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RESEARCH METHODS JOURNAL

2021 2022

2021-2022 Research Methods Journal

Lindenwood University Research Methods Course

Table of Contents

Prologue

I am especially proud to present this year's research journal because the students in the Advanced Research Methods class of 2022 successfully completed their research projects while facing some obstacles due to the COVID-19 pandemic. The students proved to be very resilient and found creative ways to work around the restrictions that remained in place to accommodate the risks associated with the pandemic. In addition, the class itself as well as my guidance and supervision were delivered on Zoom using the distance learning format, which made many things more challenging. Yet, the students successfully completed their projects and most of them even presented their research proposal at the Student Academic Showcase in April 2022. I could not have asked for a group of students better equipped to take on the extra challenges that were part of their journey to success.

The cover for this year's journal was designed by Kenzie Goldsmith. The papers contained in this journal are of most of the students who completed the Advanced Research Methods class in spring 2022 as well as a paper completed by a student who completed her year-long research project through the Psychology Research Labs course in the calendar year, 2021. There are a few papers that were not included in this issue of the journal because they will be published elsewhere in the near future.

Finally, I would like to extend a special thanks Marissa McGraw for serving as editor for this issue of our journal. She worked very hard and was *very* patient with me being very picky about consistencies in formatting!

Michiko Nohara-LeClair, PhD

Course Professor

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The Gifted Child in Adulthood:

Opinions on Educational Experiences and their Relation to the Current Self

*Miranda Brannum**

Giftedness is defined as excelling in a topic beyond the capability of other peers. Oftentimes gifted students are placed in gifted programs and/or assigned gifted Individualized Education Programs to provide acceleration and enrichment. My survey asks participants ages 18 years of age or older questions about how they feel gifted programs or gifted Individualized Education Programs may have influenced them, and if they have any comments or suggestions for improving these programs. I intended my study to be descriptive and exploratory to provide insight on any common themes and tendencies people in gifted programs may report. Descriptive and qualitative analyses were conducted through Qualtrics and Microsoft Excel.

Keywords: gifted program, giftedness, Individualized Education Program (IEP), education, opinions, experience

A gifted or talented student is a socially constructed term for a student who excels in one or more subjects beyond the average abilities of their peers. Historically, gifted students have been identified through IQ testing in order to solidify giftedness through providing a limit for what IQ constitutes a gifted student (Dai, 2019). In more recent times there has been a shift to broader methods of identifying giftedness. A wider scope allows for individual differences to be considered when assessing giftedness, such as socioeconomic status, cultural disparity, and test anxiety (Dai, 2019). In general, gifted programs are intended to provide additional enrichment for students who surpass standard curriculum, and/or accelerate the speed of their learning. However, experts are torn on how exactly to accomplish these goals. For example, some experts believe gifted students are an individual group which should be separated from other students while others believe giftedness is a spectrum that encompasses every child (Dai, 2019).

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Opinions on the potential effects of gifted programs on students labeled as gifted vary within available literature. In some cases, it has been found that children placed in gifted programs are more likely to have positive mental health experiences and higher reports of well-being (Jones, 2013). There is also some evidence that attending gifted courses improves the attention skills of gifted children. When compared to gifted children in standard education, gifted children in enrichment programs performed better in sustained attention assignments and became more accurate over time (Tao & Shi, 2018). Opposingly, there is evidence that being placed in a gifted program as a child can increase rates of depression and suicide. When identified as gifted, some children develop inadequate coping skills such as withdrawing socially and practicing extreme perfectionism that can lead to poor mental health. One possible explanation for these actions could be the feeling of estrangement from their peers (Winsor & Mueller, 2020).

In a study by Hände et al. (2013), opinions of students on their gifted peers were mixed. In general, students gifted in math or science were considered the most intelligent, most conscientious, and least sociable; students gifted in the languages were considered the next most intelligent, next most conscientious, and moderately sociable; and students gifted in physical activities were considered the least intelligent, least conscientious, and highly sociable (Hände et al., 2013). These stereotypes can be harmful. Such opinions could lead to low self-esteem, poor mental health, and encourage children to adhere to the social role assigned to them rather than choosing who they want to be themselves.

Although much progress has been made in the domain of giftedness and gifted education, there are still many possibilities that need to be studied to provide more concrete results. The aim of my study was to be exploratory and provide a gateway for future research. Through a survey, I collected the opinions of people who used to be in gifted programs on these programs, as well as

their opinions on how being labeled as gifted may have influenced their self-perception and life outcomes. It is my hope that the results of my study will assist in gathering input on how gifted student feel about their experiences and what changes they would like to see implemented in the future.

Method

Participants

Participants included adults ages 18 and older who were enrolled in gifted programs and/or assigned gifted IEPs (Individualized Education Program) during their educational experience. A gifted IEP is an individualized education plan meant to meet a gifted student's needs for more advanced or more fast paced learning. Gifted IEPs are different from IEPs intended to assist students with disabilities in their education. Recruitment methods included posting a script and anonymous Qualtrics survey link to the Psi Chi website, Reddit, Snapchat, and Facebook.

There were 168 total participants. When asked to describe their gender identity, 62 participants identified as women, 28 as men, and 7 as some other way. Of the provided races and ethnicities, 81 were White/European American, 4 were Black/African American, 8 were Asian, 2 were American Indian/Native American (Mainland), 7 were Hispanic/Latino/Hispanic origin, 4 were Middle Eastern or North African, 1 was Native Hawaiian or Pacific Islander, and 8 identified as other.

For educational attainment, there were 2 participants with some high school, 5 with a high school diploma or equivalent, 1 with vocational training, 14 with some college, 5 with an associate degree, 38 with a bachelor's degree, 7 with some post graduate work, 18 with a master's degree, 1 with a specialist degree, 1 with an applied or professional doctorate degree, 3

with a doctorate degree, and 2 who said "other". There were 77 participants who said they were between ages 18-39 years old and 15 who said they were between ages 40-64 years old. The average of participants was 30.5. This study was reviewed and approved by the Lindenwood Institutional Review Board.

Materials and Procedure

An anonymous online Qualtrics survey (see Appendix) was distributed to participants through Reddit, Snapchat, Facebook, and the Psi Chi website so they could self-report their answers. My survey was 10-15 min long and consisted of 43 questions. These questions were designed to assess how participants felt being labeled as gifted influenced them (Q5-20, Q34), opinions on gifted programs/IEPs (Q21-30), how long the participants attended their gifted program/IEP (Q32-33), and what suggestions they have to improve programs such as these (Q35). Additionally, I asked demographic questions to describe the sample population. (Q37-41).

Results

I analyzed my data through Qualtrics using percentages and through Microsoft Excel using frequencies to determine if there were any tendencies in my population regarding how they viewed the programs, the potential influences of the programs, and suggestions to improve the programs. The average number of years someone stayed in a gifted program was 10.22 (Q33). When asked if being in a gifted program was beneficial to their educational experience, 74.79% of respondents agreed, while 25.22% either disagreed or were neutral (Q5). Opinions on social experiences were more mixed with 43.48% agreeing they were positively influenced by their programs while 56.52% either disagreed or were neutral (Q7).

One short answer question asked how participants believed being in a gifted program or gifted IEP influenced them, if at all (Q34). I came up with five categories to group similar

answers together for qualitative analysis, which are as follows: “Academic positive”, or any experience that influenced participants in a positive way related to education (i.e., dedication to school, creativity, critical thinking skills); “social positive”, or any experience that influenced participants in a positive way related to interactions with others (i.e., autonomy, making friends, real world experience); “social negative”, or any experience that influenced participants in a negative way related to interactions with others (i.e., bullying, self-esteem issues, approval seeking behaviors); “increased expectations”, or any experience that involved extremely high standards from others and for themselves (i.e., pushed to learn, lack of choice, mental health); and “none”, which was not noticing any influence at all.

In Microsoft Excel I coded academic positive as one, social positive as two, social negative as three, increased expectations as four, and none as five. I found that 44 answers fell into the “academic positive” category, 34 answers fell into the “social positive” category, 24 answers fell into the “social negative” category, 9 answers fell into the “increased expectations” category, and 9 answers fell into the “none” category.

Limitations and Implications

As this study is exploratory and only uses descriptive analyses, I cannot draw any conclusions, but rather show different tendencies of my sample. Additionally, some participants reported the format of my survey questions was confusing because I asked about gifted programs and gifted IEPs in separate questions. Though this format was intended to avoid double-barrel questions, I see now how it could be frustrating as a participant who only participated in one of the two options. My population was also largely female and largely white, which does not provide the most generalizable results.

Current implications of my research include gathering first-hand opinions on gifted programs from people who were involved in them and exposing common themes to understand what these programs are doing well and what possibly needs to be reformed. If I were to conduct this study again, I would consider implementing a true experimental design where I would conduct a study on gifted children in a mock classroom that implements suggestions, I have gathered to improve gifted programs compared to a mock classroom that uses the typical gifted program format. It is my hope that this study will spark interest in other researchers and lead to more research on the topic of giftedness so gifted children and adults may experience the best enrichment and outcome possible.

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Appendix

Qualtrics Survey

The Gifted Child in Adulthood

Q1 You are being asked to participate in a research study. We are doing this study to assess the opinions of people who grew up in gifted programs on gifted programs, how they believe they were influenced by them, and any suggestions for these programs to consider. During this study you will answer multiple choice and brief text write-in questions. It will take 10 to 15 minutes to complete this study.

Your participation is voluntary. You may choose not to participate or withdraw at any time. There are no risks from participating in this project. There are no direct benefits for you participating in this study.

We will not collect any data which may identify you.

We will do everything we can to protect your privacy. We do not intend to include information that could identify you in any publication or presentation. Any information we collect will be stored by the researcher in a secure location. The only people who will be able to see your data are: members of the research team, qualified staff of Lindenwood University, representatives of state or federal agencies.

Who can I contact with questions?
If you have concerns or complaints about this project, please use the following contact information:

Miranda Brannum: mb659@lindenwood.edu
Michiko Nohara-LeClair: mnohara-leclair@lindenwood.edu
If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

- ○ I agree to participate
- ○ I do not agree to participate

Skip To: End of Survey If You are being asked to participate in a research study. We are doing this study to assess the opi... = I do not agree to participate

Q2 Are you 18 years of age or older?

- Yes
- No

Skip To: End of Survey If Are you 18 years of age or older? = No

Q3 In your educational experience, have you ever been enrolled in gifted courses or assigned gifted IEPs? A gifted program is any educational program meant to provide supplementary enrichment to children in one or more subjects (i.e., math, music, reading…), and an IEP is an individualized education plan meant to meet a gifted student's needs for more advanced learning.

- Yes
- No

Skip To: End of Survey If In your educational experience, have you ever been enrolled in gifted courses or assigned gifted... = No

Q4 The following questions will ask your agreement or disagreement on statements about gifted programs/ gifted IEPs.

Q5 Being in a gifted program was beneficial to my educational experience.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q6 Being assigned a gifted IEP was beneficial to my educational experience.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q7 Being in a gifted program positively influenced my social experiences.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q8 Being assigned a gifted IEP positively influenced my social experiences.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q9 Being in a gifted program met my educational needs.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q10 Being assigned a gifted IEP met my educational needs.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q11 Being in a gifted program/ assigned a gifted IEP increased my stress and anxiety levels.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q12 Being assigned a gifted IEP increased my stress and anxiety levels.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q13 I am glad that I was placed in a gifted program.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q14 I am glad that I was assigned a gifted IEP.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q15 I would have rather attended typical classes than been placed in a gifted program.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q16 I would have rather attended typical classes than been assigned a gifted IEP.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q17 I was bullied and/or outcasted because I was placed in a gifted program.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q18 I was bullied and/or outcasted because I was assigned a gifted IEP.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q19 Being in a gifted program increased my academic confidence.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q20 Being assigned a gifted IEP increased my academic confidence.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q21 People who are in gifted programs are held to a much higher standard than those who are not.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q22 People who are assigned a gifted IEP are held to a much higher standard than those who are not.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q23 Being in a gifted program is only for people who are more intelligent than average.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q24 Being assigned a gifted IEP is only for people who are more intelligent than average.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q25 Being in a gifted program is unnecessary.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q26 Being assigned a gifted IEP is unnecessary.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q27 I am satisfied with my educational experience in a gifted program.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q28 I am satisfied with my educational experience with an assigned gifted IEP.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q29 Gifted programs provide unique opportunities that could not be found elsewhere.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q30 Assigned gifted IEPs provide unique opportunities that could not be found elsewhere.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q31 The following questions will ask questions specific to your experience being placed in a gifted program/ assigned a gifted IEP.

Q32 What grade were you first placed in a gifted program/ assigned a gifted IEP?

▼ Preschool (31) ... Other (47)

Q33 How long did you stay in the gifted program/ use a gifted IEP?

▼ 1 year (4) ... Other (18)

Q34 In what way do you believe your placement in a gifted program or you being assigned a gifted IEP influenced you? If none, say none.

_____

Q35 What would you like to see more of in gifted programs or in IEPs?

_____

Q36 What would you like to see changed in these programs if anything?

_____

Q37 The next few questions will ask you about demographics.

Q38 What is your age in years?

_____

Q39 Do you describe yourself as a man, a woman, or some other way?

- ○ Man
- ○ Woman
- ○ Some other way (3) _____

Q40 What race/ethnicity do you identify with? Select all that apply:

- ☐ White/European American
- ☐ Black/African-American
- ☐ Asian
- ☐ American Indian/Native American (Mainland)
- ☐ Native Alaskan
- ☐ Hispanic, Latino, or Hispanic Origin
- ☐ Middle Eastern or North African
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other _____

Q41 What gender do you identify as?

- ○ Male
- ○ Female
- ○ Other _____

Q42 Please indicate your highest level of educational attainment:

- ○ Some high school
- ○ High school diploma or equivalent school
- ○ Vocational training
- ○ Some college
- ○ Associate degree (e.g., AA, AE, AFA, AS, ASN)
- ○ Bachelor's degree (e.g., BA, BBA, BFA, BS)
- ○ Some post undergraduate work
- ○ Master's degree (e.g., MA, MBA, MFA, MS, MSW)
- ○ Specialist degree (e.g., EdS)
- ○ Applied or professional doctorate degree (e.g., MD, DDC, DDS, JD, PharmD)
- ○ Doctorate degree (e.g., EdD, PhD)
- ○ Other _____

Q43 Thank you for taking the time to complete this survey for my project at Lindenwood University. I intend to gain insight on the opinions of people who were once in gifted programs/ assigned gifted IEPs on their educational, social, and personal experiences. Your feedback is appreciated. Thank you again for your contribution to the psychological sciences!

Please contact the Principal Investigator or Faculty Supervisor with any questions:

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The Effect of Mood on Task Completion Time

*Maia M. Busi**

Studies on mood and task completion tend to focus on task outcomes and task performance. It is typically found that positive mood states result in better test scores and better task outcomes (Martinez & Bartosek, 2015). This study examines the effect mood states have on task completion time through an anonymous online survey involving a mood manipulation and a timed visual search task. I hypothesized that that participants who were exposed to a positive stimulus will complete a visual search task quicker on average than participants who were exposed to a neutral stimulus. A total of 34 participants completed the survey. Participants were randomly assigned to either a positive stimulus group or a neutral stimulus group where they were asked to view a short video of either positive content (Boscoandhisbigstick, 2020) or neutral content (Weratedogs 2022). A manipulation check was provided to determine if the mood manipulation was effective. Participants then completed a timed visual search activity. An independent samples t-test was calculated to compare the mean task completion time between the positive video group and the neutral video group and found there was no significant difference between the groups. In addition, it was found that the mood manipulation had little effect on participants' overall mood states.

