First Name:_____ Last Name:_____

Student ID #: _____

PSC 041 Research Methods in Psychology SS1 2022

Unit 4 B Exam

Research Summary

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

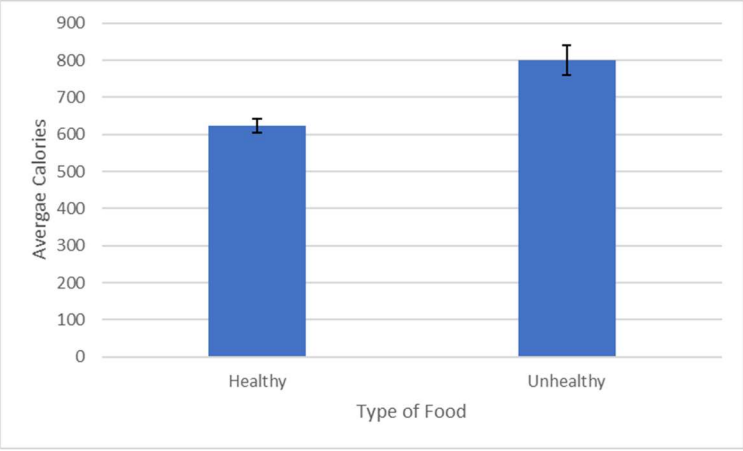
Adapted from: DiSantis, K. I., Birch, L. L., Davey, A., Serrano, E. L., Zhang, J., Bruton, Y., & Fisher, J. O. (2013). [Nutrition] and children's appetite: effects of [unhealthy foods] on self-served portions and intake. *Pediatrics, 131*(5), 1451-1458.

If we can't finish a meal, we might think that our eyes are bigger than our stomach. What if our excitement is bigger than our stomachs? If we have more excitement about unhealthy foods, do we take more food? A study looked at this question in two elementary school cafeterias.

Both cafeterias were in public schools that had a buffet where students served themselves as much food as they wanted. On some days, the researchers put out only food recommended by a child nutritionist (Healthy) and on other days the researchers put out foods that students reported enjoying and were not nutritional (Unhealthy). For School 1 researchers randomized food type on each day by writing ten school day dates down on pieces of paper and drawing them out of a hat. The first five dates randomly drawn from the hat were the days that healthy food was offered; unhealthy food was offered on the remaining five days. Each day, all students experienced the same food condition. School 2 ran on the same days and in the exact same way as School 1 but had the opposite food type condition as School 1 each day. The researchers gathered data over two weeks (ten school days). School 2 had a snow day during the second week of the study and only had 9 days of measurement.

The participants were 80 children from 3rd through 6th grade, who ate in the cafeteria over all ten days of the study. The schools were randomly drawn from a list of districts matched on typical income and typical diversity. 50 of the participants came from School 1 and 30 came from School 2. The total calories taken from the buffet by each child was estimated based on photographs taken of the meals as the child left the buffet. The camera was hidden in the 'sneeze guard' cover at the end of the buffet. The children were not aware that their meals were photographed. From the photographs, nutritionists estimated the amount of each portion and calculated calories according to the recipes used.

On average, children served themselves more calories when presented with unhealthy food than healthy food, $t(41) = 7.72$, $p = .001$. On days when unhealthy food was available, the children took food that had more calories (M = 712, SD = 29.4) than when there was healthy food(M = 593, SD = 29.4). This provides new evidence that children's self-served portion sizes are influenced by the type of food available.



Predictor Variable

Thinking about the Predictor / Independent Variable: Type of Food

Partial operational definition: Each day had either healthy food (as recommended by a pediatric nutritionist) or popular food with less nutritional value (Unhealthy) available.

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

5pts 3. This claim type is (fill in the box)

- ☐ **Causal**
- ☐ **Associative**

5 pts 4. This design type 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 replicates this in workplace cafeteria at a tech startup facility on one day. In this cafeteria, both healthy and unhealthy food is available. Researcher now have nutritionists rank the overall healthiness of the food on each participant's plate. All other aspects are the same (eg. amount of time allotted to eat, time of day, etc.).

