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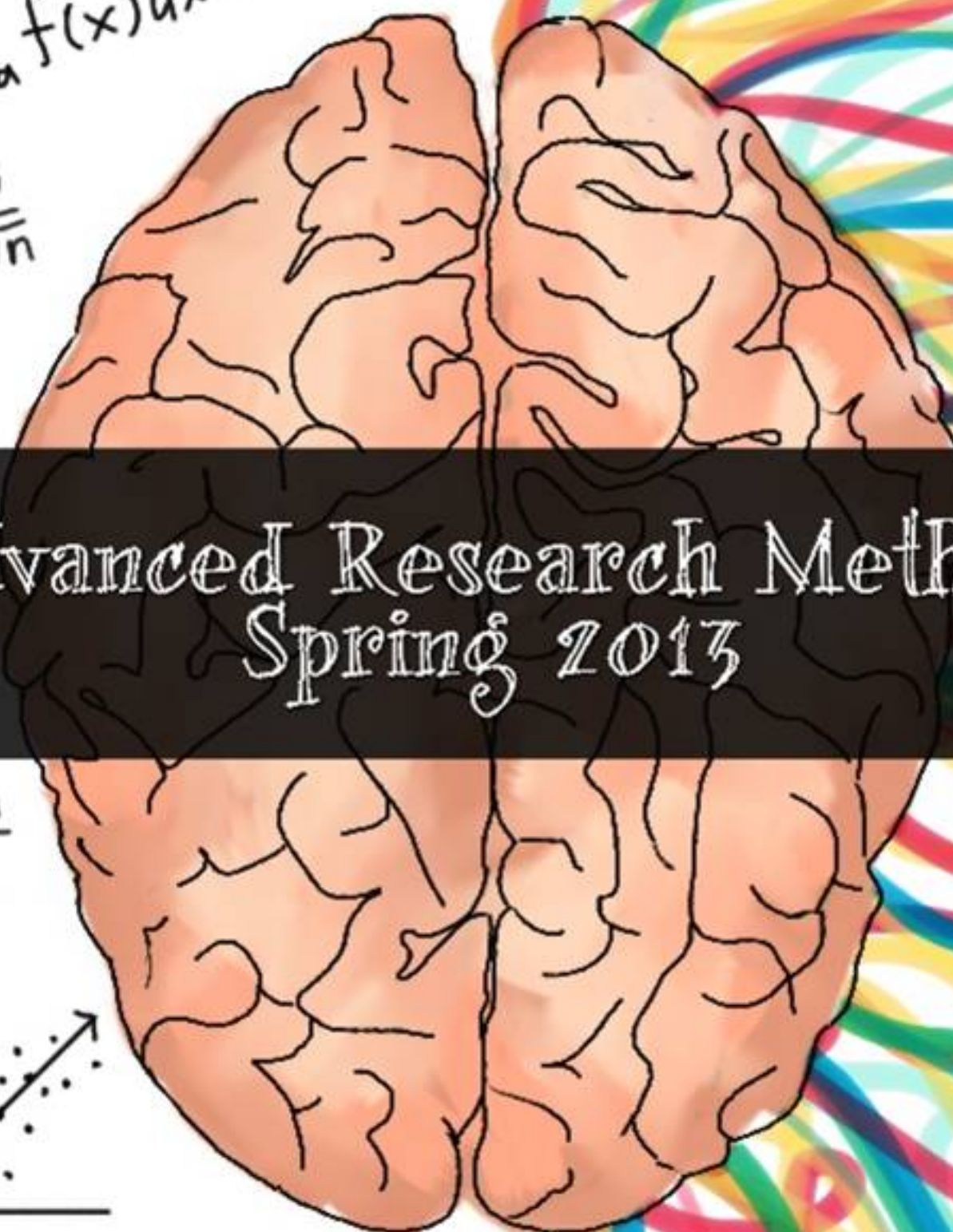
$$z = \frac{x - \mu}{\sigma}$$

$$df = n - 1$$

et al.: 2012-2013, Full Issue

$$\int_a^b f(x) dx = F(b) - F(a)$$

$$\sigma_m = \frac{\sigma}{\sqrt{n}}$$



Advanced Research Methods Spring 2013

$$t = \frac{M - \mu}{s_m}$$



$$y = a + bx$$

$$\mu = \frac{\sum x}{N}$$



Prologue

I enjoyed working with the students this semester because the projects they chose to complete were truly unique to each individual, and most chose to pursue research in an area they are passionate about. For this reason, I believe the students were very devoted to their work, and many chose to present at the first annual Student Research Conference at Lindenwood University as well as at the Student Presentations hosted by the School of Sciences on Sibley Day. It was a pleasure to see so many dedicated students in one class.

Some of the students met with some challenges getting their proposals approved by our Institutional Review Board (IRB). But in the end, they all completed very worthwhile projects, and I hope they are as proud of their work as I am!

