First Name:_____ Last Name:_____

Student ID #: _____

PSC 041 Research Methods in Psychology WQ 2023

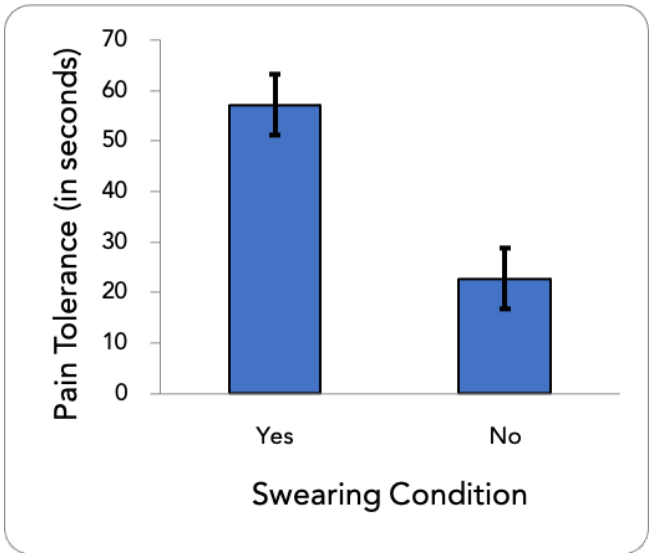
Unit 4 Exam Version B

Research Summary

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

Adapted from: Stephens, R., Atkins, J., & Kingston, A. (2009). Swearing as a response to pain. *Neuroreport, 20*, 1056-60.

Oh $*%# that hurts! Do you swear when you stub your toe? Turns out this bad language could be good for you! Psychologists have found empirical evidence that swearing may increase pain tolerance. Sixty-seven undergraduate participants came into the laboratory and were asked to immerse their hand into a bucket of icy water. Researchers explained the whole task and told the participants they could pull their hand out of the water at any time. Icy water is painful but won't cause any actual damage in a few minutes. The researchers randomly assigned half of the participants to read a list of swear words while their hand was in the water and instructed the other half to recite the alphabet from memory. They measured how many seconds each participant kept his, her, or their hand in the icy water. Researchers compared the results from people who cursed to people who did not curse. The participants who recited curse words kept their hand in the icy water longer (M = 57.2, SD = 1.31) than those who recited the alphabet (M = 22.8, SD = 1.23). Researchers concluded that reading curse words significantly increased pain tolerance, $t(66) = 2.218$, $p = 0.03$.



Predictor Variable

Thinking about the Predictor / Independent Variable: Swearing Condition

Partial operational definition: Participants were instructed to swear or to recite the alphabet

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 the same research question. This researcher instructs all of the participants to say whatever they want while their hand is in the water. The research codes whether the participants said swear words or not.

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: Pain tolerance

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.*

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, "reading" **is a confound** because…

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

Summarize the findings

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

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

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

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

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

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

Sampling

5 pts 17. This is a _____ sample of human beings.

- ☐ **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 in a different culture. They carefully replicated every step of the procedure. They did not find the same results. Participants in this new study demonstrated the same amount of pain tolerance regardless of what they were asked to say. In this different culture, tolerating pain is highly socially valued.

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?
    - ☐ Individual performance in a research study is kept confidential
    - ☐ Risk from the research to participants should be minimized
    - ☐ Psychologists build trust and conduct their business professionally
    - ☐ Research is conducted accurately and reported honestly
    - ☐ The benefits of the research should apply broadly and not only to a particular group
    - ☐ 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

23. To examine engagement during meals, a researcher observes groups dining at a restaurant. Should this researcher obtain informed consent?
    - ☐ Yes
    - ☐ No

24. A researcher is 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, it ___ be ethical for the researcher decide not to include a debriefing.
    - ☐ would
    - ☐ would not

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
    - ☐ factual, could
    - ☐ factual, could not
    - ☐ opinion, could
    - ☐ opinion, 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: Stand outside the MU at lunchtime. Approach students and ask them to participate in the study.
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 the descriptive statistics that describe the findings of the study?
- ☐ Introduction
- ☐ Method
- ☐ Results
- ☐ Discussion

29. Which one of the following statements would be appropriate for the methods 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 non-probability sampling but not for probability sampling?
- ☐ Every member of population has same likelihood of being chosen for sample
- ☐ Stronger external validity
- ☐ The sample may not be similar to population

31. All claims must have strong ___ but only ____ claims require strong external validity
- ☐ Internal, value
- ☐ Internal, associative
- ☐ Internal, causal
- ☐ External, value
- ☐ External, associative
- ☐ External, causal
- ☐ Construct, value
- ☐ Construct, associative
- ☐ Construct, causal