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

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

10 pts 6. How will the new study (Type of Foods vs appetite in adults) change the **design type** from the original predictor (Type of Food vs appetite in children)? Explain your reasoning in a few sentences.

Outcome Variable (Original Prompt)

Thinking about the Outcome / Dependent Variable: Appetite

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

10pts 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 the original research summary, *there* ***may be a testing effect*** *because…*

10 pts 12. For the original research summary, "food popularity" **is a confound** because…

Summarize the findings

5pts 13. How did the researchers summarize the findings? (fill in the box)

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

5 pts 14. 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 15. 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**

Ethical Considerations

10 pts 16. To obtain IRB approval researchers needed to provide justifications for……
(*In a few sentences explain why*)

Sampling

10 pts 17. This is a ___ sample of children from typical backgrounds. How do you know?

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

Evaluate External Validity

10 pts 18. 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?)

10pts 19. Another researcher attempted to replicate this study in an elderly care home. They carefully replicated every step of the procedure. They did not find the same results.

Does this failure to replicate indicate that the findings of the original study are invalid?

ProTip: Clearly state your conclusion (the new findings do or do not invalidate the original findings) and explain your reasoning in a few sentences. Focus on the difference between internal validity and external validity.

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). 2.5 points each.

20. Self-selection into a study is a threat to:
- ☐ Statistical Validity
- ☐ Construct Validity
- ☐ External Validity
- ☐ Internal Validity

21. To protect the confidentiality of participant data, a researcher could:
- ☐ inform participants that the data will only be kept on the lab computers.
- ☐ store participant data with a code number instead of participant names.
- ☐ analyze the data only with trusted collaborators.
- ☐ use a qualitative method of data collection.

22. Dr. Ortiz wants to measure attitudes related to scientific productivity among attendees at a national conference on developmental psychology. To narrow the sampling frame, Dr. Ortiz divides the participant list into regions of the country and randomly selects two states from each region. She then divides each state list into public and private universities and randomly selects two universities from each state. Finally, Dr. Padilla selects 50 participants randomly from this narrowed list. This type of sampling would be considered

- ☐ cluster.
- ☐ multistage.
- ☐ simple random.
- ☐ systematic.

23. If a researcher wishes to study a population that is hard to locate then which of these is generally the preferred method of sampling?

- ☐ Quota sampling
- ☐ Convenience sampling
- ☐ Snowball sampling
- ☐ Cluster sampling

24. 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 integrity?

- ☐ Participating in research is voluntary and participants can quit at any time
- ☐ The benefits of the research should apply broadly and not only to a particular group
- ☐ Participants have an opportunity to understand the research and make an informed decision about participating
- ☐ Research is conducted accurately and reported honestly
- ☐ Individual performance in a research study is kept confidential
- ☐ Any risk from the research to participants should be minimized
- ☐ Psychologists build trust and conduct their business professionally

25. To examine gender and thrill seeking at an amusement park, a researcher observes the types or attractions attendees visit as they spend time at a local amusement park. Should this researcher obtain informed consent?

- ☐ Yes
- ☐ No

26. Which of the following is practice of "Open Science"?
- ☐ Discarding the data of a participant upon their request.
- ☐ Publishing "pre-print" articles on websites that are free to access
- ☐ Acknowledging the original source of information.
- ☐ Striving to replicate research

27. What is the best way to prevent plagiarism and fraud in research?
- ☐ Education and training
- ☐ Working with a team of researchers
- ☐ Strict criminal penalties
- ☐ Relying on one's supervisor for ethical decisions

28. A researcher was interested in the relationship between multitasking during class and memory for the material discussed during that class. After recruiting 35 college students, she decided to observe the participants' multitasking behaviors during class in a large lecture hall, and then asked them to take a short quiz on the material from that day's class session. The level of authenticity for this study would be
- ☐ low, because the researcher only recruited a small number of participants.
- ☐ unknown, because the population of interest is not defined.
- ☐ moderate, because this is a correlational study.
- ☐ high, because the multitasking observed should reflect a typical class situation.

29. Which of the following is not considered a review article?
- ☐ An empirical article
- ☐ A meta-analysis
- ☐ A narrative review
- ☐ A theoretical article