Michiko Nohara-LeClair

Course Instructor

Cover design by Julia Leonard

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Examining Stress and Performance Anxiety as Predicting Factors of Athletic Burnout in Collegiate Student-Athletes

Drew Barnard¹

In the past, burnout has been a popular topic for research. However, within the realm of athletics, a majority of such research has been focused on coaches, athletic department staff, and athletic trainers. The purpose of this study was to assess potential contributing factors of burnout among student-athletes at Lindenwood University, an institution with National Collegiate Athletics Association (NCAA) Division II and Student-Life athletic programs. Completion of four questionnaires was required in this study; a Perceived Stress Scale (Cohen, 1983), a Self-Rated Anxiety Scale (Zung, 1979), a Modified Burnout Questionnaire (Harris, 2005), and a Demographic Questionnaire. The student-athletes who participated in this study compete in various sports at the NCAA Division II and Student-Life Sport levels. A multiple regression analysis was used upon the completion of data collection to determine if stress and performance anxiety were contributing factors in predicting athletic burnout. Based on previous burnout-related research it was hypothesized that stress and anxiety would be significant contributing factors to athletic burnout and would be able to be recognized by individuals involved in athletics as predicting factors in athletic burnout. Based on the significant results of this study, the results of this study can be used as part of a proactive educational resource for coaches and athletic department staff to utilize.

Keywords: stress, anxiety, burnout, collegiate student-athlete

In 1974, Freudenberger established burnout to be a state of failure, physical exhaustion, and/or emotional exhaustion due to a deficit of energy, strength, or resources generally encountered when working with excessively needy and emotional peers. Maslach (1976) offered a similar definition when he defined burnout; he preferred to view burnout in terms of the absence of concern or care for co-workers as a result of job related stress. Regardless of the professional behind the given definition and the year in which burnout was defined, or re-defined in some instances, there are five general categories in which burnout symptoms may be classified. These categories include: physical symptoms, emotional symptoms, behavioral

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symptoms, interpersonal symptoms, and attitudinal symptoms (Kahill, 1988). Due to the fact that burnout can be experienced in such a wide variety of ways, the intensity of these symptoms may vary depending on the severity of burnout being experienced. Nonetheless, burnout had collectively been qualified as having physical symptoms such as fatigue, physical depletion/atrophy, exhaustion, difficulty sleeping, headaches, and illness.

Within the category of emotional symptoms individuals experiencing burnout could become irritable, depressed, have feelings of increased anxiety, guilt, and helplessness. Rigid dependency upon rules, absenteeism/withdrawal, alcohol and drug consumption, as well as over indulgence in food and tobacco products are all common behavioral symptoms experienced during periods of burnout (Maslach, 1976). The fourth category of symptoms not only affects the individual who is experiencing burnout but also affects the people in his or her life and has been deemed the interpersonal symptoms these symptoms include impersonal communication practices, difficulty focusing, attempted withdrawal, and potentially verbal and non-verbal forms of violence. The final category given to classify symptoms of burnout belongs to attitudinal symptoms where it is not uncommon for individuals to develop a generally defensive and negative attitude, callousness towards others, lacking desire, and a lost sense of enjoyment (Maslach, 1976).

As examined through previous research and literature created by Freudenberger (1974), and Maslach (1976), the early stages of burnout related research were mainly focused in the workplace and investigated burnout factors in a variety of careers such as teachers, police officers, physicians, and lawyers, to name a few. It would not be until the mid-1980s when burnout would eventually begin to be examined in association with athletics. Later research would begin to pave the way into athletic burnout related research by first examining levels of

burnout found in coaches, athletic trainers, and officials, respectively (see for example, Caccesse & Mayerberg, 1984; Capel, 1986; Capel, Sisley, & Desertrain, 1987). Even as burnout became a topic of growing interest in the realm of athletics, a majority of the studies conducted would remain focused on burnout rates in athletic staff instead of on the majority of athletes, with the exception of a few available studies that focused on levels of burnout found in different adolescent and collegiate sports (Coakley, 1992; Judge, Bell, Theodore, Simon, & Bellar, 2012).

Walter, Van Lunen, Walker, Ismaeli, and Onate (2009) conducted a study of athletic training education program directors that would examine emotional exhaustion, depersonalization, and personal accomplishment researchers. Although the results from this study indicated low levels of burnout in depersonalization and personal accomplishment, program directors did report having moderate levels of emotional exhaustion and it was lightly suggested these moderate levels were contributed to in part by the extensive list of day-to-day responsibilities integrated in this profession (Walter et al., 2009). Similar to the superior time management skills required by these professionals in order to perform at work every day, collegiate student-athletes must also be able to manage their time between attending class, completing coursework assignments, fulfilling athletic related obligations (such as practice, home and away games, and conditioning), and attempting to have a normal social life while still taking care of themselves and doing things like getting an adequate amount of sleep each night. Understandably, this can be quite an overwhelming task and can very easily create new environmental stress factors for the athlete to have to learn to cope with. A study conducted by Kristiansen, Murphy, & Roberts (2012) further emphasized the additional stresses placed on athletes, the vast array of responsibilities entrusted in today's athletes, and ultimately the importance of providing a healthy, supportive, and functional atmosphere within athletics. They

found that the stress factors stem from travel related issues, conflict between teammates, financial concerns, or coaching complications, being exposed to such things on a day-to-day basis can take a serious toll on athletes and may very well cause the athlete to experience burnout in the future.

In addition to the influence stress factors have in determining and assessing burnout levels, past research related to anxiety and coping strategies used to aid athletes in dealing with adversity also proves to be relevant and influential in the process of defining and assessing athletic burnout. Goodger, Gorely, Lavalle, and Harwood created a systematic review for burnout in sport and found increased stress levels and high trait anxiety to be related to higher levels of burnout, depending on individual coping skills and ability to effectively perform in times of adversity (as cited in Gould & Whitley, 2009).