Keywords: mood, task completion time, visual search, mood scale, positive mood, neutral mood

Previous research on task performance outcomes typically supports the hypothesis that negative mood states result in negative task outcomes. A study by Martinez and Bartosek (2015) found that the level of negative task-irrelevant emotion experienced by an individual has a negative correlation with performance on a multiple-choice exam. In addition, it was found that any level of positive task-irrelevant emotion results in higher exam results than any level of negative task-irrelevant emotion (Martinez & Bartosek, 2015). This suggests that positive emotional states yield higher task performance scores relative to negative emotional states

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Chi et al. (2015) support this conclusion, stating that negative mood states result in negative task outcomes in terms of higher number of errors and higher self-sabotage levels. They also found that positive mood states act as a buffer against negative mood states and result in lower levels of self-sabotage and less errors (Chi et al. 2015). Livi et al. (2015) (as cited in Geue, 2018) also note that positivity within work teams results in better personal performance in terms of task outcomes and can uplift personal team member's individual positivity.

Although these studies describe the effects of mood on performance outcomes, there is little research on the effects of mood on task completion time and efficiency. The present study aims to investigate the relationship between mood and task completion time by manipulating participant's moods before they complete a time-recorded visual search task (see Appendix A). I hypothesized that participants who were exposed to the positive stimulus will complete a visual search task quicker on average than participants who were exposed to the neutral stimulus.

Method

Participants

Participants for this study were limited to individuals over the age of 18 who had no impairment to their vision or hearing. An exception was made for participants under the age of 18 who were members of the Lindenwood Participant Pool (LPP). Participants were recruited through social media and the LPP. A study link accompanied by a short description of the study was posted to Instagram, Facebook, and Snapchat. By clicking on the link, participants were anonymously taken to the study Qualtrics page where they could decide whether or not to participate in the survey. Recruitment through the LPP was regulated through a signup link posted to Sona Systems which included a brief description of the study including the estimated time the study would take to complete as well as how many LPP credits participants would

receive, which for this study was two. This study met the ethical standards of the Lindenwood Institutional Review Board (IRB) and the Psychology Program Scientific Review Committee (PPSRC).

A total of 34 participants completed this study. Of these participants, 82% (*n*=28) identified as women, 5% (*n*=2) as men, and six participants did not specify. Participant age ranged from 18 to 23 years of age (*M*=20.37, *SD*=1.63).

Materials and Procedures

Participants were asked to complete an anonymous online study distributed through Qualtrics. The study began with an informed consent document followed by two screening questions concerning the participants' sight and hearing to determine exclusion criteria. Participants were then asked to watch a short video sourced from TikTok that was either positive (Boscoandhisbigstick, 2020) or neutral (Weratedogs 2022). Participants were randomly assigned to watch one of the two videos. Both videos included a dog as the main focal point and were between 10 s and 15 s in length to ensure the only variable being manipulated was mood. After viewing the short video, participants completed an 8-item mood scale (Fairbairn & Sayette, 2013) measured on a six-point Likert scale (see Appendix B). They were then asked to complete a timed I Spy activity (see Appendix A). The study ended with four demographic questions (see Appendix C) followed by a thank you statement which explained the method and justification of the mood manipulation.

Measures

Mood Measure. The mood measure was derived from Fairbairn & Sayette (2013). The measure included eight statements concerning the participant's current mood that can be categorized as negative mood states (annoyed, sad, irritated, bored), and positive mood states (cheerful, upbeat,

happy content). Participants rated the level to which they agreed with each statement based on a six-point Likert scale, with 0 being *completely disagree* and 5 being *completely agree*. Negative and positive moods were scored separately, with scores between 0 and 7 being considered low, scores between 8 and 13 being considered neutral, and scores between 14 and 20 being considered high for both types of moods. This measure was taken as a manipulation check to determine if the TikTok video had its intended effect on the mood of participants.

Task Completion Time. Task completion time was measured by the time it took participants to complete the visual search activity. The time taken to find the 10 hidden items in the I Spy image was recorded in seconds. Qualtrics is unable to determine how many of the 10 items were found by each participant, so the task completion time was defined as the amount of time spent on the I Spy question in the survey. The completion times of participants were used to find the mean completion time of each group.

Results

The research hypothesis stated that the positive video group would complete the I Spy task faster than the neutral video group. Data was labeled as unusable if the participant did not complete either the mood scale or the I Spy activity and unusable data was discarded. After calculating the mean mood scale scores for each group, it was found that both the neutral video group (n=20) and the positive video group (n=14) displayed neutral scores for positive mood and low scores for negative mood. The neutral video group showed overall lower scores on the mood scale with a mean positive mood score of 12.10 (SD= 5.23), and a mean negative mood score of 3.70 (SD=3.80). The positive video group had a mean positive mood score of 13.54 (SD=5.70) and a mean negative mood score of 2.62 (SD=3.76). These results show that the mood manipulation did not have a significant effect on the overall moods of participants.

An independent samples *t*-test was run to compare the mean completion times between the neutral video group and positive video group on the I Spy activity. There was no significant difference between completion time of the neutral video group ($M = 81.14$, $SD = 62.27$) and completion time of the positive video group ($M = 89.50$, $SD = 50.02$), $t_{(32)} = .416$, $p = .680$. These findings do not support my hypothesis that the positive video group would outperform the neutral video group in task completion time.

Discussion

The results of this study did not support the hypothesis that the positive video group would complete the I Spy task faster than the neutral video group. In addition, the manipulation check showed that the video shown had very little effect on the participants' overall mood. Previous research mainly focused on the effects of negative emotions or negative mood states on task performance. The results of this study provided insight into the very small effect that positive mood states have on task efficiency.

This study was limited by the small sample size and the missing demographic information from some responses. A larger sample size would provide more accurate results and would likely decrease the large standard deviations found in the task completion time results of this study. Additional limitations occurred in the format of the I Spy activity. Since the measure was focused on task completion time, there was no measurement of task accuracy which would allow for confirmation that the task was successfully completed. Participants were able to continue past the I Spy activity at any time, meaning it is possible some participants did not complete the entire activity before continuing. Future research in this topic should control the task to ensure all participants successfully complete the task. It would also be beneficial to

incorporate different variables such as stress level to determine what factors most strongly affect task completion time.

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Appendix A

I Spy Activity

Participants were asked to find: a red apple, a pane, 3 “BEEP,” a birdhouse, a duck, 2 fish in a truck, and a zebra Jeep.

Appendix B

Mood Scale

Negative Mood states

Please indicate to what degree you agree or disagree with each statement **based on your current mood,** with 0 being "completely disagree" and 5 being "completely agree".

Annoyed

Sad

Irritated

Bored

Positive Mood States

Please indicate to what degree you agree or disagree with each statement **based on your current mood,** with 0 being "completely disagree" and 5 being "completely agree".

Cheerful

Upbeat

Happy

Content

Appendix C

Demographic Questions

Q10 What best describes you?

- ○ Man (1)
- ○ Woman (2)
- ○ Other/ non-binary, please specify (3) _____
- ○ Prefer not to say (4)

Q11 What best describes you? Select all that apply.

- ☐ White (German, Irish, English, Italian, Polish, French, etc.) (1)
- ☐ Hispanic, Latino, or Spanish Origin (Mexican or Mexican American, Puerto Rican,Cuban, Salvadoran, Dominican, Colombian, etc.) (2)
- ☐ Black or African American (Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.) (3)
- ☐ Native Hawaiian or Other Pacific Islander (Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.) (4)
- ☐ Asian (Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.) (5)
- ☐ American Indian or Alaska Native (Navajo Nation, Blackfeet tribe, Mayan, Aztec,Native Village of Barrow Inupiat Traditional Government, Nome Eskimo CommunityAsian - For example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.) (6)
- ☐ Middle Eastern or North African (Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian, etc.) (7)
- ☐ Some other race, ethnicity, or origin, please specify: (8) _____

Q12 What is your age in years?

_____

Q17 Are you a member of the Lindenwood Participant Pool?

- ○ No (1)
- ○ Yes (2)

Interpretation of Grammatical Gender Among English Monolingual Speakers

*Diego De Gregorio**

This research project aimed to discover how English monolingual speakers interpret the idea of grammatical gender, and if they have an innate bias toward associating common English nouns to the masculine gender. My hypothesis was that participants would assign a masculine grammatical gender to words at a greater than chance due to an existent internalized genderism/sexism within the participants. To gather data, a Qualtrics survey was designed to test participants. Said survey was limited to people who only speak English and contained 10 different common nouns. After the presentation of each noun, participants were given two options: masculine or feminine. They had to indicate the perceived gender per each noun. After gathering the data, the number of words the participants assign as masculine were compared against the expected value of 5 out of 10 using a one-way chi-square analysis. The proportion of common English nouns assigned to the masculine gender, (M = 5.52, SD = 1.2) differed from chance, $\chi^2(1, N = 113) = 38.6$, $p = .00001$. Additionally, the results of the study hinted toward English monolingual speakers having biases when assigning gender to common English nouns – assigning masculine more than feminine to the list of nouns. These findings may also be indicative of possible sexist/genderist believes in English monolingual speakers when conceptualizing language.

Keywords: grammatical gender, monolingual, masculine, feminine, genderism, sexism

Grammatical gender is used to subdivide and organize nouns. For example, in Italian, grammatical gender includes masculine terms for men (*il bambino* "the young boy") and feminine ones for women (*la bambina* "the little girl"); (Audring, 2016). In the English language, there is not any type of grammatical gender. For example, the phrase “the paper” translates to “*el papel*.” In Spanish, the prefix “*el*” denotes that the noun is masculine. In contrast, the word “the” is a gender-neutral prefix used for all nouns. Even though both share the same purpose - to describe a noun, the Spanish language uses gender.

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Undergraduate Psychology Research Methods Journal, Vol. 2, Iss. 1 [2022], Art. 9

Furthermore, in Spanish, the masculine plural is used for any group that includes a male member, regardless of proportion. (Wasserman & Weseley, 2009).

In a study conducted by Lew-Williams and Fernald (2007), it was concluded that grammatical gender plays an important role in sentence interpretation. They gathered a group of Spanish-learning children between 34 to 42 months of age and tested them with an eye tracking procedure. The children were shown pairs of images with names of the same grammatical gender (*la pelota,* ‘‘ball [feminine];’’ *la galleta*, ‘‘cookie [feminine]’’) or different grammatical gender *la pelota* [feminine]; *el zapato*, ‘‘shoe [masculine]’’) The children were much faster when interpreting the images that had the same grammatical gender than on same-gender trials. It can be inferred that grammatical gender might have other impacts in the human mind, other than just dividing words.

Surely, it is also safe to assume that the grammatical structure of languages may promote sexism and genderism in society (De Lemus & Estevan-Reina, 2021). Studies conducted in the past hint toward a more biased response coming from bilingual participants who happen to know Spanish, Portuguese, or French. Wasserman and Weseley (2009) found participants who were bilingual in Spanish and English showed higher levels of sexist tendencies when measured with the Neosexism Scale (Tougas et al., 1995) than English monolingual speakers. They concluded in their discussion how this might be influenced by the grammatical gender in the Spanish language.

Nonetheless, no substantial study has been undertaken on how English speakers grasp the concept of assigning gender to common nouns. Similarly, no research has been conducted that demonstrates a possible inherent bias on the part of English speakers when they design their own

grammatical gender by assigning gender to nouns. The present study aims to close the gap in the literature by exploring questions such as, do English monolingual speakers understand the concept of grammatical gender? And do they happen to show an inclination toward assigning the masculine gender to common nouns?

In this project, two main objectives were put into practice. The first was to determine how English speakers would assign grammatical gender to a common noun without having any preconceived perspective on the matter, and secondly, whether English speakers had an inherent bias towards assigning words the masculine gender. A questionnaire was posted online, and participants' perception on grammatical gender was tested and analyzed to answer the research questions.

Method

Participants

Participants in the study had to be over the age of 18 and not speak any other language than English to be eligible to participate. Knowing more than one language was understood as being able to communicate in a language other than English. This was to avoid including individuals who may have possible preconceptions about grammatical gender they may carry over from another language they speak.

Participants were chosen using two ways. The study was first advertised on the Lindenwood Participant Pool (LPP), a Lindenwood University subject pool that recruits Lindenwood University students to take part in research studies. Lindenwood faculty members supervise these studies, and students who engage in research through the LPP receive LPP credits. LPP credits can be converted into bonus points for the students toward their LPP-participating class. In the case of this study, participants from the LPP received two LPP credits

for their participation for an eligible class of their choosing. Participants in the LPP were required to log in to their Sona Systems account, travel through the portal, and choose the project.

As a second strategy, users from Instagram and Twitter were encouraged to join by publishing a link. A quick invitation message was shared in an "Instagram Story" as well as a tweet, along with the link and a brief explanation of the study. Participants gathered via social media were required to click the link posted on the “Instagram Story” in the case of Instagram, and on the tweet in the case of Twitter; all of this in cooperation both Instagram’s and Twitter’s terms and services. The study's ethical criteria were assessed by the Lindenwood Institutional Review Board and the Lindenwood Psychology Program Scientific Review Committee.

There was a sample of (N = 113) participants for this study. Eighty-six of them were women, 24 were men, and three were non-binary. Participants were predominantly younger than 25. The youngest participant was 18 years old, while the oldest was 73 (M = 30.61, SD = 13.2). The participants were predominantly White or European American with 106 participants having selected that race; there were also five Black or African American; one Native American; and one Asian participating in the study.

Materials and Procedure

A Qualtrics survey was designed (see Appendix A) consisting of a consent statement that participants had to agree to before being able to continue; a set of five different demographic questions (if participants were at least 18 years of age, exact age of the participant, whether the participant knew another language besides English, gender, and race/ethnicity); the main task; and an end of survey message. The Qualtrics survey was coded in such a fashion that if

participants failed to meet the requirements of age or the language restriction, they would be booted out of the survey.

In the main task of the study, after having confirmed to have read the instructions, participants were provided with a list of 10 common English nouns. They had 10 s to assign a gender (either masculine or feminine) to each word. The 10 words were presented to each participant in the same order. The Qualtrics survey was available in two different versions: one in which the feminine gender is shown as the first choice (see Appendix B), and the other in which the masculine gender is presented before the feminine gender (see Appendix C). A randomizer was implemented to ensure that half of the participants would receive each version.

