attempted to replicate this study. They carefully replicated every step of the procedure, however, they only recruited participants who were enrolled at a medical school. They did not find the same results; participants in the scientific domain condition were just as easily convinced as those in the religious domain condition.

Can the researchers defend their original findings given this failure to replicate? What logic or reasoning would they use to explain these different results?
ProTip: Clearly state your conclusion (the new findings can be explained in a way that coexists with the original findings or one of the findings is likely invalid) and explain your reasoning in a few sentences. Focus on the difference between internal validity (failure to replicate) and external validity (failure to generalize).

Multiple Choice. Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Do not put stray marks in the other boxes. If you need to change your answer and are unable to erase fully, clearly indicate your final choice (e.g., draw an arrow or circle it). 2 points each.

22. Five principles of ethical research that are followed by the APA are respect for persons, beneficence, responsibility, integrity and justice. Which of the following is included in the definition of beneficence?
    - ☐ Participating in research is voluntary and participants can quit at any time
    - ☐ Participants have an opportunity to understand the research and make an informed decision about participating
    - ☐ Individual performance in a research study is kept confidential
    - ☐ Any risk from the research to participants should be minimized
    - ☐ The benefits of the research should apply broadly and not only to a particular group
    - ☐ Psychologists build trust and conduct their business professionally
    - ☐ Research is conducted accurately and reported honestly

23. To examine interactions in a public park, a researcher observes people as they spend time at parks in a local town. Should this researcher obtain informed consent?
    - ☐ Yes
    - ☐ No

24. A researcher is using deception to ensure that participants respond naturally to a stimuli. They are concerned that a participant may share critical information about a study's purpose learned during a debriefing with other potential participants, and that this disclosure could bias their responding. To avoid this potential bias, could the researcher decide not to include a debriefing?
    - ☐ Yes
    - ☐ No

25. Spending on Social Security, Medicare, and Medicaid make up the largest portion of the U.S. federal budget.
    This statement is ____ and therefore ____ belong in a scientific report
    - ☐ opinion, could
    - ☐ opinion, could not
    - ☐ factual, could
    - ☐ factual, could not

26. Which of the following behaviors is/are (an) example(s) of plagiarism?
    - ☐ Including a sentence that is copied without using quotation marks and a reference citation
    - ☐ Representing another's work as your own
    - ☐ Including a sentence that is copied and substituting a few words with their synonyms without citing the source
    - ☐ All of these

27. Population: Enrolled undergraduate students at UC Davis.
Sample: Obtain a list of all enrolled undergraduate students at UC Davis. Print each name on a piece of paper. Put all the papers into a very large box. Shake the box and select 100 names.
This sampling technique is best described as:
- ☐ Cluster
- ☐ Convenience
- ☐ Snowball
- ☐ Quota
- ☐ Systematic
- ☐ Stratified Random
- ☐ Simple Random
- ☐ Judgmental

28. In which section of a research article would a reader find a description of what was done in the past and why the present study is being conducted?
- ☐ Introduction
- ☐ Method
- ☐ Results
- ☐ Discussion

29. Which one of the following statements would be appropriate for the results section of a research report?
- ☐ Past research shows men generally talk more than women
- ☐ For men, the average time talking was 10.7 minutes while for women the average was 7.4 minutes
- ☐ While the three men and three women discussed the issue, the experimenter measured time spent talking by starting and stopping stopwatches
- ☐ Contrary to popular belief, in groups of mixed gender, men talk more than women, interrupt more than women, and are more likely to direct discussion topics

30. Which of the following is true of probability sampling but not for non-probability sampling?
- ☐ Every member of population has same likelihood of being chosen for sample
- ☐ Weaker external validity
- ☐ The sample may not be similar to population

31. Only value claims require strong ___ validity but ____ claims require strong construct validity
- ☐ Internal, all
- ☐ Internal, value
- ☐ Internal, associative
- ☐ Internal, causal
- ☐ External, all
- ☐ External, value
- ☐ External, associative
- ☐ External, causal
- ☐ Construct, all
- ☐ Construct, value
- ☐ Construct, associative
- ☐ Construct, causal