In an examination of burnout among adolescent athletes Coakley (1992) challenges readers to think outside the box by proposing that burnout in athletes may be rooted much deeper than chronic stress, coping abilities, and so forth. Coakley (1992) admitted that stress is most certainly a factor of burnout and briefly explains the standard clinical symptoms of burnout and how an athlete's insecurities can adversely affect his or her performance causing the athlete to seclude themselves, socially and emotionally, from the people around them due to their inability to meet the performance goals they had set for themselves. The influence stress and anxiety can have on an athlete experiencing athletic burnout is evident in certain individual circumstances and research articles. However, I could not find any published research available that involved testing levels of stress and anxiety in relation to burnout that had been conducted using the same athlete participants for both dependent measures.

The present study investigated the relationship between predicting factors of burnout, such as stress and anxiety, and feelings of athletic burnout in collegiate student-athletes. Collegiate student-athletes are exposed to a great deal of chronic stress when factors such as a hectic schedule, increased responsibility, and extracurricular obligations in athletics are taken into consideration. The purpose behind this study was to determine if specific contributing factors of burnout, such as stress and anxiety, could be identified as predicting factors of athletic burnout in collegiate student-athletes. As a result of an increased awareness (due to participation in this study or further education) regarding athletic burnout and the factors that contribute to its progression, developing young adults involved in collegiate athletics could find additional benefits such as coping skills and strategies that can be used to better their future state of mental and physical well being. It was hypothesized that stress and anxiety will be significant contributing factors to athletic burnout and would be able to be recognized by individuals involved in athletics as predicting factors in athletic burnout.

Method

Participants

The principal investigator surveyed 25 participants from the Lindenwood University Athletic Department. Participants did not receive any compensation for participating in the study. Nineteen of the participants were female and six of the participants were male. Of the participants, 2 were Asian/Pacific Islander, no participants were American Indian/Native Alaskan, 6 were Black, Non-Hispanic, 12 were White, Non-Hispanic, 5 were Hispanic, and no participants were Non-Residents/Aliens to the United States. The age range of participants fell between 19 and 25 years old, with a mean age of 21.36. All participants were full-time students. The mean number of credit hours participants' were enrolled in was 15.48, with all participants

ranging between 9 and 19 credit hours. The average number of years playing competitive sports was 9.28, with the range varying from 2 years to 16 years of experience. The average number of hours fulfilling sport-related obligations ranged from 10 to 30, and because it was an open ended question qualitative answers, such as “Too many” and “Depends” were also given. Of the 25 participants, none were freshmen, 6 were sophomores, 6 were juniors, 10 were seniors, and 3 claimed other as their class status. Fourteen of the twenty-five participants participated in NCAA Division II athletics, and the remaining 11 participants participated in Lindenwood University sponsored Student Life Sports, respectively.

Materials

Participants were given two informed consent forms to read, sign, and understand before starting the surveys (see Appendix A); one copy was for the participant to keep for his or her records and one copy was to be kept by the principal investigator, This was both parties would have the appropriate paperwork on hand. Participants were given a single packet of materials, which included four surveys, during the experiment. The first survey to be completed was the Perceived Stress Scale (Cohen, 1983) measuring the participants’ feelings and thoughts during the last month based on the participants’ answers to 14 questions (see Appendix B). The next survey was the Self-Rating Anxiety Scale (Zung, 1971) which measured participants’ levels of anxiety over the previous few days leading up to the survey based on the answers given to the 20 questions included in the survey (see Appendix C). The third survey was the Athlete Burnout Questionnaire (Harris, 2005), which was modified by the principal investigator to apply to all sports instead of strictly swimming as it did in its original form. The Athlete Burnout Questionnaire consisted of 15 questions measuring participants’ feelings toward their sport (see Appendix D).

The final survey in the materials packet was the demographic questionnaire consisting of eight questions. The questions included age, gender, ethnicity, the number of years the participant has been playing competitive sports, the average number of hours per week the participant spent fulfilling sport-related obligations, the participants year in school, the number of credit hours the participant was currently enrolled in, and the division level at which the participant competed at (see Appendix E). The final form given to participants was the feedback letter which thanked them for their participation, described the purpose of the study, assured them that no identifying information would be linked with any findings, and told them to contact the principal investigator if they had any questions or concerns regarding the study (see Appendix F).

The principal investigator provided pens and pencils for each participant to complete the consent forms and surveys. The room in which the research was conducted was well lit and included two tables and two chairs to accommodate for the principal investigator and one participant at a time.

Procedure

Once a participant arrived, he or she was greeted and then asked to read and sign two copies of the informed consent form. The participant kept one copy and the principal investigator kept one copy. The informed consent form ensured that all participant information would be kept confidential and that the principal investigator's only interest was in the aggregate results of the study, and not in any individual results. The principal investigator informed the participant that he or she was not obligated to answer any question he or she felt uncomfortable answering, and would not be penalized for not completing our study.

After signing the informed consent form, the participant was given a packet of materials consisting of four surveys and asked to complete them in order. The first survey to be completed was the Perceived Stress Scale (Cohen, 1983). Following the Perceived Stress Scale (Cohen, 1983) was the Self-Rating Anxiety Scale (Zung, 1971). The third survey in the packet of materials was a modified version of the Athlete Burnout Questionnaire (Harris, 2005). The final survey participants were asked to complete was an eight question demographic questionnaire.

Upon completion of the four surveys in the materials packet, the participant was given the feedback letter and debriefed by the principal investigator. The principal investigator took this time to explain to the participant that any questions he or she may have are welcome and that the principal investigator's contact information was located at the bottom of the feedback letter in case he or she had any future questions, concerns, or would like to receive the aggregate results of the study. After debriefing the participant, the principal investigator provided the participant with a feedback letter and thanked the participant for their participation in the study.