Additionally, a strict process to filter the word selection was put into place: the 10 nouns from the list are not normally taught in introductory language courses, they were limited to gender neutral objects; and, in Spanish, half of the nouns are masculine, and the other half are feminine. This because most English monolingual speakers that remember taking elementary Spanish or French, could potentially recall the Spanish word, *árbol* (tree), for example, a masculine word. Also, it was of extreme importance to not list any words that might rely on a gender or sex identity in the English language, like kitten, for instance. Having words like kitten would defeat the purpose of the study since the gender identity of the word would be tied to its biological sex, rather than the concept and participants' personal opinions – what is being studied. Lastly, 50% of the words were masculine, and the remaining 50% were feminine in the Spanish language since Spanish was the main language used to contrast the words used for the study.

The survey had two different feedback letters. One for the participants who did not meet the participation requirements, and the other for those who did (see Appendix A). The first

feedback letter contained a list of possible reasons for being booted out (not being 18 or knowing more languages besides English), the rationale behind the study, and the researchers' contact information. The second feedback letter - meant for participants who completed the entire survey, had the rationale behind the study, and the researchers' contact information.

Finally, when gathering data, the Qualtrics filtering feature was used to write down the data from the demographic questions in an Excel sheet, i.e., age, gender, and race/ethnicity. After the data were gathered from the Qualtrics survey, the Excel "COUNTIF" formula was used for each one of the 10 nouns to find how many times participants assigned the word to the masculine gender. In addition, percentages were calculated in the same Excel document to also represent the proportion and incidence in which English monolingual speakers assigned the masculine gender to each common word.

A one-way chi-square analysis was conducted to determine whether participants' responses differed from chance and therefore whether there was an inherent genderism in English speakers when assigning gender to words. The measurement consisted in the prevalence of said variables: the number of times in which participants selected either gender for each individual word as the measure to address which gender is associated with each individual word, and the percentage of the nouns assigned as masculine to measure inherent biases.

Demographic variables were analyzed by IBM SPSS Statistics (Version 28) using descriptive statistics to count the participants; Excel formulas were used for the prevalence and percentages in which participants assigned words to the masculine gender; and finally, for the chi-square analysis, the Social Science Statistics (https://www.socscistatistics.com/pvalues/chidistribution.aspx) online calculator was used to

determine if the proportion of common English nouns assigned to the masculine gender differed from chance (chi-square analysis).

Results

Of the 208 participants who completed the survey, 113 (54.3%) participants were included in the results section, this since only 153 (74%) were English monolinguals, 13 (6.7%) were cut off due to incomplete data, and 27 (13%) participants' data were lost. Therefore, the final count of total participants was of 113. Out of the 113 participants, 61 took the first version of the Qualtrics survey (Feminine Before Masculine Version), and the remaining 52 took the second version of the Qualtrics survey (Masculine Before Feminine Version).

For this study, it had been hypothesized that participants would assign a masculine grammatical gender to common nouns at a greater than chance due to an existent internalized genderism/sexism within the participants. Using Excel, it was possible to assess an average of which gender (masculine or feminine) each common noun was associated to. On average, English monolingual speakers associated the common English nouns to the masculine gender (M = 5.5, SD = 1.2) more frequently than to the feminine gender (M = 4.5 SD = 1.2). For the word grass, 54.9% of the participants assigned the masculine gender to it; 92% to shovel; 76% to tent; 8% to mirror; 28.3% to air; 89.4% to helmet; 66.4% to ambulance; 21.2% to lamp; 62% to cellphone; and 83.2% to boomerang, respectively (see Appendix D). As per mentioned, the participants perceived most words to be masculine. And as consistent to the hypothesis, the proportion of subjects who assigned the masculine gender to common English nouns differed from chance, $\chi^2(1, N = 113) = 38.6, p = .00001$. Lastly, the time it took for participants to

complete each task was analyzed, as well as the task completion average of every participant combined ($M = 2.3$, $SD = 0.76$).

Discussion

Two key objectives were implemented in this project. The first was to see how English speakers would assign grammatical gender to common nouns without any preconceived notions, and the second was to see if English speakers had an innate bias toward assigning masculine gender to terms. The findings provided insight into how English speakers think about grammatical gender on their own, as well as a probable bias whenever it comes to noun interpretation by English monolinguals - as hypothesized, English monolingual speakers assigned the masculine gender to nouns at a greater than chance.

The results showed an interesting pattern where participants would assign the masculine gender to words normally portrayed as rough and rugged. For example, the words shovel, helmet, and boomerang got the highest percentages of masculine interpretation (92%; 89.4%; and 83.2%, respectively). However, on the other hand, words like mirror and lamp got the lowest scores of masculine interpretation (8%; and 21.2%, respectively). These two terms can be analyzed in the same way. Given that mirror may be linked with beauty and care, and lamp can be an equivalent of support and direction – frequently resembling a feminine figure - it's fair to presume that participants assigned feminine to these two terms due to this.

There were other words that did not have the highest scores, but still had a clear common interpretation from participants. For example, tent, ambulance, and cellphone (76%; 66.4%; 62%, respectively). Surprisingly, although gender-neutral, participants decided to choose masculine over feminine. The study's most intriguing conclusion is that most participants linked the word air with the feminine gender. However, the reason behind this remains a mystery. It's

possible that people identify nature terms with words like "Mother Nature" or a nurturing feminine character.

Previous research has suggested that bilingual individuals who speak Spanish, Portuguese, or French had a more prejudiced reaction. When tested using the Neosexism Scale (Tougas et al., 1995), individuals who were bilingual in Spanish and English had greater levels of sexist inclinations than English monolingual speakers, according to Wasserman and Weseley (2009). They concluded that the grammatical gender in the Spanish language may have play a part in this. Given the results of this study, it can be inferred that English monolingual speakers can also be capable of having certain biases and sexist ways of thinking, in this case, when conceptualizing grammatical gender. That is why it was of extreme importance to not accept any participants that spoke other languages other than English, due to the possible biases they might have had when answering the questions.

As previously mentioned, the survey had two versions, (Feminine Before Masculine Version, and Masculine Before Feminine Version) this due to the possible promotion of sexism by mentioning the masculine gender before the feminine, in lines to what De Lemus and Estevan-Reina (2021) conclude in their study (structure in language my promote sexism/genderism). Notably, there were no substantial differences worth mentioning between the responses in both versions. The interpretations stayed congruent throughout, regardless of the order in which they were presented. This was a pleasant surprise because it was one of the biggest concerns in terms of logistic and time constraints the study had.

From this study, several practical implications can be suggested. Not only can English monolingual speakers understand grammatical gender but assign a gender to words they previously believed were gender neutral; these classifications could be based off merely previous

Undergraduate Psychology Research Methods Journal, Vol. 2, Iss. 1 [2022], Art. 9

experiences and opinions gathered throughout their lives, rather than preconcepts of grammatical gender. In addition to this, it can also be inferred that English monolingual speakers hold certain sexist/genderist biases when associating words to gender or vice versa.

However, the limitations of this study must also be acknowledged. The reliability of these findings might be impacted by the low sample size, as well as the lack of different generational cohorts, and racial diversity among participants. The absence of generalizability might be attributable to the generally disparate and almost exclusive participation the study had, where most participants were young White women. It is also beyond the scope of the study to be certain of the implications the study might have. It is only safe to assume and contribute to the lack of literature.

Before this study, there were not many extensive research investigations on how English monolingual speakers perceived gender assignment to common nouns or if English exhibited sexist/genderist tendencies while doing so. Even though this study was successful, further research is needed to be stablished. Future studies should consider the possibility of confounding variables that might affect with the study's procedures. For example, since the study was online, it was impossible to know if some participants lied about their age, or their ability to speak other languages beside English. In addition to this, a lot of data could not be considered for the statical analysis because some participants did not fully complete the survey.

A recommendation for researchers interested in this field of study is to focus on the practicality, and the possible confounding factors that might interfere with the study. A larger sample size with a more diverse set of participants might help with more generalizable results that can help the field. A replication of the study designed by Lew-Williams and Fernald (2007),

where sentence interpretation was tested could be put into practice, but adapted to grown English monolingual, rather than Hispanic newborns.

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Appendix A

Qualtrics Survey

Interpretation of Grammatical Gender Among English Monolingual Speakers

You are being asked to participate in a survey conducted by Diego De Gregorio and faculty supervisor, Michiko Nohara-LeClair at Lindenwood University. We are doing this study to find how English speakers assign grammatical genders to nouns by asking the participants to assign a gender, (either masculine or feminine) to nouns. Participants will be given 10 seconds to assign a gender to each noun, for a total of 10 nouns. It will take about 3 minutes to complete this survey. Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There is a chance you may feel slight frustration due to the novelty of the task. If you feel uncomfortable, you may withdraw without any penalties. We will not collect any information that may identify you. This study will benefit you by giving you the opportunity to learn about grammatical gender which is something that is absent from the English language.

If you are in the LPP you will receive two extra credit points in the course for which you signed up for the LPP. You will receive extra credits simply for completing this information sheet. You are free to withdraw your participation at any time without penalty. Participants who are not part of the LPP will receive no compensation beyond the possible benefits listed above. However, your participation is an opportunity to contribute to psychological science.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Diego De Gregorio, dd246@lindenwood.edu

Michiko Nohara-LeClair, mnohara-leclair@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age. You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

I have read, understood, and printed a copy of, the above consent form and desire of my own free will to participate in this study

○ I agree

○ I do not agree

Are you at least 18 years old?

- ○ Yes
- ○ No

How old are you?

_____

Do you speak any other language besides English?

- ○ Yes
- ○ No

What is your gender?

- ○ Male
- ○ Female
- ○ Non-Binary

Choose one or more races that you consider yourself to be:

- ☐ White
- ☐ Black or African American
- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Native Hawaiian or Pacific Islander
- ☐ Other _____

Instructions

This survey will ask you to assign a gender to common nouns such as tree, house, etc. There will be two options for you to select: **masculine** or **feminine**, choosing the perceived gender for each noun.

You will only have 10 seconds to select each response. There is no right or wrong answer in this survey, so go with your instinct! - Good luck and thank you for participating!

Did you thoroughly revise the survey's instructions?

○ Yes

○ No

Grass

Masculine **Feminine**

Shovel

Masculine **Feminine**

Tent

Masculine **Feminine**

Mirror

Masculine **Feminine**

Air

Masculine **Feminine**

Helmet

Masculine **Feminine**

Ambulance

Masculine **Feminine**

Lamp

Masculine **Feminine**

Cellphone

Masculine **Feminine**

Boomerang

Masculine **Femini**

Thank you for being part of my research project, I am very glad you took the time to fill out my survey!

Study's Purpose/Rationale

The purpose of this study was to see how English Speakers understand the concept of grammatical gender and if there is an inherent bias towards assigning the masculine gender to nouns. This study was exploratory and there were no wrong answers from participants.

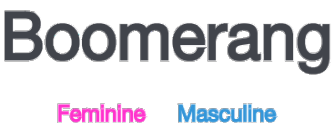
According to the *Oxford Research Encyclopedia*, **grammatical gender can be understood as a simple way to classify nouns and said gender systems may vary between languages. For example, "the ball" is la pelota (female) in Spanish and le ballon (male) in French.**

In the English language there is no grammatical gender.

If you have concerns or complaints about this project, please use the following contact information:
Diego De Gregorio, dd246@lindenwood.edu
Michiko Nohara-LeClair, mnohara-leclair@lindenwood.edu

Appendix B

Qualtrics Survey Version 1 (Feminine Before Masculine Version)



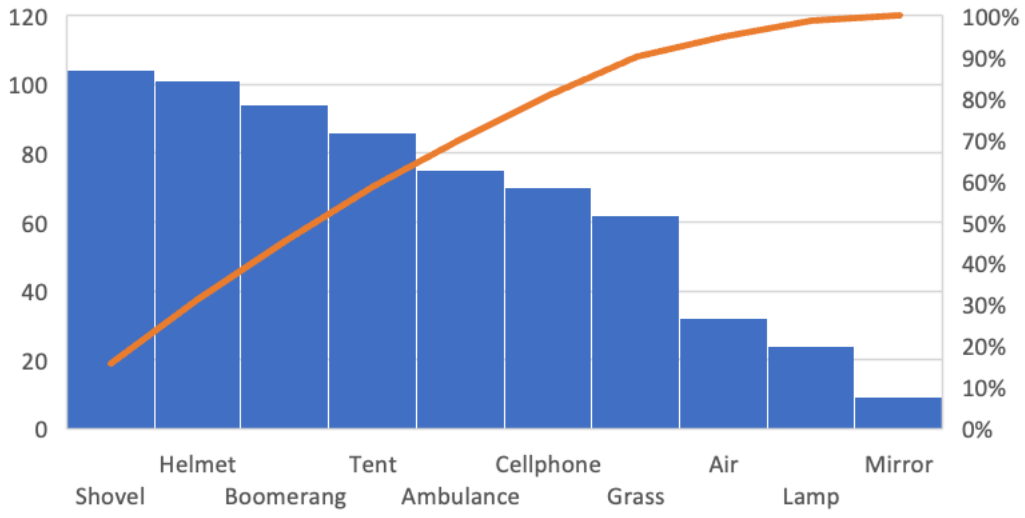
Appendix C

Qualtrics Survey Version 2 (Masculine Before Feminine Version)

Appendix D

Interpretation of the Masculine Grammatical Gender in Common English Nouns

Word	Percieved as Masculine	Percentage
Grass	62	54.9%
Shovel	104	92%
Tent	86	76%
Mirror	9	8%
Air	32	28.3%
Helmet	101	89.4%
Ambulance	75	66.4%
Lamp	24	21.2%
Cellphone	70	62%
Boomerang	94	83.2%



The Links Between Young Children's Use of Pacifiers and Swaddling with Child Sleep Arousal

*Kenzie Goldsmith and Melanie DuBois**

Sleep arousal, or waking experiences during sleep, in young children was examined in relation to pacifier usage and the caregiver's use of the swaddling technique. Primary caregivers of young children from 1 to 24 months old, fluent in English, and 18 years or older completed a Qualtrics survey detailing their child's sleep routines. The survey questions considered the child's use of self-soothing devices and the caregiver's use of soothing techniques, namely pacifiers and swaddling. By utilizing the Brief Infant Sleep Questionnaire-Revised (BISQ-R; Sadeh et al., 2020), we examined the relationship between child sleep arousal and pacifier usage, along with sleep arousal and swaddle usage. By using a convenience sample of 33 participants, we found that there was no significant correlation between child sleep arousal and pacifier use. The results of an independent t-test revealed no statistical difference in sleep arousal between pacifier users and non-users, $t(18.85) = .69$, $p = .26$. Along with this, the results of an independent t-test revealed no statistical difference in sleep arousal between swaddle users and non-users, $t(21) = .89$, $p = .19$. These findings suggest that pacifier usage and/or use of the swaddling technique has no significant relationship to child sleep arousal.

Keywords: sleep arousal, self-soothing, pacifier, swaddling, infant, caregiver

Sleep is vital to the growth and development of all children. It plays an important role in various cognitive, psychological, and somatic processes. Infants range greatly in terms of hours of sleep, varying anywhere from 10 to 18 hours in early infancy, which decreases to a range of 8.5 to 11 hr as they reach toddlerhood (Bruni et al., 2014). Infants who have the ability to self-soothe throughout the night develop healthy sleep-wake patterns (Burnham et al., 2002). As such, decreasing sleep arousal in children is pertinent to promoting better sleep.

