First Name:_____ Last Name:_____

Student ID #: _____

PSC 041 Research Methods in Psychology SS1 2022

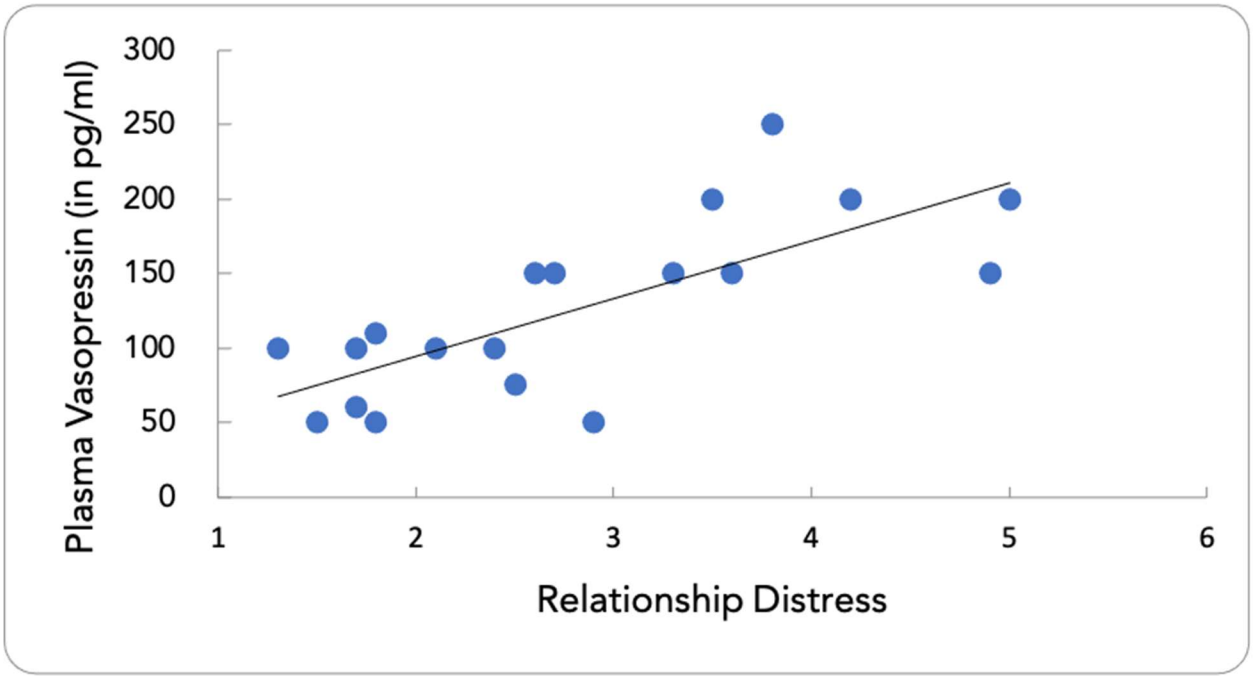
Unit 2 Exam Version A

Research Summary

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

Adapted From: Taylor, S. E., Saphire-Bernstein, S., & Seeman, T. E. (2010). Are plasma oxytocin in women and plasma vasopressin in men biomarkers of distressed pair-bond relationships?. Psychological Science, 21(1), 3-7.

Hormones in our blood may be physiological markers of distress in romantic relationships. If we experience a sudden shock, we can feel the immediate effect of these hormones. But, what about longer lasting distress, like from chronically worrying about a romantic relationship? Thirty-two young men who reported being in committed relationships (mean age = 21.60 years, range = 18–34) participated in a study that examined the association between relationship distress and vasopressin (a hormone). Relationship distress was measured by answers to a questionnaire. Specifically, participants rated their romantic partner on the items: "How often do they make too many demands on you?", "How often do they criticize you?" "How often do they let you down when you are counting on them?" and "How often do they really show that they care about you?" (reverse-coded). Responses to each item were on 6-point scales from Never to Always. Responses were averaged to create an index of Relationship Distress with a 1 indicating the lowest possible distress and a 6 indicating the highest possible distress. Within a week of completing this questionnaire, participants had blood drawn at the University of California, Los Angeles, Clinical Research Center. An assay detects the concentration of vasopressin in the blood in picograms (pg) per milliliter (ml). Results demonstrated that vasopressin concentration was positively associated with reports of relationship distress, $r = .54$, $p = .01$.