Results

In order to determine if stress and performance anxiety are contributing factors of athletic burnout in collegiate student-athletes, a multiple regression analysis was conducted with SPSS computer software and results indicated that stress and anxiety were contributing factors of athletic burnout in this specific population of collegiate student-athletes, $F(2, 22) = 3.864, p < .001$. Significant correlations were found between stress and burnout, as well as between anxiety and burnout, but not between stress and anxiety (stress/burnout = .380, anxiety/burnout = .412, stress/anxiety = .210). These correlations indicate that stress and anxiety are both individual contributing factors of athletic burnout but are not contributing factors of one another; meaning that higher levels of stress correlate with higher levels of athletic burnout, and that higher levels

of anxiety correlate with higher levels of athletic burnout, but higher levels of stress do not correlate with higher levels of anxiety and vice versa. The most numerically significant correlation was found between gender and stress levels, which indicated that within this population of participants that female student-athletes were more likely to possess higher levels of stress (gender/stress = .664). Results of the Perceived Stress Scale (Cohen, 1983) were as follows, $M = 39.96$, $SD = 7.743$. Results of the Self-Rating Anxiety Scale (Zung, 1971) were as follows, $M = 37.44$, $SD = 6.312$. Results of the Modified Athlete Burnout Questionnaire (Harris, 2005) were as follows, $M = 43.92$, $SD = 12.754$.

Discussion

It was hypothesized that stress and anxiety would be significant contributing factors of athletic burnout in collegiate student-athletes. I found that stress and anxiety were significant contributing factors to athletic burnout. Although the present study produced compelling results a few limitations were discovered while conducting the study. To correct for the limitations found during this study future research studies could repeat this research study at various universities with different academic and athletic demands across the country, conduct longitudinal studies involving both teams and individuals, create studies that focus on identifying specific behaviors that predispose athletes to burnout, examine burnout levels in individual sports vs. team sports, and/or conduct in-season and post-season research to compare data.

References

- Caccesse, T.M., & Mayerberg, C.K. (1984). Gender differences in perceived burnout of college coaches. *Journal of Sport Psychology*, 6, 279-288.
- Capel, S.A. (1986). Psychological and organizational factors related to burnout in athletic trainers. *Research Quarterly for Exercise & Sport*, 57, 321-328.

- Capel, S.A., Sisley, B.L., & Desertrain, G.S. (1987). The relationship of role conflict & role ambiguity to burnout in high school basketball coaches. *Journal of Sport Psychology*, 9, 106-117.
- Coakley, J. (1992). Burnout among adolescent athletes: A personal failure or social problem? *Sociology of Sport Journal*, 9, 271-285.
- Freudenberger, H.J. (1974). Staff burnout. *Journal of Social Issues*, 30, 150-165.
- Gould, D., & Whitley, M.A. (2009). Sources and consequences of athletic burnout among college athletes. *Journal of Intercollegiate Sports*, 2, 16-30.
- Judge, L.W., Bell, R.J., Theodore, R., Simon, L., & Bellar, D. (2012). An exploratory examination of burnout in NCAA Division II athletes. *Journal of Intercollegiate Sport*, 5, 230-240.
- Kahill, S. (1988). Symptoms of professional burnout: A review of the empirical evidence. *Canadian Psychology*, 29, 284-297.
- Kristiansen, E., Murphy D., & Roberts, G.C. (2012). Organizational stress and coping in U.S. professional soccer. *Journal of Applied Sport Psychology*, 24(2), 207-223.
- Maslach, C. (1976). Burned-out. *Human Behavior*, 5, 16-22.
- Walter, J.M., Van Lunen, B.L., Walker, S.E., Ismaeli, Z.C., & Onate, J.A. (2009). An assessment of burnout in undergraduate athletic training education program directors. *Journal of Athletic Training*, 44(2), 190-196.

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete four surveys; one which tests for my level stress, one which tests for my level of anxiety, one which tests for my level of athletic-burnout, and one which requires me to provide demographic information about myself. By signing this informed consent letter I verify that I am currently participating, or used to participate, in school sponsored athletics at Lindenwood University. I understand that I should be able to complete this project in less than 30 minutes. I am aware that I am free to skip any questions at any time. I am also aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without penalty. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential, (none of my parents, professors, coaches, athletic trainers, or teammates will be informed in any way of my responses to these surveys), and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the principal investigator to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent.

 Participant's Signature

Date

 Researcher's Signature

Date

Student Researcher's Contact Information

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Appendix B

Perceived Stress Scale (Cohen, 1983)

INSTRUCTIONS:

The questions in this scale ask you about your feelings and thoughts during THE LAST MONTH. In each case, you will be asked to indicate your response by circling the number representing HOW OFTEN you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

1-Almost never 2-Rarely 3-Sometimes 4-Frequently 5-Almost always

1. In the last month, how often have you been upset because of something that happened unexpectedly?

1 2 3 4 5

2. In the last month, how often have you felt that you were unable to control the important things in your life?

1 2 3 4 5

3. In the last month, how often have you felt nervous and "stressed"?

1 2 3 4 5

4. In the last month, how often have you dealt successfully with day-to-day problems and annoyances?

1 2 3 4 5

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

1 2 3 4 5

6. In the last month, how often have you felt confident about your ability to handle your personal problems?

1 2 3 4 5

7. In the last month, how often have you felt that things were going your way?

1 2 3 4 5

8. In the last month, how often have you found that you could not cope with all the things that you had to do?

1 2 3 4 5

9. In the last month, how often have you been able to control irritations in your life?

1 2 3 4 5

10. In the last month, how often have you felt that you were on top of things?

1 2 3 4 5

11. In the last month, how often have you been angered because of things that happened that were outside of your control?