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Research suggests that various self-soothing devices and soothing items may aid this pursuit, including pacifiers and sleep swaddles (Moon et al., 2011; Öztürk Dönmez & Bayik Temel, 2019). Using a pacifier during sleep is encouraged by the American Academy of Pediatrics, and it is noted that the protective effects of a pacifier continue when the child loses it during sleep (Moon et al., 2016). The benefits of this self-soothing device are seen not only in sleep but in protective measures as well. Pacifier use also decreases infant arousal during sleep and offers increased protection against SIDS for infants in adverse sleeping environments (Moon et al., 2011).

Soothing items employed by caregivers may promote better sleep within children (Öztürk Dönmez & Bayik Temel, 2019). One commonly used soothing item for younger children is a swaddle, which involves a technique that encourages wrapping a child's body comfortably in a blanket with their head out. The swaddling technique promotes better sleep within children by decreasing the likelihood of waking, reducing the startle reflex, and providing comfort (Kelly et al., 2016). Research suggests various caregiver soothing behaviors beyond swaddling can reduce child sleep arousal as well. Using the 4S soothing techniques with infants (swaddling, holding at side or stomach position, shushing-white noise, and swinging) in one study showed that the children experienced a decrease in waking at night on average in comparison to the control group (Öztürk Dönmez & Bayik Temel, 2019). Another study found sleep time from swaddling, in addition to arousal and autonomic control, is affected by previous swaddling experience (Richardson et al., 2010).

We hoped to gain general insight into young children's sleep practices in exploring the possible relationship between children's use of pacifiers and caregivers' use of swaddling as they pertain to child sleep arousal. We hypothesized that young children and infants who utilize

pacifiers would experience less arousal during sleep. In addition, we hypothesized that caregivers utilizing swaddles and the swaddling technique would promote better sleep within children. Our online survey examined young child and infant sleep practices. We hoped to provide knowledge to parents and caregivers with children of these ages about the use of pacifiers and swaddles as they relate to sleep.

Method

Participants

The study's participants were included if they met the criteria of being at least 18 years of age, fluent in the English language, and having a child between the ages of 1 month to 24 months to which they were considered a primary caregiver. We defined a primary caregiver as being involved with the child for the majority of a week, or four days. The intended sample size for this study was 50 to 100 participants, and the achieved sample size was 33. We were able to utilize data from 24 of the 33 participants, with unusable data attributed to uncompleted surveys or participants not meeting the study's criteria. All 24 participants specified they were at least 18 years old and fluent in the English language. All participants had a child between 1 month to 24 months of age, with the average age of the participants' children being 12.5 months. The participants were asked how many children they had, with the average number of children per participant being 2.26, $SD = 1.36$. Each participant specified they were involved seven nights a week in their child's nighttime routine. There were 23 participants who described themselves as mothers and 1 participant described themselves as a father.

The study's sampling procedure was a convenience sample of participants through two recruitment sources. The participants for this study were recruited through physical flyers posted at three different locations, as well as digital flyers with social media scripts posted on three

different social media sites. We obtained permission to post flyers at the Lindenwood University buildings known as Evans Commons and the Spellmann Center, along with the Goddard School of St. Charles, Missouri.

Social media recruitments were conducted through the sites Facebook, Reddit, and Snapchat. Facebook is a social networking and media service that allows users to engage with one another through posts involving pictures, videos, and words. Reddit is a social website that permits users to post to various subreddits consisting of a variety of topics to engage with one another through comments. The subreddit r/SampleSize was used for this study. Snapchat is a social media service that allows users to send messages, pictures, and videos that can expire or be deleted within a set amount of time. Each post to the three sites included the flyer along with a social media script. The participants completed this study of their own will, with no compensation provided. This study met the ethical standards evaluated by the Lindenwood University Institutional Review Board and the Psychology Program Scientific Review Committee.

Materials and Procedure

We used our personal phones, laptops, and iPads to create our flyer, survey, and to conduct data analyses. To recruit participants for the study we created a flyer through Adobe's Creative Cloud program, as seen in Appendix A. This flyer was created to reach individuals beyond Lindenwood University as we felt that a large majority of the students would not meet the inclusion criteria of this study. We provided a Quick Response (QR) code to direct potential participants to the Qualtrics survey on the bottom left corner of the flyer. Facebook, Reddit, and Snapchat allowed us to recruit more participants who fit within our study's criteria. We used a digital version of our flyer for our posts on these sites. Facebook and Snapchat did not require

approval for posts since we used our personal accounts and followed the Terms of Service for each site. Any person we had listed as a "friend" on these two platforms was able to share and interact with this post of their own will. Moderators from the subreddit, /r/SampleSize, approved our post on Reddit. We used the same social media script in each post to maintain consistency.

The survey took participants an estimated 30 min and involved questions about the caregiver and child along with their nighttime sleep routines. It began with five basic demographic and personal questions, three of which were used to determine participant qualification. The demographic questions for the participants considered the number of children a participant currently had and were expecting, their age, relationship to the child, nights involved in the child's nighttime routine, and if they currently had a child between the ages of 1 month to 24 months. The three questions that were used to determine qualification for the survey concerned the participant's age, the child's age, and the involvement in the child's nighttime routine.

We used the following section of questions to determine which self-soothing devices the child currently used, with a specific focus on pacifiers. Of the 24 participants, 8 reported that their child fell asleep with a pacifier. The participants described other self-soothing items used or engaged in by young children including thumb-sucking, nursing through breastfeeding or with a bottle, stuffed animals, sound machines, blankets, and light machines. We also asked what caregiver soothing behaviors were used with young children, with another focus on swaddles and the swaddling technique. Of the 24 participants, 6 reported that they used a swaddle at bedtime with their child. Other caregiver soothing behaviors engaged in included verbal comforts (singing, hushing sounds), bottom or back pats (both in a crib or while the child was lying in a crib), rocking the child while holding, and breastfeeding. Participants were asked to specify if

their child typically needed caregiver intervention when aroused from sleep, with 11 participants reporting the need to intervene when their child was aroused and 13 participants reporting that they did not need to intervene.

We implemented the BISQ-R into our survey among other questions created by us in the subsequent section. The participants were asked to describe the time their child went to sleep and when they woke up, with the average hours slept by young children being 11.14 hours (*SD* = 1.43). The participants reported various responses as to how often their child had the same bedtime each night, which was clarified as the child falling asleep within 15 min of the same time each night. The most common response for this question was seven nights a week, followed by six and five nights a week equally. We asked our participants to describe how difficult bedtime was on a scale ranging from very easy to very difficult, with 7 participants reporting bedtime to be very easy, 10 as somewhat easy, 4 as neither easy nor difficult, and 3 as somewhat difficult. It was reported that children took anywhere from 5 to 45 min to fall asleep, with the average time to fall asleep being 20 min.

Nearly all the participants reported that their child awoke at least once in the night, with 87.5% experiencing at least one arousal from sleep. Children ranged greatly in the number of hours slept consistently from 3 hr to 12 hr, with the modes of sleep being 10.5 and 11 hr per night. The participants described their children's sleep on a scale ranging from very poor to very well, with the majority of participants describing their child's sleep as very well or well. They were also asked to describe their child's mood when they awoke in the morning on a scale of very happy to very fussy, with the majority of participants reporting their child's mood as very happy. We presented a debriefing statement explaining the true purpose of the study and the hypotheses we predicted to the participants once the study was completed.

Scoring for much of this survey was done through the BISQ-R Scoring System as many questions were taken from the BISQ-R survey itself (Sadeh et al., 2020). The BISQ-R is a young child sleep scoring system, which we used to examine arousal responses of the child with the engagement in caregiver soothing behaviors (Sadeh et al., 2020). Infant sleep is a subscale scored by the BISQ-R survey, and this is what we used to examine the correlation between children's sleep and pacifier usage. We also used the infant sleep subscale to examine the correlation between caregivers' use of swaddles or the swaddling technique with their children. The parent perception subscale and parent behavior subscale are two other subscales used in the BISQ-R Scoring System but were not used in our survey as they did not pertain to our hypotheses. We compiled our data into an Excel sheet to send off to the BISQ-R scoring team, who provided child sleep scores based on the infant sleep subscale and our data from the 24 participants.

We utilized IBM SPSS Statistics (Version 28) to conduct two independent samples *t*-test analyses to examine the relationship between pacifiers and sleep arousals, and swaddles and sleep arousals. To look further into these relationships, we used a chi-square analysis calculator to conduct a 2x2 chi-square examining sleep arousal with swaddle use. A Fisher's Exact Test was used to further examine pacifier usage in relation to sleep arousals in young children. We conducted an independent samples t-test to determine whether the number of times children experience sleep arousals differed based on whether they were pacifier users or not. The results indicated no statistical difference between pacifier users ($M = 1.67$, $SD = 1.54$) and non-users ($M = 1.38$, $SD = .52$), $t(18.85) = .69$, $p = .26$. The degrees of freedom for this test were adjusted because the two samples' variances were unequal.

We calculated the difference between sleep arousal and swaddling with a second independent *t*-test and found that the participants who reported their child used a swaddle (M = 1.71, SD = 1.04) compared to the participants who reported their child did not use a swaddle (M = 1.17, SD = .75) showed equal variances were assumed for this group, $t(21) = .89$, $p = .19$. These analyses suggest that a child's use of a pacifier or a caregiver's use of a swaddle with their child does not have any significant relationship to the arousals from sleep that a child experiences. These results contradict our proposed hypotheses that pacifier usage and swaddle usage would lead to a decrease in sleep arousals experienced by a child.

In addition to the independent *t*-tests conducted to examine the relationship between pacifier use and sleep arousal, a Fisher's exact test was conducted to further examine these variables. The number of children who aroused during sleep was compared between pacifier users and non-users. Our data revealed that 33.3% of pacifier users and 37.5% of non-pacifier users experienced sleep arousals whereas 0% of pacifier users and 12.5% of non-pacifier users experienced no sleep arousals. These differences were analyzed using the Fisher's exact test and revealed statistically non-significant differences between groups p = .24.

To look further into swaddle usage and sleep arousal in young children, the number of children who were aroused during sleep was compared for swaddle users and non-users. A chi-square test of independence was performed and revealed that 20.8% of swaddle users and 37.5% of non-swaddle users experienced sleep arousals whereas 4.17% of swaddle users and 12.5% of non-swaddle users experienced no sleep arousals. The relation between these variables was nonsignificant, $X^2(2, N = 18) = .16$, $p = .69$. There is no significant difference in sleep arousals between swaddle users and non-swaddle users.

Discussion

We hypothesized that pacifier and swaddle usage would lead to a decrease in sleep arousals experienced by children were not supported by our data collection and statistical analyses. Our hypotheses were developed based on personal observations and experiences with caring for young children, along with research into other studies examining self-soothing devices and caregiver soothing behaviors in relation to young children's sleep arousals. Despite our findings, studies suggest that there are many self-soothing devices and soothing techniques that may be helpful in reducing infant sleep arousal (Moon et al., 2011; Öztürk Dönmez & Bayik Temel, 2019). Though we were unable to find support for pacifiers decreasing sleep arousal in our study, there are benefits beyond this that they provide as well. The American Academy of Pediatrics supports pacifier usage, noting that benefits for pacifier usage extend beyond reducing sleep arousal, and offers security against SIDS for children in unfavorable sleep environments (Moon et al., 2011). Swaddling is also a useful technique for various reasons beyond the possibility of decreasing sleep arousals. This technique also reduces the startle reflex experienced by younger children and infants, and provides soothing feelings overall (Kelly et al., 2016).

A major study limitation was our accomplished participant sample size. The intended sample size for this study was 50 to 100 participants, and we achieved a sample size of 24 after forgoing unusable data from 9 participants. We set out to examine 50 to 100 participants as we felt this would be feasible and provide a sufficient amount of data to examine. We sought to reach this number of participants by posting our flyer at numerous physical locations and on various digital platforms. We were unable to reach our participant goal.

We also found that participants experienced confusion on what we recognized as a self-soothing behavior for a child versus a soothing technique or behavior employed by a caregiver. One example of this was breastfeeding, which participants specified as both a self-soothing behavior engaged in by their child and a soothing technique engaged in by the caregiver. We inquired which self-soothing item a participant's child used beyond a pacifier in our survey. Additionally, we asked what soothing behaviors they engaged in aside from swaddling. These were separate questions within which a pacifier was specified as a self-soothing item, and swaddling as a behavior used by caregivers. We suggest that breastfeeding be labeled as a soothing behavior that caregivers provide to their children for future studies examining this topic.

It is important to consider that we relied on participants self-reporting their child's experiences with sleep arousals as well. Much of the data provided by the participants were estimates of the child's experiences in sleep, including the arousals reported during sleep on average. As these were only estimates, it was difficult to control for significant accuracy in these measures. Improvements could be made here by altering the format of the study, such as examining sleeping children in person as opposed to using a self-report survey.

Another difficulty experienced in this study was the time limit. We initially believed we had sufficient time to send out our survey and collect data within two months, February and March. We were compelled to gather our data sooner than the end of March so we could have time to conduct our analyses. It also took longer than anticipated to receive study and material approval from outside sources. Our informational flyer was approved and posted in the middle of February, which was slightly later than expected. In conjunction with this issue, Lindenwood's Institutional Review Board approved our study at the end of February, so we could not start

collecting data until very late in February, or almost the beginning of March. With this in mind, we had an active study for roughly a month rather than closer to two months.

Future studies should consider examining sleep arousals in children as they relate to self-soothing devices and soothing behaviors in a physical setting if possible. This could include studying sleeping children in daycare or preschool environments, though this would likely alter the time of focus of sleep from night to daytime. This should not be considered a limit though, as examining different times of sleep beyond night could provide more crucial information to this area of research. It is important for future studies to aim for a higher participant sample size as well within the range of 50 to 100 participants at least. This could be achieved utilizing the methods we took with posting flyers and using social media sites but increasing the flyer and social media postings. Numerous forums and websites that cater to and focus on our distinct participant group are available on the internet and may be helpful in increasing participant size as well.

The implications of our findings suggest the need for further research in these areas, along with research into other self-soothing devices and soothing behaviors or techniques. It is crucial to gather information on sleeping habits not only in younger children, but in older children and adolescents as well. The application of this information is crucial for further insight into young children's sleep and how we can promote more healthful, effective sleep within children.