Predictor Variable

Considering the predictor / independent variable, Relationship Distress

10 pts 1. How did the researchers operationally define the predictor / independent variable? Describe it using your own words. *Be sure to include the levels or values and indicate how the codes will be interpreted.*

5 pts 2. The predictor / independent variable is (fill in the box)

- ☐ **Categorical**
- ☐ **Continuous**

5 pts 3. How was the predictor / independent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

5 pts 4. Is this a causal or associative claim? (fill in the box)

- ☐ **Causal**
- ☐ **Associative**

20 pts 5. Evaluate the **construct validity** of the predictor / independent 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.

Outcome Variable

Considering the outcome / dependent variable, Vasopressin Concentration

10 pts 6. 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.*

5 pts 7. The outcome / dependent variable is (fill in the box)

- ☐ **Categorical**
- ☐ **Continuous**

5 pts 8. How was the outcome / dependent variable measured? (fill in the box)

- ☐ **Observation**
- ☐ **Self-Report**
- ☐ **Physiological**
- ☐ **It was manipulated** (under the experimenter's control)

20 pts 9. 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.

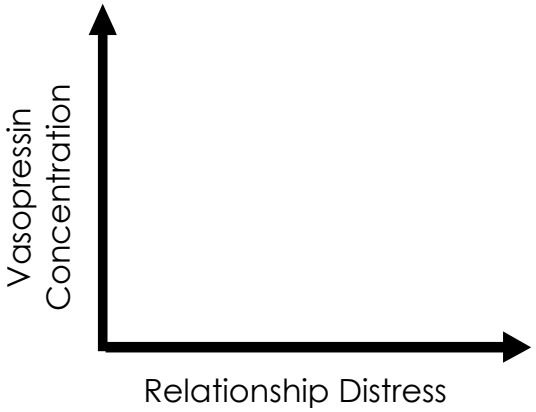
Reliability and Validity

10 pts | 10. Is it possible that there was a Hawthorne effect in this research? Why or why not?

10 pts | 11. How could the researchers establish reliability of the outcome variable?
ProTip: You can describe test-retest, alternate forms, split-half, or inter-rater.

Hypotheses
ProTip: include specific variable names and be sure to use a correct verb (causal or associative)

5 pts | 12. Sketch the null hypothesis:



5 pts | *13*. Write a specific directional research hypothesis for this research.

Summarize the findings

5 pts 14. What sort of relationship did the research reveal?

- ☐ **No relationship**
- ☐ **Strong negative linear relationship**
- ☐ **Moderate negative linear relationship**
- ☐ **Weak negative linear relationship**
- ☐ **Strong positive linear relationship**
- ☐ **Moderate positive linear relationship**
- ☐ **Weak positive linear relationship**

5 pts 15. The *p* value is _____ . Therefore, there ___ a statistically significant relationship between the variables. (fill in the box)

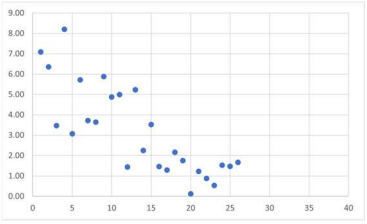
- ☐ **greater than 0.5; is**
- ☐ **greater than 0.5; is not**
- ☐ **less than 0.5; is**
- ☐ **less than 0.5; is not**
- ☐ **greater than 0.05; is**
- ☐ **greater than 0.05; is not**
- ☐ **less than 0.05; is**
- ☐ **less than 0.05; is not**

5 pts 16. Does this interpretation follow from this study: "increased Vasopressin production caused increased relationship distress" Why or why not?