1 2 3 4 5

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

1 2 3 4 5

13. In the last month, how often have you been able to control the way you spend your time?

1 2 3 4 5

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

1 2 3 4 5

Appendix C

Self-Rating Anxiety Scale (Zung, 1971)

For each item below, please circle the number 1 through 4 that best describes how often you felt or behaved this way during the past several days.

1–A little of the time **2**–Some of the time **3**–A good part of the time **4**–Most of the time

1. I feel more nervous and anxious than usual.

1 2 3 4

2. I feel afraid for no reason at all.

1 2 3 4

3. I get upset easily or feel panicky.

1 2 3 4

4. I feel like I'm falling apart and going to pieces.

1 2 3 4

5. I feel that everything is all right and nothing bad will happen.

1 2 3 4

6. My arms and legs shake and tremble.

1 2 3 4

7. I am bothered by headaches neck and back pain.

1 2 3 4

8. I feel weak and get tired easily.

1 2 3 4

9. I feel calm and can sit still easily.

1 2 3 4

10. I can feel my heart beating fast.

1 2 3 4

11. I am bothered by dizzy spells.

1 2 3 4

12. I have fainting spells or feel like it.

1 2 3 4

13. I can breathe in and out easily.

1 2 3 4

14. I get feelings of numbness and tingling in my fingers & toes.

1 2 3 4

15. I am bothered by stomachaches or indigestion.

1 2 3 4

16. I have to empty my bladder often.

1 2 3 4

17. My hands are usually dry and warm.

1 2 3 4

18. My face gets hot and blushes.

1 2 3 4

19. I fall asleep easily and get a good night's rest.

1 2 3 4

20. I have nightmares.

1 2 3 4

Appendix D

Modified Version of the Athlete Burnout Questionnaire (Harris, 2005)

Please read each statement carefully and decide if you ever feel this way about your current sport participation. Your current sport participation includes all the training you have completed during this season. Please indicate how often you have had this feeling or thought this season by circling a number 1 to 5, where 1 means "I almost never feel this way" and 5 means "I feel that way most of the time." There are no right or wrong answers, so please answer each question as honestly as you can. Please make sure you answer all items. If you have any questions, feel free to ask.

1-Almost never 2-Rarely 3-Sometimes 4-Frequently 5-Almost always

1. I'm accomplishing many worthwhile things in my sport.

1 2 3 4 5

2. I feel so tired from my training that I have trouble finding energy to do other things.

1 2 3 4 5

3. The effort I spend in my sport would be better spent doing other things.

1 2 3 4 5

4. I feel overly tired from my athletic participation.

1 2 3 4 5

5. I am not achieving much in athletics.

1 2 3 4 5

6. I do not currently care as much about my athletic performance as much as I used to.

1 2 3 4 5

7. I am not performing up to my ability in my sport.

1 2 3 4 5

8. I feel “wiped out” from playing my sport.

1 2 3 4 5

9. I’m not into my sport like I used to be.

1 2 3 4 5

10. I feel physically worn out from my sport.

1 2 3 4 5

11. I feel less concerned about being successful in my sport than I used to.

1 2 3 4 5

12. I am exhausted by the mental and physical demands of my sport.

1 2 3 4 5

13. It seems that no matter what I do, I don’t perform as well as I think I should.

1 2 3 4 5

14. I feel successful at my sport.

1 2 3 4 5

15. I have negative feelings towards my sport.

1 2 3 4 5

Appendix E

Demographic Questionnaire:

Please respond to the following questions to the best of your ability. *You may choose to decline to answer any of the following questions.* Your answers will remain anonymous.

1. **Age:** _____ (years)
2. **Gender** (circle one): Male Female
3. **What is your ethnicity?** (circle one)
 - a. Asian/Pacific Islander
 - b. American Indian/Native Alaskan
 - c. Black, Non-Hispanic
 - d. White, Non Hispanic
 - e. Hispanic
 - f. Non-Resident/Alien
4. **Number of years playing competitively:** _____
5. **Average number of hours per week spent completing sport-related obligations?**

6. **What year in school are you currently in?** (circle one):
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Other (please explain): _____
7. **Number of credit hours you are currently enrolled in:** _____
8. **What division level do you compete at?** (circle one):
 - a. NCAA Division II
 - b. Student Life Sports

Appendix F

Feedback Letter

Thank you for participating in my study. The present study was conducted in order to determine if contributing factors to burnout, such as stress and anxiety, may be predicted when considering athletic burnout. I hypothesized that stress and anxiety would be significant contributing factors to athletic burnout and would be recognized as predicting factors in athletic burnout. I came to this hypothesis because, taking into account the hectic schedules, increased responsibilities, and extra curricular obligations in athletics, I believe collegiate student-athletes are exposed to a great deal of stress on a daily basis. I believe it would be very beneficial for the mental and physical well being of these developing young adults if the awareness of potential athletic burnout and the factors associated with athletic burnout were to be increased. I believe that this study could further investigate the relationship between predicting factors of burnout, such as stress and anxiety, and feelings of athletic burnout in collegiate student-athletes. If found significant, I would like to present the aggregate results of my study to coaches and athletic department staff in the form of a proactive and educational resource. Under the circumstances that I am able to present the results of my study, I assure you that participant confidentiality will be upheld and there will not be any identifying information of any kind included in the presentation.