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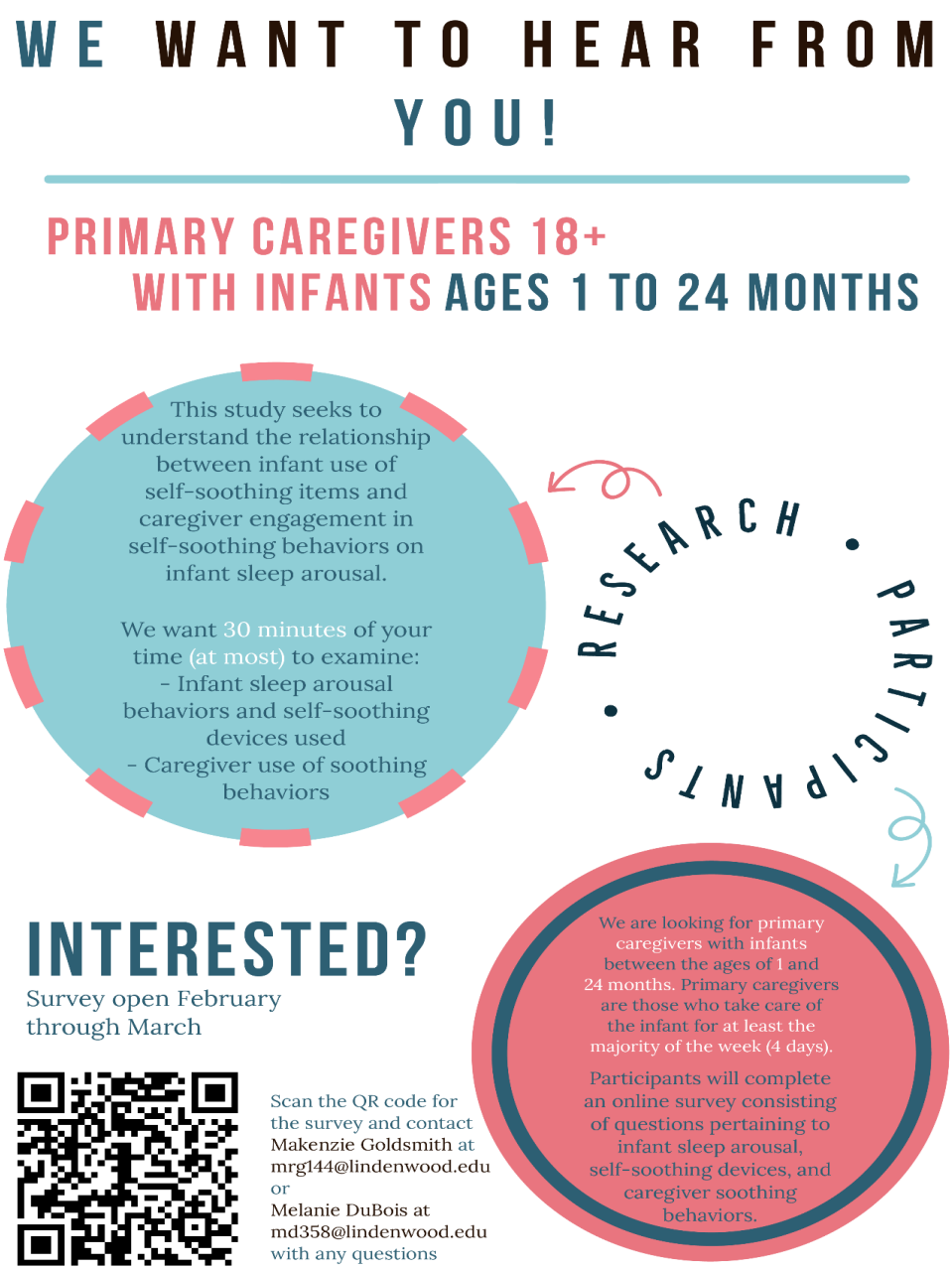
Appendix A

"Infant Sleep Arousal" Flyer



Appendix B

"Young Child Sleep Arousal" Survey

Q1 How many children do you currently have (including child(ren) currently pregnant with if applicable)? Please specify below:

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ Other, please specify: (6) _____

Q2 Are you at least 18 years old?

- ○ Yes (1)
- ○ No (2)

Q3 What is your age? Please specify below in years:

_____

Q4 What is your relationship with your child? Please specify below:

- ○ Mother (1)
- ○ Father (2)
- ○ Other, please specify: (3) _____

Q5 Do you have an infant currently within the age range of 1-24 months?

- ○ Yes (1)
- ○ No (2)

Q6 How many nights per week are you involved with your infant at bedtime and/or overnight?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)

Q7 If you have more than one infant between the age of 1-24 months, please only specify information pertaining to **one** infant for the following questions for the entirety of the survey.

Q8 Please specify the age of your infant in terms of weeks and/or months, written as "___ months, ___ weeks" (for example 4 months, 2 weeks) below:

_____

Q9 Does your infant usually fall asleep at bedtime with a pacifier?

- Yes (1)
- No (2)

Q10 If your infant uses any other self-soothing devices at bedtime, including but not limited to stuffed animals, blankets, and sound machines, please list them below:

_____

Q11 Is your infant usually swaddled at bedtime?

- Yes (1)
- No (2)

Q12 If you use any other soothing behaviors with your infant at bedtime, including but not limited to singing, facial rubs, rocking, and back/bottom pats, please list them below:

_____

Q13 When your infant wakes up, they often:

- ○ Return to sleep immediately or within a few minutes on their own (1)
- ○ Does not return to sleep on their own, needs caregiver intervention (2)

Q14 Please think about your infant's sleep during the past **two** weeks in answering the following questions.

Q15 What time do you usually start your infant's bedtime routine (start getting your infant ready for bed)? Please fill in your response below:

_____

Q16 What time do you usually put your infant to bed at night (lights out)? Please specify below:

_____

Q17 In a typical week, how often does your infant have the same bedtime (within 15 minutes)?

- ○ 1 (1)
- ○ 2 (2)
- ○ 3 (3)
- ○ 4 (4)
- ○ 5 (5)
- ○ 6 (6)
- ○ 7 (7)

Q18 Typically, how difficult is bedtime?

- ○ Very easy (1)
- ○ Somewhat easy (2)
- ○ Neither easy nor difficult (3)
- ○ Somewhat difficult (4)
- ○ Very difficult (5)

Q19 How long does it usually take your infant to fall asleep? Example: If you put your infant to bed at 6:30 p.m. and your infant falls asleep at 8:00 p.m., it takes 90 minutes for your infant to fall asleep. Please specify with the average number of minutes below:

_____

Q20 How many times does your infant usually wake during the night? Please specify below numerically:

_____

Q21 How much total time during the NIGHT is your infant usually awake (between when your infant goes to bed and wakes for the day)? Example: If your infant wakes up 2 times and is awake for about 15 minutes each time, your infant's total time spent awake is 30 minutes. Please specify with the average number of minutes below:

_____

Q22 What is the longest stretch of time that your infant is usually asleep during the NIGHT without waking up? Please specify below:

_____

Q23 What time does your infant usually wake up in the morning? Please specify below:

_____

Q24 How well does your infant usually sleep at night?

- ○ Very well (1)
- ○ Well (2)
- ○ Fairly well (3)
- ○ Poorly (4)
- ○ Very poorly (5)

Q25 How would you rate your infant's mood when he/she wakes up in the morning?

- ○ Very happy (1)
- ○ Somewhat happy (2)
- ○ Neutral (3)
- ○ Somewhat fussy (4)
- ○ Very fussy (5)

Perceptions of Happiness Through the Lens of Age and Gender

*Alea Farmer**

This paper intends to examine the possible relationship between demographic variables and perceptions of happiness. The demographic variables being studied are age and gender. Perceptions of happiness are measured by the Conceptions of Happiness Scale (Joshanloo, 2018) and represent one's overall idea of happiness. A survey was distributed to adults that were recruited via social media and flyer recruitment on the campus of Lindenwood University. The survey consisted of demographic questions as well as the Conceptions of Happiness Scale (Joshanloo, 2018) for participants to complete. Initial hypotheses predicted differences in perceptions of happiness amongst different age and gender groups. However, an inadequate amount of data collected resulted in an inability to conduct a one-way analysis of variance, as planned. Descriptive analyses were conducted and found a slightly higher sum of the scale scores for women and middle-aged participants in comparison to their counterparts. The study will remain open until adequate data is collected to continue data analysis and determine whether there are different in the perceptions of happiness of people of different age and gender groups.

Keywords: happiness, well-being, perceptions, age, gender, adults

As a society, it seems as though happiness is something that everyone longs for. The ultimate goal in life is to be happy, it seems. I want to focus on how people view their happiness. It is safe to say that the concept of happiness is subjective, meaning everyone has their own definition. However, there could be some patterns in the perceptions of happiness amongst various groups. That is what my research intends to uncover.

I think there could be differences in the way that people in different demographics perceive happiness. Specifically, I think there could be substantial differences in perceptions of happiness amongst people of different age groups and genders. In this society, age is often associated with various factors such as whether one works or goes to school, if one is married, if

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one can drink, etc. Therefore, age can have a huge impact on what someone's idea of happiness is. Gender and gender roles are very prominent in our society as well. The traditional gender roles of men and women have often been associated with how people chose jobs, how much money they make, their skills, and more. More recently, genders outside of man and woman have been brought to attention which has challenged the idea of binary gender roles. All these aspects could greatly influence how an individual defines happiness. That is why I want to research if there are differences within these demographics.

Mohanty (2014) focused on how people determine happiness. By collecting information regarding the age of the participants for better understanding of the responses, results revealed that positive attitude was an important determinant of happiness (Mohanty, 2014). In another study, Schimmel (2009) researched perceptions of happiness and found that factors such as health, income, education did not lead to increased happiness. This study also revealed that perceptions of happiness varied amongst people who were from different country rankings (Schimmel, 2009). Positive family relationships seem to be a predictor of happiness in both adults and children of families (Ramos et al., 2022). Morgan (2015) revealed that as people get older, they increasingly attend to positive information, so happiness may increase with age. Lastly, Lee et al. (2021) studied perceptions of happiness and found that the COVID-19 pandemic seems to have impacted students' perceptions of happiness. These are just some examples of what researchers have found that may relate to how people perceive happiness.

To investigate the relationship between perceptions of happiness and age and gender, I distributed a survey to adult participants in order to collect and analyze their responses. The survey consisted of demographic variables that identified ones age and gender. Then, participants completed the Conceptions of Happiness Scale (Joshanloo, 2018) which provided insight into

how the participants perceive happiness. I hypothesized that perceptions of happiness will vary amongst age and gender.

Method

Participants

A total of 19 participants completed the survey in its entirety. Participants were be composed of people of various age groups, genders, races, and occupations. Majority of the participants' ages fell within the young adulthood range (18-29 years old). This could have been due to a higher number of college students than non-college students because the flyer recruitment is being done on Lindenwood's campus. A total of four participants were middle aged (40-64 years old), and only one participant was considered an older adult (65 and older). A large majority of participants identified as female, with only three male-identifying participants completing the survey and one non-binary participant.

Materials and Procedure

Participants were recruited through flyers and social media. Materials needed for this recruitment consisted of physical flyers that were posted throughout multiple buildings on the campus of Lindenwood University. The same flyer was posted digitally on the social media platforms of Instagram and Twitter. See Appendix A for flyer details. This study met the ethical standards evaluated by the Lindenwood PPSRC and IRB.

This study was created and conducted using the online platform, Qualtrics. The first part of the survey was composed of two demographic questions that ask participants to identify their age and gender. The choice of age intervals included: young adulthood (18-29 years old), 30s (30-39 years old), middle age (40-64 years old), and older adulthood (65 and older). The choice of gender identity included: male, female, non-binary, other, and prefer not to say. The second

part of the survey prompts participants to complete the Conceptions of Happiness Scale (Joshanloo et al., 2018). The scale lists 19 factors in life that could contribute to one's happiness. Participants are asked to rate on a scale of 1-9 the importance that each of the listed factors are to their happiness. This scale concluded the survey. I used IBM SPSS Statistics (Version 28) to conduct descriptive data analyses. See Appendix B for more survey details.

Results

Due to the lack of abundance in participants of the survey, it was decided that a descriptive analysis would be the best option to analyze data. The survey will continue to stay open and one-way ANOVA tests will be conducted in the future upon the collection of an adequate amount of data. A total of 14 participants' ages fell within the young adult age interval (18-29 years old). There were only 4 middle-aged participants (40-64 years old) and 1 older adult (65 years old or older). A crosstabs descriptive analysis was conducted and the average sum of ratings from the Conceptions of Happiness Scale (Joshanloo, 2018) for young adult participants was found, M= 127.71, SD= 23.12. The same analysis was done for the middle-aged participants, and found the average sum was slightly higher, M= 133, SD= 5.83. No descriptive analysis could be conducted on the other age groups due to a lack of participants.

The same crosstabs descriptive analysis was conducted on the different genders and scale scores. The sum of scores for the participants that identified as female was slightly higher than its counterpart, M= 133.4, SD= 22.48. The average sum of scores of the male participants was lower, M= 121.67, SD= 26.08. Final results of the survey will be analyzed through one-way ANOVA tests in order to test the hypotheses.

Discussion

I believe that there was a low number of participants for several reasons. The amount of time that data was collected was a very short window, less than a month. This can make it challenging to collect adequate data, especially when a large range of ages of participants was needed. I also believe I needed additional flyer recruitment at public locations in which a wide variety of people go to, such as libraries or coffee shops. This would have increased the odds of reaching a more diverse audience when it comes to gender and age. Allowing the survey to stay open until an adequate amount of data is collected will provide a better understanding of the differences in perceptions of happiness, if any. I anticipate completing the study by the Fall of 2022. This will allow plenty of time to adjust recruitment methods and collect more data.

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Appendix A

Recruitment Flyer

Appendix B

Survey

Perceptions of Happiness Through the Lens of Age and Gender

Survey Research Information Sheet

You are being asked to participate in a survey conducted by Alea Farmer and Dr. Michiko Nohara-LeClair at Lindenwood University. We are doing this study to understand more about how people of all ages and genders perceive happiness. We want to determine if there are differences in what people of different ages and genders believe contributes to their happiness. This survey consists of two demographic questions that will identify your age and gender identity. Then you will be asked to complete the Conceptions of Happiness Scale (Joshanloo, 2016), which asks you to rate the level of importance of certain factors when it comes to your happiness. It will take about less than 10 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

A possible risk of this study is that participants may become distressed when reflecting on what factors in life are important to their happiness. This risk will be minimized by thoroughly informing you of the purpose of the study so that you will better understand why this risk is being posed. We will not collect any information that may identify you. A direct benefit of this study is that you will be able to contribute your data to this important research study! If you feel the need to contact the Lindenwood Student Counseling and Resource Center upon completing the survey, the office can be reached at 314-949-4522. Non-Lindenwood students should contact their nearest mental health practice if they feel the need to do so.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Alea Farmer, af760@lindenwood.edu

Dr. Michiko Nohara-LeClair, mnohara-leclair@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

Please click agree or disagree to continue with the survey.

- ○ Agree (1)
- ○ Disagree (2)

Skip To: End of Survey If Please click agree or disagree to continue with the survey. = Disagree

---

Q1 How old are you? Please choose the interval that includes you age.

- ○ Young adulthood (18-29 yrs) (1)
- ○ Thirties (30-39 yrs) (2)
- ○ Middle Age (40-64 yrs) (3)
- ○ Older adulthood (65 & older) (4)

Q2 What is you gender identity?

- ○ Male (1)
- ○ Female (2)
- ○ Non-binary (3)
- ○ Other: (4) _____
- ○ Prefer not to say (5)

Q3 Please use the sliders to indicate in your opinion how important each of the factors below is in determining your overall happiness, with 1 being not at all important and 9 being very important. A short definition or explanation of each factor is given.