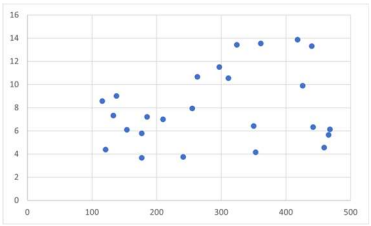
Multiple choice/ fill in the blank / short answer.
Select the single best answer. Indicate your choice by filling in the box to the left of your selection. Write short answers in the space provided.
2 points each.

Question 1-3 identify the correlation coefficient for the graph:

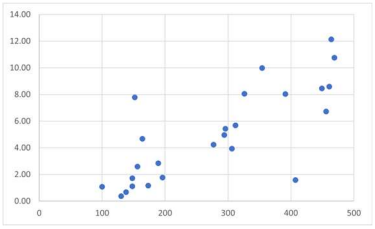
1. ☐ r = .53.
   ☐ r = -.30
   ☐ r = -.70



2. ☐ r = .13
   ☐ r = -.70
   ☐ r = -.57



3. ☐ r = .90
   ☐ r = -.10
   ☐ r = -.87

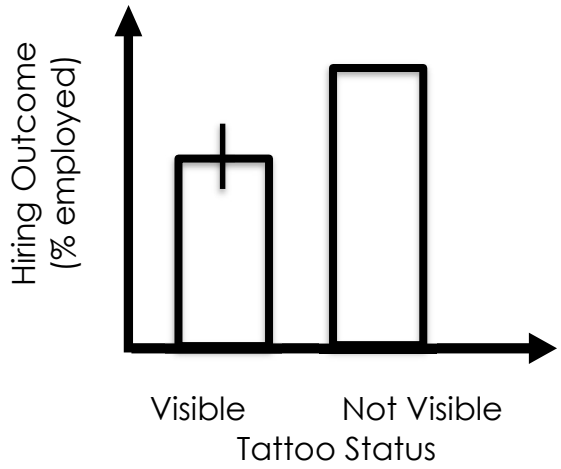


4. Which of the following values indicates a strong correlation?
   - ☐ +/- 1.00 to 1.50
   - ☐ +/- .50 to 1.00
   - ☐ +/- .30 to .50
   - ☐ +/- .10 to .30
   - ☐ 0

5. Which of the following statements is an example of circular reasoning:
   - ☐ "Time was measured accurately because the two conditions took different lengths of time"
   - ☐ "Time was measured accurately because we used a stop watch"

6. Which of the following would be the best way to measure the physiological state of tired?
   - ☐ Observing people for signs of sleepiness
   - ☐ Newspaper articles about increased exhaustion in the general population
   - ☐ Self-reports by individuals about irritable they feel
   - ☐ Measures of brain patterns, muscle tightness, and hormone as correlates of exhaustion

7. Draw the remaining error bar on this graph such that the graph supports this claim: Having visible tattoos is related to getting a job



8. The finding that "shorter people have more confidence than taller people" illustrates ____ relationship.
   - ☐ a positive linear
   - ☐ a negative linear
   - ☐ a curvilinear
   - ☐ no relationship

9. You are developing a new test of Attention Span for goldfish.
   You give the currently accepted test to a goldfish, and it scores 15 seconds (average).
   You then give your new test to the same goldfish three times.
   Here are the results:
   Trial one:17 seconds
   Trial two: 13 seconds
   Trial three: 15 seconds

   Your new Working Memory test is:
   - ☐ Neither valid nor reliable
   - ☐ Both valid and reliable
   - ☐ Valid but not reliable
   - ☐ Reliable but not valid

10. Which of the following is a type of probability sampling?
    - ☐ Cluster sampling
    - ☐ Convenience sampling
    - ☐ Snowball sampling
    - ☐ Quota sampling