Please note that I am not interested in your individual results; rather, I am only interested in the overall findings based on aggregate data. No identifying information about you will be associated with any of the findings, nor will it be possible for me to trace your responses to any of the questions proposed in this study on an individual basis.

If you are interested in obtaining the final results of this study based on aggregate data, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to contact me. My contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study.

Sincerely,

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Is Marriage Still Relevant in Today's Society?

Stacey Harris²

The original idea of marriage is different from today's current idea of marriage. Although the idea of marriage is different all over the world, the idea of a marriage based on love is an ever-growing trend throughout the world. This idea of marriage for love is no longer secluded to the western cultures. In this paper there is a critique of different literatures on what marriage means and the idea of cohabitation as well as a study conducted to review how undergraduate college students feel about the relevancy of marriage in today's society. The study was conducted to test the idea that marriage is no longer relevant in today's society. With more people cohabiting this seems to be a relevant idea to test. The method used was a random assignment of undergraduate students who took a ten question survey that addressed questions on marriage as well as cohabitation. The participants in the study, however, seem to favor marriage over cohabitation.

Marriage in the western world is an idea of falling in love with the right person, getting married, spending the rest of our lives with that person and being happily ever after. According to Whitbourne and Whitbourne (2011) the definition of marriage is a union of between a man and a woman that is legally sanctioned. Many people have asked if this idea of marriage is attainable. However, with the hopefuls there are the ones who oppose this fantasy idea of marriage with as much vigor as the people who do believe. The discrepancy comes when we add up the numbers of divorce rates, marriage rates and the rates at which cohabitation occurs in society. Whitbourne and Whitbourne (2011) also suggest that only 50% of the US. Population is currently married and about half of that number will end in divorce. They also state that the number of couples who cohabit today compared to the 1960s has more than quadrupled. However, around 50% of these cohabiting couples according to Whitbourne and Whitbourne (2011) end up marrying one another. Another interesting concept that has been newly introduced

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in the relevancy issue is the idea of a marriage contract in nuptials (Ritchel, 2013). This paper examines the studies and opinions of these important factors that play a role; or potentially play a role, in the ideas concerning marriage, cohabitation, divorce, as well as marriage contracts.

According to an article published in "Psychology Today," (2008) the history of marriage was seen more as a contract between families for monetary purposes, survival and power. The authors also provide a time-line that explains how different cultures viewed marriage. The Antiquity-Renaissance (1450 to 1600 CE) described love in Ancient Greece as a contractual marriage that had more to do with inheritance. The Greeks believed that if one were in love then they were insane (Coontz, 2005). During this period love was only honored between two men. Also during this time, a woman could be forced to divorce her husband and marry her male relative if her father were to die sonless.

According to Coontz (2005) Plato was a believer in love; however, his love did not encompass a bond between a man and a woman rather, a bond between a man and a man. It is not clear if Coontz believed whether this was a romantic love or an intimate love between men. The French, according to Coontz (2005) also considered the idea of love between two people to be a psychological problem and had a common belief that sufferers of lovesickness should engage in sexual intercourse with whomever to move on with the insanity and get to more important things. China was also privy to this type of thinking. The people of China believed that if love was to grow in excess between married couples then it could affect the "solidarity of the extended family" Coontz (2005). According to Coontz (2005), the Chinese considered traditional love in the language did not mean the love we think of today. Love in their language was used as a disapproving union between two people. It was not until the 1920s that another word for love was invented to encompass a passionate and acceptable love westerners believe in today.

In “Psychology Today” (2008), the author also talked about how “wife swapping” in Rome was a normal occurrence. This was used primarily for “career moves” to make bonds between states and family stronger. This was seen as responsible and admirable. It did not matter if the couple were in love or not. If they had not engaged in the “wife swapping” it would have been considered irresponsible and a threat to the social norms. The same pattern could be seen in Ancient India where loving a person before marriage was frowned upon. It was seen as disruptive and “anti-social” and a flimsy basis for marriage (Coontz, 2005).

During the 1600s the belief of marriage was seen as a contract between families and husband and wives did not look to each other for passion, rather they looked to people who were close to them outside of their union. Even up until the 1700s this was a prevalent idea of marriage. Close to the 18th century, the state of Virginia in the United States suggests that passionate love between husband and wife was still almost repulsive to most people. People did not find the idea of true and passionate love as appropriate (“Psychology Today”, 2008).

Well into the 17th century women started to like and almost dream about the idea of marriage for love and even considered the idea that marriage was used for purposes of money and gain as unfortunate. Even with the trends of love for women were changing they were changing for men as well. Not really in a good way though. “Psychology Today” (2008) wrote that in 1840 Queen Victoria broke the traditional rules of a gem embedded gowns and started a trend with a virginal white gown and men started to see their wives as not being the lustier sex they once had been and “would rather have sex with prostitutes than their virtuous wives.” The idea of what is considered “normal” in current US society’s idea of a honeymoon was not always what was considered “normal.” In Psychology Today (2008) what use to be considered “normal” was, a couple who were just married, would visit relatives who were unable to make the travel to

be at their union. That evolved into something like a honeymoon; however, the wife's friend would come along on this trip. This could have to do with the idea of women still being virgins during that time period and still needing a chauffeur. Dates were not a common idea until the 1920s according to "Psychology Today" (2008). The critics during this time had their reservations about love and the expression of love being the start of the end of marriage. The idea of love as a solid influence of love, in the universal sense, in the US did not occur until the 1970s. At this time love was embraced and led up to the sort of love that we expect and pawn after in today's current society. The thought of marriage as love (which is primarily a Western belief) is spanning around the globe in current society. However, this idea of marriage for love has its fair share of problems.