	1 2 3 4 5 5 6 7 8 9
Freedom of Thought (Freedom to cultivate one's own ideas and abilities) ()	
Freedom of Action (Freedom to determine one's own actions) ()	
Stimulation (Excitement, novelty, new experiences, and change) ()	
Hedonism (Pleasure; Having a good time and fun) ()	
Achievement (Being successful and ambitious) ()	
Dominance (Power through excercising control over people; Being influential) ()	
Resources (Power through wealth and status) ()	
Face (Being dignified and respected by others; maintaining one's public image) ()	

Personal security (Safety; security and orderliness of one's immediate environment) ()	
Societal security (Safety and stability in the wider society; absence of external threats) ()	
Tradition (Maintaining and preserving cultural, family or religious traditions) ()	
Obeying the rules (Compliance with rules, laws, and formal obligations) ()	
Interpersonal conformity (Avoidance of upsetting, annoying, or harming other people) ()	
Humility (Being humble; Trying not to draw attention to oneself; Accepting one's portion in life) ()	
Dependability (Being reliable and trustworthy to those close to us) ()	
Being caring (Devotion to the welfare of those close to us; Helping those close to us) ()	

Concern for all people (Commitment to equality, justice, and protection of all people) ()	
Concern for nature (Preservation of the natural environment) ()	
Tolerance (Acceptance and understanding of those who are different from oneself) ()	

Thank you for completing this survey! Your responses will contribute to this important study on perceptions of happiness amongst adults of various age groups and genders. This study is important because it will provide a better understanding of what factors are important in determining one's happiness as well as differences in these perceptions between age and gender groups, if any. Employers, institutions, psychologists, individuals, and more could benefit from this information and use it in many important ways. I hypothesize that there will be a difference in the perception of happiness amongst adults of the different age and gender groups.

If you feel the need to contact the Lindenwood Student Counseling and Resource Center upon completing the survey, the office can be reached at 314-949-4522. Non-Lindenwood students should contact their nearest mental health practice if they feel the need to do so. If you are interested in learning the results of the overall study, please reach out to Alea Farmer at af760@lindenwood.edu, or Dr. Michiko Nohara-LeClair at mnohara-leclair@lindenwood.edu, and you will be sent the final results via email when they are available. Have a great day!

Social Media and Body Image: Is Body Image Linked to Social Media Usage?

*Sydnie Hoyt**

Social media is an ever-growing phenomenon, and while having the world at our fingertips proves convenient, it also has the potential to cause harm in the form of mental distress. Several studies have investigated whether the use of social media may be linked to body image issues. The present study further explored the potential link between social media and body image, specifically looking for a correlation between the number of hours spent on social media and intensity of body image concerns. Adult participants were recruited through the social media platforms of Instagram, Snapchat, Reddit, and Facebook. Participants completed a survey about their social media use, as well as about their feelings regarding body image through the Social Media Appearance Preoccupation Survey (SMAPS; Zimmer-Gembeck et al., 2021). The results of this study will be discussed along with their implications.

Keywords: social media, body image, appearance preoccupation, comparison, body dissatisfaction, media ideal

The use of social media has continued to grow and dominate societies around the world. With technological advancements and the introduction of social media, the ability to give and receive immediate commentary on posts is easier than ever. While it proves to be convenient, studies have found that this aspect of social media is less beneficial than it appears. Social media has been linked to appearance preoccupation and has led to personal comparison with peers and the desire to fit in (Zimmer-Gembeck et al., 2021). Due to the rise in social media usage and an increase in the observation of body image issues, several studies have been conducted to explore a potential link between the two.

The Pew Research Center conducted an online survey in early 2021 to explore social media usage. This study found that in 2021, 84% of adults between the ages of 18 and 29 say

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they use social media sites, similar to the 81% of adults ages 30 to 49. The population of

this study was limited to U.S. adults, who reported YouTube and Facebook as the most used social media sites. It was found that adults under the age of 30 use the platforms of Instagram, Snapchat, and TikTok more than any other sites. The data collected from this survey showed that, overall, 72% of Americans use social media sites (Auxier & Anderson, 2022).

A study designed to assess the degree to which people adopt the media ideal as their own was conducted on 7th grade girls. This study explored the potential relationships between social appearance comparison, body dissatisfaction, and media internalization in young girls (Rodgers et al., 2015). Participants completed a questionnaire to assess the degree to which they internalized the media ideal. Through the completion of this study, Rodgers et al. (2015) found that media-internalization is associated with social appearance comparison which can predict body dissatisfaction.

Another study conducted by Burnell et al. (2021) explored commentary on Instagram posts. Participant's 10 most recent Instagram posts were examined, and researchers considered both like count and the types of commentary left on each post. These variables were then correlated with body dissatisfaction. They found that positive comments on social media posts were more common than negative comments. The data suggested a positive correlation between likes, body surveillance, and appearance related social media consciousness. They found more likes were also linked with lower body dissatisfaction and BMI. A higher comment count positively correlated with appearance-contingent self-worth, body surveillance, and appearance-related social media consciousness (Burnell et al., 2021). However, this study failed to find any evidence that negative comments were linked to body image concerns.

Zimmer-Gembeck et al. (2021) conducted a study that included the creation of their own measure, the Social Media Appearance Preoccupation Survey (SMAPS). This study took the

results of the SMAPS measure (Zimmer-Gembeck et al., 2021), and correlated it with other questionnaires evaluating appearance anxiety symptoms and social media use. They found that both adolescents and young adults report high levels of appearance concerns, and that these issues may be on the rise due to social comparison because of social media. The SMAPS measure (Zimmer-Gembeck et al., 2021) includes the subscales of appearance-related online activity, appearance comparison, and online self-presentation. The data indicated that general social media usage correlated with all of three subscales of the SMAPS measure (Zimmer-Gembeck et al., 2021), which led to further understanding of why young social media users may experience higher levels of appearance related anxiety.

Sumter et al. (2021) observed a trend that most existing studies focused on the female viewpoint of body image and sought to change this. They conducted a study that assessed how men react to social media posts. In this study, male participants were randomly assigned to a condition in which they were shown either muscular non-sexualized images, muscular sexualized images, non-muscular sexualized images, non-muscular non-sexualized images, or the control group in which they were shown only landscape images. Results revealed only that participants' exposure to muscular non-sexualized Instagram posts can have a negative impact on body image. Researchers concluded that body image concerns are not as pronounced in men than women but indicate the importance of more research (Sumter et al., 2021).

The present study was conducted to further investigate a potential link between social media usage and body image concerns. The aim of this study was to build on studies previously conducted, while expanding data collection. My hypothesis was that there is a positive correlation between social media usage and body image concerns. I predicted that people who spend more time on social media will have higher levels of body image concerns, and those who

spent less time on social media will have lower levels of body image concerns. The collection of my data came from an online survey in which participants were asked to complete a survey assessing social media usage and body image concerns.

Method

Participants

Participants of this study were required to be 18 years of age or older. The survey began with three demographic questions, including age, gender identity, and race/ethnicity. Of the sample (n = 138), 105 were female, 32 were male, and 1 participant identified as non-binary. Age was asked as an open-ended question and answers varied from 18-75 years of age, 57% being 18-30 and 38% being 31 years and older. There were 7 participants who did not disclose their age. My sample was predominantly white or European American, with 129 people selecting this ethnicity. The remaining participants consisted of 3 who selected Hispanic, Latino, or Hispanic Origin, 3 who selected more than one ethnicity, categorized as multiracial, and 3 participants who selected other, none of which chose to specify.

My social media script was posted with a link to the online survey on Instagram, Snapchat, Reddit, and Facebook, all of which allowed such actions in cooperation of their terms and services. Anyone who was able to access the link was able to participate in the study; however, the consent statement stated that participants were to be 18 years of age or older. The intended sample for this study was 100-200 participants, and the final sample was 138. Participants received no compensation for their participation in this study. This study met the ethical standards and was evaluated and approved by the Lindenwood Institutional Review Board and the Lindenwood Psychology Program Scientific Review Committee.

Materials and Procedure

My survey was created on Qualtrics and consisted of a consent statement, 28 questions, and a thank you statement (see Appendix). Questions 1, 2, and 3 of the survey were demographic questions which asked participants to provide their age, gender, and ethnicity. These questions were followed up by 5 questions used to measure social media usage. The next 13 questions came from the original 18-question SMAPS (Zimmer-Gembeck et al., 2021) and were answered on a 5-point scale, where 1 is strongly disagree, and 5 is strongly agree. Higher SMAPS scores (Zimmer-Gembeck et al., 2021) indicated higher preoccupation with appearance in relation to social media and a lower score indicated lower preoccupation with appearance. These questions were followed by 4 questions regarding the frequency of body image interference in everyday activities.

Questions 22 and 23 asked about frequency of body image issues, or how often participants find themselves thinking or worrying about their physical appearance. Question 24 asked participants about the ways in which concerns about physical appearance has interfered with everyday life, if at all. Question 25 asked about experiences outside of social media that have led participants to worry about their body image. After this question, those who reported they do not use social media were finished with the survey and redirected to the thank you statement. Those who reported using social media were asked three more questions about their body image in relation to social media (see Appendix). After the completion of the survey, participants were taken to the thank you statement where they were thanked for their participation and provided contact information in case of any questions.

Results

My hypothesis was that there is a positive correlation between hours on social media and body image. The originally 174 participant sample was reduced to a final sample of 138 due to several data having to be excluded. A total of 36 responses were excluded from the final sample, as some participants reported being under the age of 18, others did not answer the question of "how many hours do you spend on social media," and some left the survey incomplete, which led to the disqualification of their data. A correlational analysis was done to evaluate a possible correlation between hours spent on social media and SMAPS (Zimmer-Gembeck et al., 2021) on IBM SPSS Statistics (Version 28). Only a weak positive correlation was found between these two variables $r(136) = .220$, $p < .01$.

Other qualitative analyses were conducted to explore what people were concerned about in terms of body image, outside experiences that have contributed to body image concerns, and how these concerns interfere with participants' daily lives. Not all participants chose to answer these open-ended questions. Question 24 of my survey asked participants to disclose the ways in which concerns of physical appearance has interfered with their lives. The most common answer to this question involved clothing choices, with 19 participants mentioning clothing in their answers. Many participants went on to say they change their outfits several times before finding one they feel confident and comfortable in and talked about how shopping has become a difficult task simply because they do not like how clothes fit their body. Other common answers to this question included mental health, with 11 participants mentioning this, eating habits, with 9 participants mentioning this, and social interactions, which 14 participants mentioning this. Several participants reported starving themselves or not eating as much as they should to emulate the body they feel is portrayed as "ideal" by the media.

Question 25 of my survey asked about experiences outside of social media that have affected body image concerns. The most common answer included mention of commentary by peers. A total of 18 participants mentioned how people in their lives, some close to them, have made comments concerning their body that has led to preoccupation with their appearance. Another common answer was the mention of social standards. A total of 10 participants alluded to the fact they feel pressured to fit societies standards to fit in and feel confident in themselves. Another popular answer was participant's own criticisms. Fourteen participants reported that simply looking in the mirror has had negative effects on their body image. Other answers included relationships, health, and shopping.

Participants were also asked to describe what they believe the media promotes as the "ideal" body type for their age and gender identity. Despite age or gender identity, the most common answer was "fit," with "skinny" or "thin" close behind, with a total of 57 participants mentioning one of these. Other answers included "strong," "athletic," and "healthy." Some participants took it a step further, describing specific hair and eye colors, one even including the names of specific celebrities they felt fit the media ideal.

Discussion

While my hypothesis of a positive correlation between social media usage and SMAPS scores (Zimmer-Gembeck et al., 2021) was supported, I expected a stronger correlation between the two. This could be due to the smaller sample size, as opposed to other studies on this topic. My findings further supported data found in other studies such as Rodgers et al. (2015) and Zimmer-Gembeck et al. (2021), both of which sought to explore correlations between social media and body image.

Undergraduate Psychology Research Methods Journal, Vol. 2, Iss. 1 [2022], Art. 9

My findings were also similar to Sumter et al.'s (2021) research as I found body image concerns were more prevalent in those who identified as female, as opposed to those who identified as male. My data showed also a weak positive correlation between hours spent on social media and SMAPS (Zimmer-Gembeck et al., 2021) for the female participants, $r(103) = .277$, $p < .01$. No correlation was shown between the two variables for the male participants in my sample $r(30) = -.066$, $p > .01$. These gender differences could be explained by the differences in the number of female and male participants within this sample. The final sample was predominantly female, limiting the possibility of making direct comparisons between the female and male genders. That said, Sumter et al., (2015) found that even in a fully male sample, preoccupation with body image regarding social media was not as predominant as other studies have found with female social media users. Zimmer-Gembeck et al., (2021) also noted a gender difference, stating women reported higher body preoccupation than men. Future research can be used to further explore gender differences within social media. This may include more in-depth studies, through which types of social media consumed and gender differences within the consumption of media may be explored. This further exploration can lead to a deeper understanding of social media as a whole and lead to greater knowledge of what social media usage entails.

A limitation of this study included time. This study was to be conducted throughout the length of one academic semester, including the creation of the study. In conducting a similar study, allowing a longer time slot and the opportunity to reach a larger sample would be beneficial and allow for more data collection. Another limitation was the way in which participants were recruited. In recruiting more participants outside of social media, a greater understanding of how social media specifically correlates with body image issues may have been

found. While a few participants in the sample of this study reported not using social media, their incomplete surveys led to the disqualification of their data, therefore not allowing analyses to be conducted on these participants or differences to be found.

Implications of this study include further understanding of the correlation between social media and body image. In finding a positive correlation between the two variables, social media users can recognize how their consumption of media may be linked to body image issues they may have. The results of this study call for further discussion of the potential dangers of social media and its relation to mental health and body image. The continuation of this study can be taken in several different directions, including the further exploration of gender differences, or the finding of other correlations between social media and mental health. Future research can include a more in-depth study in which different types of disorders may be correlated with social media usage. These disorders could include eating disorders, depression, and anxiety. Other studies could focus on specific social media platforms and determine whether there are differences in consumption of media and internalization of the media ideal between the different platforms. Studies could also expand this study in recruiting participants outside of social media and reaching a greater audience and participants outside of social media. This expanded sample can be used to further understand the difference in body image issues between social media users and non-social media users.

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Appendix

Survey

Social Media and Body Image

Start of Block: Block 1

Informed Consent Statement

You are being asked to participate in a survey conducted by Sydnie Hoyt under the guidance of Dr. Michiko Nohara-LeClair at Lindenwood University. I am doing this study to investigate a potential link between social media usage and negative experiences with body image. For this study, participants will be asked a series of questions regarding social media usage, as well as questions regarding experiences with their own body image. It will take no more than 20 minutes to complete this survey.

Your participation is voluntary. You may choose not to participate or withdraw at any time by simply not completing the survey or closing the browser window.

There are no risks from participating in this project. I will not collect any information that may identify you. There are no direct benefits for you participating in this study.

WHO CAN I CONTACT WITH QUESTIONS?

If you have concerns or complaints about this project, please use the following contact information:

Sydnie Hoyt: snh366@lindenwood.edu

Dr. Michiko Nohara-LeClair: mnohara-leclair@lindenwood.edu

If you have questions about your rights as a participant or concerns about the project and wish to talk to someone outside the research team, you can contact Michael Leary (Director - Institutional Review Board) at 636-949-4730 or mleary@lindenwood.edu.