Divorce was an unheard of societal norm. If a person was to get divorced as recently as the 1960s they were not considered to be fit to be remarried by law (Stevenson & Wolfers, 2007). The Supreme Court ruled in favor of remarriage in the United States with the *Love vs. Virginia* (388 U.S.1) case. The judge in the rulings said it was a basic human right to have the ability to get married (Stevenson & Wolfers, 2007). The Supreme Court ruling was what set the stage for the reformation of marriage. It was not until 1973 that the Supreme Court ruled in favor of men having to financially support their illegitimate children in the case of *Gomez v. Perez* (409 U.S. 535) (Stevenson and Wolfers, 2007). This was a time of change in the legal systems of marriage and social norms (Stevenson and Wolfers, 2007). With these new laws in place Stevenson and Wolfers (2007) imply that this is why some of the marriage rates declined. Women no longer needed to have a shot-gun marriage to make ends meet. The father of an unborn child was still held responsible for their unborn child.

The rules of divorce for most states in and before the 1950s stated that there had to be a fault on at least one of the partners to get a divorce. However, in the 1960s according to Stevenson and Wolfers (2007) some states in the US introduced the ability to sever a marriage based on the idea that two people could no longer get along. There was no longer the need to stay in a marriage that did not suit both parties, and with the new found responsibility on the man's part from the *Gomez v. Perez* (409 U.S. 535) case, the woman had monetary rights regarding her children. This made it less likely for her to be fearful to leave the union. Stevenson and Wolfers (2007) suggested that incidences of suicide and violence occurring in the household declined indicating that this had a significant effect on the divorce rate, as well as the following two years after the induction of the law; divorce rates dramatically rose. Stevenson and Wolfers (2007) also said factors contributing to the rates of divorce are the wages between men and women being more equivalently divided, the laws that allowed women to use birth control when they were married and eventually even when they were not married, the ability to have an abortion, and women wanting to go to school and get degrees. The marriage rates have had troubles due to this last statement in that the workplace has a unisex atmosphere and it is easier for opposite sexes to meet, date, and sometimes even have affairs. Another factor that plays a part is current technology. It is easier for men and women to get online and flirt, meet and even carry out fantasies online, which could lead to extramarital affairs.

One of the main reasons why marriage is seen to be, by some, as a failing institution is current society's, with the younger generations', idea of what marriage is meant to stand for in current western society. Lapp (2012) asked younger people if they still believed in the institution of marriage. He found that most of the younger generations' does in fact want to make a commitment and get married. However, when they were asked if it was ok for people to get

divorced, the common answer was if they were not happy then they should not be together. The idea of flimsy unions based on love is very prevalent in this group. The idea of love is something that is conditional upon one's own happiness. There is not a pattern in the thought process that points to the union of two people being a sacred bond that has to have loyalty, sacrifice and fierce commitment. The younger generation is confused as to what they want in a marriage. These generations do not seem to put much thought into the unconditional part of marriage as much as the "if I am unhappy I will just leave" aspect of divorce. As Lapp (2012), put it love should be like fighting for your country. The younger generation and generations to come need to understand what a marriage is supposed to entail as far as responsibilities from them and their partners.

Kilmann & Vendemia, (2013) also have the same sentiments. They found that couples who were married longer were able to be considerate of each other's needs, not so easy to anger and had less personal distress compared to shorter or intermediate marriages with whom had all of these negative traits. The idea is that the selfish and conditional love that some believe is love is what may be causing these shorter marriages. The authors suggest that this is caused by the wide personality differences between couples.

Cohabitation is the idea of two people living together as a married couple but not actually having a marriage. In Stevenson and Wolfers' (2007) research they find that couples who engage in cohabitation are using it as a permanent or semi-permanent state. A lot of people go into cohabitation with their partners expecting a marriage to ensue. However, couples who cohabit are more likely to end up in divorce than couples who did not cohabit (Stevenson & Wolfers, 2007). They also suggest that some may have a lower commitment to their partners when they decide to cohabit, but with some people the institution of marriage is not seen as important to

them as to others. According to Whitbourne and Whitbourne (2011), the idea of the higher divorce rate after cohabitation has to do with what they call cohabitation effect. This concept states that people decide to get married because they have been together so long and get married even though they were not a good match to begin with. Some couples choose to get married for tax breaks while others who cohabit decide not to get married because of marriage penalties because their incomes combined would be too much. Cohabitation is currently seen as a transitional role in the US. Some people may like the idea of marriage and decide that cohabitation may not be their idea of a permanent goal. Some may see the divorce rates and think the idea of marriage is too risky (Stevenson & Wolfers, 2007).

Some think the answer to this dilemma could be marriage contracts. The idea is that a couple who goes forward with marriage would only marry for a certain amount of time. “Lawmakers in Mexico City proposed the creation of short-term, renewable marriage contracts with terms as brief as two years” (Ritchell, 2012). He also attributes this law to the common thought that marriages fail half the time; he also talked to a divorce attorney who thought this was not such a bad idea. Given that most marriages, according to the divorce attorney, end in divorce this could save some money that is going out, in the billions, per year because of divorce. During his work with divorces he sees a pattern with divorces; 7 year itch and the 20-year mark are the most common times for people to get or even consider a divorce from their spouse.

The purpose of the present study was to see if the idea of marriage for love is still relevant in current society. With all of the conflicting ideas of what marriage is and how it should be between two people; the idea of the study is to determine whether marriage as being the sought after goal in relationships and cohabitation as being an acceptable idea concerning long term goals in relationships.