By clicking the link below, I confirm that I have read this form and decided that I will participate in the project described above. I understand the purpose of the study, what I will be required to do, and the risks involved. I understand that I can discontinue participation at any time by closing the survey browser. My consent also indicates that I am at least 18 years of age.

You can withdraw from this study at any time by simply closing the browser window. Please feel free to print a copy of this information sheet.

I have read and understand the above consent form and am willing to participate in this study
Agree (1)

Do Not Agree (2)

Skip To: End of Survey If I have read and understand the above consent form and am willing to participate in this study = Do Not Agree

End of Block: Block 1

Start of Block: Demographics

Q1 What is your age?

_____

Q2 Which gender identity to you best identify with?

Male (1)

Female (2)

Other, please specify if comfortable (3)
_____

Prefer not to say (4)

Q3 What race/ethnicity do you identify with? Please select all that apply.

White or European American (1)

Black or African American (2)

Asian (3)

American Indian or Native American (4)

Hispanic, Latino, or Hispanic Origin (5)

Alaskan Native (6)

Other, please specify (7) _____

End of Block: Demographics

Start of Block: Social media usage

Q4 Do you use social media?

Yes (1)

No (2)

Skip To: End of Block If Do you use social media? = No

Q5 If yes, which platforms do you use? Please select all that apply.

Snapchat (1)

Instagram (2)

Facebook (3)

TikTok (4)

YouTube (5)

Others, please specify (6) _____

Q6 Approximately how many hours are spent on a social media platform per day?

_____

Q7 How old were you when you got your first social media account?

_____

Q8 On what platform was your first social media account?

Snapchat (1)

Instagram (2)

Facebook (3)

TikTok (4)

YouTube (5)

Other, please specify (6) _____

End of Block: Social media usage

Start of Block: Body Image interference

Q9 Approximately how often do you think about or worry about your physical appearance per day?

1- Never (1)

2- Sometimes (2)

3- Often (3)

4- Always (4)

Q10 Does the concern of your physical appearance interfere with your everyday life?

1- Never (1)

2- Sometimes (2)

3- Often (3)

4- Always (4)

Skip To: Q14 If Does the concern of your physical appearance interfere with your everyday life? = 1- Never

Q11 Please explain the ways in which concern of your physical appearance has interfered with your everyday life.

_____

Q12 Outside social media, what experiences or thoughts have lead you to worry about your physical appearance?

_____

End of Block: Body Image interference

Start of Block: SMAPS

Q13 Please answer the following questions on a scale of 1-5, 1 being strongly disagree and 5 being strongly agree. These data will be used to measure body image in relation to social media.

Q14 I prefer to only upload photos of myself to social media where I look physically attractive.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q15 I prefer to only upload photos of myself to social media where I look fit and healthy.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q16 When others upload photos of me to social media, I focus on whether I looked good.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q17 I check to see who is commenting on, liking, or viewing photos of me or my body on social media.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q18 When others upload photos of me to social media, I get upset when I don't look my best.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q19 I approve photos of myself before anyone can tag them.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q20 When I upload photos of myself, I usually use filters or alter/change them to make myself look better.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q21 I am often dissatisfied with my weight or looks in my social media pictures.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q22 I feel inadequate in appearance compared to my friends on social media.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q23 I feel like I want to change my diet after viewing other people's pictures online.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q24 How I feel about my body and appearance is influenced by other people's social media pictures.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q25 Seeing pictures of others tends to make me feel down on myself.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)

Q26 I feel like I want to change my exercise or fitness level after viewing pictures online.

1- strongly disagree (1)

2- disagree (2)

3- neutral (3)

4- agree (4)

5- strongly agree (5)
End of Block: SMAPS

Start of Block: Social Media and Body Image

Q27 How often do you catch yourself comparing your own appearance to those you see on social media?

1- Never (1)

2- Sometimes (2)

3- Often (3)

4- Always (4)

Q28 According to what is seen and advertised on social media, what would you describe as the "ideal" body type for someone of your age and gender identity?

_____

Q29 On a scale of 1-10, 1 being not at all and 10 being a strong influence, how much do you believe your social media usage influences the way in which you see yourself?

1 (1)

2 (2)

3 (3)

4 (4)

5 (5)

6 (6)

7 (7)

8 (8)

9 (9)

10 (10)

End of Block Social Media and Body Image

Guilty by Reason of Vanity?

The Relationship Between Jurors' Socioeconomic Status and Trial Outcome

*Zoë Sweaney**

The following paper summarizes the implications, processes, and preliminary findings from a research study conducted by an undergraduate psychology student at Lindenwood University. The study experimentally investigated the relationship between a juror's socioeconomic status (SES) and the likelihood that they would choose to convict a randomly selected defendant. It was hypothesized that a participant of a higher SES would be more likely to convict a defendant than would a participant of a lower SES. To investigate the validity of this hypothesis, participants (N=13) posing as jurors completed an online survey in which they were tasked with evaluating the details of 5 different court cases that had been erased of any identifiable and/or demographic information about the defendant (and victim(s), if applicable) before being asked to submit their final verdict on the case (guilty or not guilty). Data collected from this activity was inputted into the statistical analysis software program IBM SPSS Statistics (Version 28), alongside the jurors' measures of SES, which had been totaled based on participants' responses to a series of demographic questions, in order to calculate the Pearson's r correlation statistic for the two variables. SES scores and frequency of jury conviction were found to be positively correlated ($r(11) = .04$, $p = .44$), but the findings were not of any statistical significance. Explanations for the study's lacking statistical power and recommendations for improving the statistical power of future research is discussed.

Keywords: jury, juror, SES, defendant, conviction, trial

Wrongful convictions are a violation of the social contract between the state and its citizens, defined by U.S. law as a miscarriage of justice. Yet in the same country, according to the National Registry of Exonerations' annual report in 2019, between 2-10% of convicted prisoners are innocent (Walsh et al., 2017). As the world's leader in incarceration, with a prison population 500 times that of what it was four decades ago (Bureau of Justice Statistics), this means that there are anywhere from 46,000 to 230,000 innocent people in U.S. prisons.

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Mass incarceration is a systemic issue, and wrongful convictions can be viewed as part of a structural problem as well—official misconduct accounts for 31% of wrongfully convicted murder exonerations (Clarke, 2020). Wrongful convictions can also occur on a micro-level, resulting from a variety of factors, such as eyewitness misidentification, misapplication of forensic evidence, and juror bias. The following paper is a study of the last item — specifically the relationship between jurors' SES and trial outcome.

Jury behavior research is not a new concept, and there is an abundance of existing research on jury behavior, including juror bias. The intended audience of that research, however, is typically limited to practicing lawyers who would be interested in knowing what jurors are influenced by and how they can best be persuaded. In these contexts, "juror bias" refers to the life experiences that all jurors bring to court and how those experiences affect their perception of what is a just verdict. For a lawyer, jury behavior research can be helpful in learning how to identify and understand the combined biases of a jury, which then allows them to more effectively present their case in a manner that counteracts or avoids the wide range of biases that a full jury presents. Some of these biases, however, are relevant enough that they can disqualify an individual for serving as a juror on a specific case. For the purposes of this study, however, the interest was in identifying factors or unconscious biases that are not screened for during jury selection that might be predictive of a juror's final decision — before they have heard arguments from either legal team or even stepped into the courtroom. Is it possible that some people are just more inclined to side with the prosecution than others, regardless of any case details? If so, what variables might influence this inclination? Is it possible that a juror's SES background could be predictive of this willingness to be persuaded of a defendant's guilt? The relationship between

SES and crime has long been studied, so it only makes sense for us to have a clear understanding of the relationship between SES and attitudes towards crime.

Despite the limitations of its target audience, there is a plethora of existing research on the relationship between the SES of the defendant and the jury's final verdict and sentencing recommendations that suggests a positive relationship between the SES of the defendant and perceived guilt. For example, a 2013 research study examining the effect of immigration status, ethnicity, and SES of defendants on juror bias found that undocumented Mexican defendants of a low SES were not only found guilty more often than their wealthier, European American peers, but they were also considered to be more culpable for their crimes and given more severe sentences (Espinoza et al., 2015). Similar results had been produced by a mock trial study examining European American bias towards Mexican Americans (Willis-Esqueda et al., 2008). Both studies used subtle bias theories, such as aversive racism, to explain these discrepancies and recommended that further research be conducted to address these biases in specific contexts. Another study involving simulated jurors judging a defendant's guilt while manipulating the defendants SES and racial identity found that defendants of a higher SES were typically found to be less guilty and recommended for shorter sentences than defendants of a lower SES, regardless of defendants' race (Gleason & Harris, 1975). One of the few existing studies that considered both juror and defendant attributes in its design suggests that there is a relationship between trial outcome and the amount of discrepancy between juror and defendant occupational status, with high discrepancy being predictive of a conviction (Adler, 1973). In other words, if the defendant is of a low SES, then a juror with a high SES is much more likely to find the defendant guilty than a juror with a SES that is a closer match to that of the defendants.

After reviewing the existing literature, I made a note of the lack of research that isolated SES as a variable, as well as the lack of research concerned with attributes of the juror and their effect on final verdicts — almost all existing research studies were multi-variable and concerned with the qualities of the defendant, not the juror(s). Despite the limited existing research isolating SES as a variable, the research that does exist is supportive of a positive relationship between SES of the juror and a guilty verdict. Thus, I hypothesized that in my own study, there would be a statistically significant positive relationship between juror SES and conviction frequency (i.e., the higher a "juror's" socioeconomic index score, the more convictions they will have made).

In line with the theory that high SES is a positive predictor of a guilty verdict, high SES is also one of the many demographic traits that are considered to characterize political conservatism, a philosophy that focuses on maintaining law and order (Reed & Reed, 1977). People who identify with this philosophy consider incarceration to be a vital and functioning part of our justice system and are therefore more likely to support convictions and harsh sentences, regardless of the defendant's identity or quantity/quality of prosecuting evidence. Additionally, I considered the bail bond system and other fee-based components of the U.S. justice system and predicted that people from lower SES backgrounds would be more hesitant to convict a defendant of a crime than people from higher SES backgrounds, simply because the latter group would be more likely to be desensitized to the harsh reality of our justice system. Participants were presented with details from hypothetical court cases to deliberate on and submit a verdict for, which was correlated with their calculated socioeconomic index score during data analysis.

Method

Participants

At the conclusion of data collection, 16 participants had taken my survey, but I was only able to preserve and analyze the complete data profile of 13 of those participants (2 participants failed to complete the entire survey and 1 participant requested the withdrawal of their data at the completion of the survey). I had a majority female participant pool, with 9 of my participants identifying as a woman, 3 participants identifying as a man, and 1 participant identifying as non-binary. The majority of my participant pool also identified as White or European American, with only 2 participants identifying with a race/ethnicity not listed in the survey and just 1 participant identifying as Hispanic and/or Latino. In contrast with its lack of gender and racial diversity, my participant pool actually represented a fairly wide range of ages, with the majority of participants either falling in the 18-24 or 55-64 age range. To my surprise, young to middle-aged adults were the most underrepresented in my sample population, and I even ended up with more participants in the 65+ age range than I did both the 25-34 and 35-44 age ranges combined.

All participants were required to meet the same eligibility criteria the U.S. federal government requires all jurors to meet before they were able to participate in the study: at least 18 years of age, U.S. citizen, literate and fluent in the English language, and no felony on record. I used this same exclusion criterion when identifying potential participants so that the characteristics of my study sample would accurately mimic those of the population. I knew that my eligibility criteria narrowed my potential participant pool by a large margin, so when determining how I would recruit participants for my study, it was important that I kept in mind my target audience and the ways that they are best advertised to. I chose to use Facebook and Instagram to connect with potential participants, so that I could reach a wide range of individuals

who met my inclusion criteria and also varied in SES. This was the key determining factor in my decision to use social media for participant recruitment because I knew that if the majority of my participants were recruited locally or from the same organization/institution, it is less likely that there would be enough variation in SES, which would impede my ability to determine the direction and strength of its relationship to the dependent variable. For these reasons, I used my personal accounts on Facebook and Instagram to share the participant recruitment script that I had developed with hundreds of eligible individuals. I did not have the initial success I was anticipating with participant recruitment through Facebook and Instagram, so I also shared the survey link on the subreddit *r/SampleSize* about two weeks after the survey was first published, which resulted in a very minimal boost in engagements. Plausible explanations for the size and demographic characteristics of my sample population, their possible effect(s) on participant data, and suggestions for ways to expand and diversify participant pools in future research are all addressed in the discussion section of this paper.

Materials & Procedure

To evaluate my initial hypothesis, that jurors of a higher SES are more likely to find a defendant guilty than jurors of a lower SES, I published a Qualtrics survey that participants could complete anonymously. The first section of the survey included the information sheet and informed consent documents, which briefed participants about the purpose of the study that they were about to participate in and what would be asked of them throughout their participation. After reading the information sheet, the informed consent document prompted participants to affirm that they had read and understood the information presented to them and were voluntarily choosing to partake in this study. This confirmation of informed consent allowed participants to

move on to the next section of the study, where they were introduced to the five court cases (Appendix A) that they would be asked to evaluate.

In my development of the court cases, it was my aim to create strong cases for both the defense and prosecution so that one side was not clearly telling the "truth" or following a more logical line of thinking than the other, forcing participants to think more critically about their decision, specifically their confidence in convicting a defendant. To maintain this balance between the defense and prosecution, each of the five court cases I created for the survey had three pieces of evidence in support of the prosecution and three pieces of evidence in support of the defense. The survey presented the cases in the same singular order each time, requiring participants to submit their decision on the current case before moving onto the next. Attempts were made to randomize the order cases were presented to participants to avoid the risk of order bias, but ultimately technical difficulties made this impractical (the possible effect of order bias on participant data is further considered in the discussion section). Details of the court cases had been erased of any identifiable information about the defendant to control for extraneous variables, such as personal prejudices towards gender or race, and isolate my independent variable. The cases also ranged in severity from petty theft and insurance fraud to aggravated assault and murder to avoid triggering crime-specific biases amongst participants. Participants were given 2 min to read over and study each court case before the survey auto advanced to the next page where they were prompted to disclose whether they had found the defendant guilty or not guilty.

During this portion of the survey, participants were deceived as to why they were being asked to complete this task. To motivate participants to give serious consideration to the case details and think critically about their role as a juror before submitting their final decision, I told

Undergraduate Psychology Research Methods Journal, Vol. 2, Iss. 1 [2022], Art. 9

participants that they were being asked to reevaluate actual court cases whose verdicts had very recently been affirmed or negated by new DNA evidence. I informed the participants that the purpose of this study was to find out how their decisions might differ from the original jury's decision if all identifiable demographic characteristics about a defendant were removed from the case. Participants were deceived in this manner so that they would be under the impression that science had already determined the defendant to be guilty or not guilty and that they, as participants, were being evaluated on their ability to correctly identify the correct verdict for each case.

After participants submitted all five verdicts, they were directed to begin the final portion of the survey in which they responded to a variety of demographic questions, including questions about level of education attained and household income, which I then used to assess the participants' SES (Appendix B). Unfortunately, social scientists and economists have yet been able to reach a consensus about universal indicators of SES, especially because of the abundance of cross-cultural variation, which made it difficult to have full confidence in however I chose to operationally define SES. After conducting a brief literature review of the development, implementation, and success rates of some of the most popular socioeconomic index equations with a faculty professor, we concluded that a true, comprehensive measure of SES could not be calculated without a tenfold increase in the survey's length, complexity, and privacy risk. In order to increase the survey's appeal to potential participants, I elected to develop a simplified measure of SES, in which I isolated the two components of SES that I thought were the most relevant to the measurement of my dependent variable. Because I believed that level of attained education and average household income were the components of SES that were the most predicative of attitudes towards crime and punishment — specifically one's natural inclination to

side with the prosecutor or non-guilty party — and would therefore have the biggest impact on the measurement of my dependent variable, I used measurements of both to operationally define SES in my study. I also asked other demographic questions to keep the identity of my independent variable disguised until the survey was over. This allowed me the opportunity to make note of any patterns I saw amongst other demographic variables and their relationship to the juror's final decision, so that I could provide a more comprehensive description of my sample.

Completion of the demographic portion of the survey brought participants to a debriefing letter, informing them of their deception during the survey and revealing to them the true intentions behind my study. Participants were given the option to withdraw their data from consideration once being informed of this deception, or they could approve of their data's usage and exit the survey.

Complete participant data that was not withdrawn from consideration by the participant (applicable to 13 out of 16 participants) were then prepared for data analysis. The number of guilty verdicts each juror voted for was totaled and then submitted for correlational analysis in IBM SPSS Statistics (Version 28) as the dependent variable alongside its corresponding quasi-independent variable (SES of the juror). This score was calculated for each individual participant based on their responses to the questions in the demographic portion of the survey inquiring about participants' level of attained education and average household income. I assigned scores to all possible responses, correlating larger numbers with responses that are indicative of a higher SES and smaller numbers with responses that are indicative of a lower SES. For example, participants were instructed to identify the income range that was the most accurate description of their average household income, with the lowest range ($0-$24,999) assigned a corresponding

score of zero and the highest range ($250,000+) assigned a corresponding score of ten. This same process was repeated with questions about attained education, with a score of zero on one end of the spectrum to represent little to no formal education, and a score of nine on the other end to indicate completion of a Doctoral program. Participants' scores for average household income and level of attained education were combined and represented each participants' socioeconomic index score (a measure of SES), which served as my independent variable. IBM SPSS Statistics (Version 28) was used to calculate the Pearson's *r* correlation statistic for the data set by measuring the frequency of guilty verdicts in each juror against their SES score to determine the direction and strength of this relationship (which I hypothesized to be positive and statistically significant).

Results

An alpha level of $p < .05$ was used for all statistical tests conducted. Statistical analysis (Appendix C) revealed that amongst my sample population, the correlation between SES of the juror and trial outcome was not of statistical significance, despite expressing a slight positive trend, $r(11) = .04$, $p = .44$. As predicted in my initial hypothesis, my data analysis did reflect an increased tendency amongst jurors of a higher SES background to convict a defendant in comparison to that of their peers of a lower SES background, but the correlation coefficient's corresponding *p*-value indicates that this relationship is not statistically significant enough to report. Interested to see if one of the study's two measured components of SES had a stronger correlation to trial outcome than the other, I isolated both components (level of education attained and average household income) as independent variables and calculated separate Pearson's *r* correlation statistics for the relationship between education and trial outcome ($r(11) = .02$, $p = .47$) and the relationship between income and trial outcome ($r(11) = .05$, $p = .43$.

While the three different measures of SES were relatively supportive of a weak, positive relationship between juror SES and verdict frequency, I found it important to note which measure of SES was most strongly correlated to verdict frequency (income as an isolated variable) and which measure of SES had the weakest relationship to verdict frequency (education as an isolated variable). The possible applications of this finding for future research in operationally defining SES are discussed in the following section.

While the above statistical analyses evaluating the relationship between my independent and dependent variable should be regarded as this study's key finding, statistical and descriptive analyses uncovered other relevant patterns in my data that were not addressed in my initial hypothesis. Another Pearson's *r* correlational analysis found age of the juror to be more strongly related to verdict frequency than any of the three measures of SES ($r(11) = -.2$, $p = .26$), despite still failing to meet standards for statistical significance. Aside from the strength of the relationship, I was also surprised by its direction, which indicated that younger jurors were more likely to convict a defendant than older jurors, a conclusion opposite that of what I was expecting. Correlational analyses were not conducted for the other two demographic variables (race/ethnicity and gender identity), as age was the only demographic variable that produced variation amongst my sample population of enough significance for a pattern to be visible.

The defendant who received the smallest number of guilty convictions was Defendant 1, who was accused of insurance fraud, and the defendant who received the largest number of guilty convictions was Defendant 5, who was accused of first-degree assault. While this data appears to be supportive of a positive relationship between severity of the accused crime and likelihood of conviction, it could also be indicative of order bias amongst participants. Other

Undergraduate Psychology Research Methods Journal, Vol. 2, Iss. 1 [2022], Art. 9

threats to the internal and external validity are discussed in the following section, as well as recommendations for future research in avoiding those same threats.

Discussion

Despite its inadvertent discovery of the many relevant findings shared above, the data produced by my study design did not perform well enough on a significance test for me to claim that it was supportive of my initial hypothesis that juror SES and trial outcome are positively related. I believe this to be a reflection, however, of poor study design and execution, rather than indicative of a true lack of correlation between the two variables. All statistical analyses conducted produced fairly large *p*-values, indicating that my study design lacked statistical power, reducing its ability to detect a true correlation and increasing its susceptibility to distortion by systematic and random error. Statistical power is mainly determined by significance level, sample size, and effect size; suggestions for improving the latter two statistics follow.

Because my participant recruitment tactics were not anywhere near successful in reaching my initial recruitment goal of 50 participants, and I was unable to collect data from a wide, diverse sample population that was representative of the true population, I was not surprised by the performance of the data on significance tests. The same study design conducted with a larger sample population would automatically have more statistical power than the data from my participants, solely because it would have produced more data. Size was not the only problem with my sample population, however, as the large majority of my participants were White or European American females. In order to ensure the external validity of results and maximize participant variation in SES, future research should be conducted with a much large sample size.

Increasing the study's effect size, or the effect of the independent variable on the measured dependent variable, would also increase its statistical power. While SES is only a

quasi-independent variable, and I am unable to manipulate it in experimentation, I am able to manipulate how it is measured. If a more accurate operational definition of SES as it relates to upbringing were to be developed, it would likely have a positive impact on the effect size of the study. As I discussed in my literature review, however, no one measure or equation has been established as a universally accurate calculation of SES, so finding the perfect operational definition will require a lot of experimentation. For example, although I used a combination measure of education and income in my official statistical analysis, I did discover that income appeared to be more strongly related to trial outcome than education was, suggesting that future research may benefit from isolating income as the key component of SES as it relates to the dependent variable.

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Appendix A

Qualtrics Survey Court Cases

Q3 During this portion of the survey, you will be asked to pose as an individual juror to reevaluate 5 past U.S. court cases whose verdicts have all been recently affirmed or negated by new DNA/forensic evidence. You may notice that all details regarding the identity of the defendants (and victims, if applicable) have been removed from the text. Researchers are interested in seeing how your decisions on the cases compare to the original jury decisions, if the identity of the defendant (and victim, if applicable) is unknown to you. Can you correctly identify the appropriate verdict for all 5 cases? You will be given two minutes to read and study the details of each case before you will be given the option to submit your final decision on the case (guilty or not guilty) and move on to the next question. You will repeat this process for all 5 cases.

End of Block: Juror tasks directions block

Start of Block: Juror tasks activity 1

Q4 Defendant 1 was accused by their insurance company of staging a robbery at their locally owned business in order to file a fraudulent insurance claim. Defendant 1 claims that according to the store manager who first discovered the robbery, over $7,000 worth of merchandise was stolen sometime between 8:00 PM and 6:00 AM on the night in question. At the time however, Defendant 1 was out of town on a family vacation and could not be reached until their return 4 days later, which would explain why the insurance claim was filed almost a week after the initial incident. The only security camera on the premise is located above the front door and only records activity occurring outside the building—Defendant 1 claims they installed this camera 3 months ago after the strip mall's parking lot was targeted by a series of car burglaries. The security footage was reviewed, but it had not recorded any suspicious activity or persons hanging around/entering the building the night of the incident. The only other entrance is located on the back side of the building. Defendant 1 claims that they possess the sole key to unlock the back door and employees only have copies of the key to the front door. Defendant 1, however, cannot confirm the back door key's whereabouts that night because they had lost it a week prior to their vacation, and they did not have a new copy made until well after the incident.

You have found Defendant 1...

- ○ Guilty (1)
- ○ Not guilty (2)

Q5 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Juror tasks activity 1

Start of Block: Juror tasks activity 2

Q5 Defendant 2 was accused of murdering their next-door neighbor after other neighbors in the building reported that they had heard the two arguing the night before the neighbor was found deceased by their part-time caretaker. The cause of death was determined to be blunt force head trauma and based on the location and position their body was found in, forensic experts believed that the neighbor had hit their head on the corner of the dining room table in the process of falling to the ground. The neighbor has had a history of falling ever since a young cerebellar stroke 5 years ago, but a new form of physical therapy has recently made major improvements to their balance, and family members claim that they hadn't had a serious fall in over 6 months. The neighbors' caretaker told the police that their client had had a recent disagreement with Defendant 2 over a property in the adjacent condo building they were both interested in purchasing, and another neighbor testified that they had heard Defendant 2 aggressively banging on their neighbor's door before barging into the apartment just about an hour before the time of death. Defendant 2's spouse, however, claims that they were awake with Defendant 2 during the time of death and that neither of them left the condo until they heard the commotion next door the following morning.

You have found Defendant 2...

- ○ Guilty (1)
- ○ Not guilty (2)

Q6 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Juror tasks activity 2

Start of Block: Juror tasks activity 3

Q7 Defendant 3, a driver for a ridesharing app, has been accused of petty theft after a rider claimed just over $800 was missing from their lost wallet after the driver returned it, almost 24 hours after the wallet was left in Defendant 3's car. The rider told police that they had been returning to their hotel after a night out in Las Vegas for a friend's birthday, and that they had been carrying the $825 in cash that they had won at a casino that night in said wallet. The rider claims that they weren't aware that they had left their wallet in the driver's car until the following day, and it took the driver another 12 hours to respond to the message the rider had sent through the app's messaging feature. Defendant 3 claimed that they had given a few more rides to other customers after dropping off the rider, and that they had eventually returned home early in the morning. Defendant 3 claimed they didn't even know a wallet had been left in their car until the next evening when they were getting ready to go to work for the night and opened the rideshare app. Defendant 3's alibi was corroborated by their spouse, but a review of the their customer ratings found at least two other similar complaints since they began driving for the company almost two years ago that had never been taken to court.

You have found Defendant 3...

- ○ Guilty (1)
- ○ Not guilty (2)

Q8 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Juror tasks activity 3

Start of Block: Juror tasks activity 5

Q9 Defendant 5 has been charged with assault in the first degree after another patron at a local bar accused Defendant 5 of using a glass beer bottle to attack them from behind in the bar's parking lot .Just prior to the incident, the bartender and other patrons saw the patron's significant other approach Defendant 5, but the significant other claims that they were approached by Defendant 5 first who "immediately made a vulgar comment about [their] appearance." Upon returning from the bathroom, the significant other told the patron what happened. The patron claims that they calmly told Defendant 5 off for the supposed harassment before leaving, and was blindsided by Defendant 5 in the parking lot. Defendant 5's story, however, is that the patron's significant other beckoned them over while they were sitting alone at the bar. Defendant 5 claimed the two exchanged flirtations before the they excused themselves to return to their friends. Defendant 5 claimed that they were approached by the patron a few minutes later, requesting them to come out to the parking lot, unaware that they had just been flirting with this person's significant other. Defendant 5 followed the patron out where they were forced to defend themselves with the half-empty beer bottle when the patron's significant other pulled a gun from the car's glove compartment. Further investigation found that there was in fact a 9mm semi-automatic pistol registered to the patron in the car's glove compartment, but the patron and their significant other both testified that neither one of them had touched the firearm during the altercation. All involved left the scene with very minimal injuries, but the patron claimed that Defendant 5 had intended to seriously maim them by swinging at the back of their head with a glass beer bottle.

You have found Defendant 5...

- ○ Guilty (1)
- ○ Not guilty (2)

Q10 Timing

First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Juror tasks activity 5

Appendix B

Qualtrics Survey Demographic/SES Questions

Start of Block: Demographic questionnaire block

Q11 Please select your gender identity below:

- Male (1)
- Female (2)
- Non-binary (3)
- Prefer not to say (4)
- Prefer to self-describe (5) _____

Q12 How old are you?

- 18-24 (1)
- 25-34 (2)
- 35-44 (3)
- 45-54 (4)
- 55-64 (5)
- 65+ (6)

Q13 Which of the following best describes you?

- ○ Asian or Pacific Islander (1)
- ○ Black or African American (2)
- ○ Hispanic or Latino (3)
- ○ Native American or Alaskan Native (4)
- ○ White or European American (5)
- ○ Biracial or Multiracial (6)
- ○ A race/ethnicity not listed here (7)

Q14 Please indicate the highest degree of education you have completed:

- ○ No formal schooling (1)
- ○ Some formal schooling, no diploma (2)
- ○ 12th grade, no diploma (3)
- ○ GED or alternative equivalent (4)
- ○ High school graduate (5)
- ○ Some college, no degree (6)
- ○ Associate's degree (7)
- ○ Bachelor's degree (8)
- ○ Master's degree (9)
- ○ Doctorate degree (10)

Q15 What is your approximate average household income?

- ○ $0-$24,999 (1)
- ○ $25,000-$49,999 (2)
- ○ $50,000-$74,999 (3)
- ○ $75,000-$99,999 (4)
- ○ $100,000-$124,999 (5)
- ○ $125,000-$149,999 (6)
- ○ $150,000-$174,999 (7)
- ○ $175,000-$199,999 (8)
- ○ $200,000-$224,999 (9)
- ○ $225,000-$249,999 (10)
- ○ $250,000+ (11)

Q16 Which statement best describes your financial situation for the 2021 tax year (or will describe, if you have not filed your taxes yet)?

- ○ I claimed one dependent (1)
- ○ I claimed two or more dependents (2)
- ○ I was claimed as a dependent (3)
- ○ I was not claimed as a dependent, but I also did not provide more than one-half of my own financial support (4)
- ○ I was not claimed as a dependent and I did not claim any dependents (5)

End of Block: Demographic questionnaire block

Appendix C

SPSS Analysis

Correlations

		VerdictFrequency	SEI
VerdictFrequency	Pearson Correlation	1	.044
	Sig. (1-tailed)		.443
	N	13	13
SEI	Pearson Correlation	.044	1
	Sig. (1-tailed)	.443	
	N	13	13