Participants that engaged in the study were asked to fill out a demographic survey that asked them questions regarding sex, age, religious affiliation and if they came from a home that suffered from divorce or separation. The participants were then asked to fill out a 10 question survey asking how much they disagreed or agreed to different ideas concerning marriage and cohabitation.

Method

Participants

Participants were a convenience sample that included 18 undergraduate-student volunteers recruited through the Lindenwood Participant Pool (LPP), who received a small amount of extra credit in a college course they are enrolled in. In this study there were no exclusions in regards to the participants. Data were collected on the participants' age, sex, religious affiliation, marital status and if they had come from a home with a divorce or separation. There were 13 women and 5 men. Out of the 18 participants, 10 were single, 1 was married, and 1 was divorced. There were 6 freshman, 6 sophomores, five juniors, and 1 senior. Out of the 18 participants 8 reported they had come from a divorced household and 10 reported they were from a household that was still united in marriage. When participants reported their religious beliefs there were 17 who reported they were affiliated with a religion, while only 1 reported to have no religious affiliation.

Materials and Procedure

In the study, participants' were first asked to fill out a consent form (see Appendix A). This form was primarily used to get consent of each participant, let them know the time expected for the study, risks associated with the study and contact information. Participants' were then asked to fill out a demographic survey (see Appendix B) that asked information mentioned in the

participants section. A marriage/cohabitation survey (see Appendix C) was given to participants to assess their current views in regards to marriage and cohabitation. After the marriage survey, participants' were asked to look over a debriefing document (see Appendix D) that explained the study and provided contact information if they would like to know the results of the study once it was finished.

Participants signed up using a sign-up sheet that was downloaded from the Lindenwood Participant Pool (LPP). Participants signed up for the time that worked best for them under certain dates listed on the sign in sheet. The study took place in Young Hall in the psychology labs on the first floor. The room the participants used had one large round table with four chairs, two rectangle tables with two chairs at each. When the participants showed up for the time and date selected they were provided with an informed consent form. With this form was an identifying number to use on all other forms and surveys. The participant's identity was not used on any other forms other than the consent form. Upon completion of the informed consent each participant was provided with a demographic survey and the survey on marriage. The participants were informed the survey should only take 15 min. to complete, however, if more time was needed then they could take the extra time. This was not a timed survey. Once the participants finished the surveys they were provided with a debriefing form that explained the nature of the study and invited them to call or email the Investigator for the results of the study when it finished. The participants were verbally told and it was written on the debriefing form that results would be available in May 2013.

Results

The present study was intended to test the idea that marriage is not still relevant in current society and cohabitation is just as acceptable. There are several factors taken into account when

considering the results; such as, the correlation between sex and marriage, religious beliefs and marriage, past home experiences and marriage, as well as age and idea of marriage.

The statistics used for this study were descriptive statistics. The results of sex and marriage were 10 women who favored the idea of marriage while 4 men favored marriage, 1 woman favored cohabitation and no males favored cohabitation, and 2 women were undecided about marriage or cohabitation; while only 1 man was undecided. The results of religious beliefs section of the demographic survey were, 14 participants were religious and believed in marriage over cohabitation, 1 participant who reported religious affiliation believed in cohabitation over marriage, 2 participants who had religious affiliation were undecided, and the participant who was not affiliated with religion was also undecided. Past home experiences and marriage results were 5 participants who were from a home with a divorce still believed in marriage over cohabitation, 1 participant who was from a divorced home believed in cohabitation over marriage, 2 participant from a divorced home were undecided; while 9 participants not from a divorced home reported they believed in marriage, none of the participants from the married homes believed in cohabitation and 2 were undecided between the two. The results from the level of college education and marriage were; 6 freshman believed in marriage over cohabitation and 1 freshman was undecided; 3 sophomores believed in marriage, 1 believed in cohabitation, and 2 were undecided; out of the juniors 4 believed in marriage, none believed in cohabitation over marriage, and 2 were undecided; the senior believed in marriage over cohabitation.

According to the results of the study more of the participants believed in marriage over cohabitation. Out of all the participants 14 favored marriage, 1 favored cohabitation, and 3 participants were undecided. The answers on the marriage survey were scored by a scoring and counting method. Answers that fell in the range of 1-5 were not counted as a positive for the

questions. When scoring questions 6-8 were counted as a positive for that answer. The scores from the survey were then counted up for each participant and then there was a counting method for the demographics part of the study as well. According to the results of the study more of the participants believed in marriage over cohabitation. Out of all the participants 14 favored marriage, 1 favored cohabitation, and 3 participants were undecided.

Discussion

The researcher was unable to obtain an appropriate amount of participants due to the time the study was proposed during the semester. This study needed to include more participants to increase the sample size, because of this there could only be a descriptive statistics done on the results. Another aspect to consider if this study was to be replicated is there should also be more questions that address each of these topics being studied on marriage and cohabitation.

What we have learned so far is the idea of marriage is an ever changing concept throughout history. More studies on how these changes affect the society as a whole, as well as how these changes make sense at the time they happen in society is imperative to understanding the mechanisms that play a role in our social norms concerning marriage.

References

- Coontz, S. (2005). The radical idea of marrying for love. 15-23. Retrieved from <http://www.stephaniecoontz.com/books/marriage/chapter1.html>.
- Kilmann, P. R., & Vendemia, J. M. (2013). Partner discrepancies in distressed marriages. *Journal of Social Psychology*, 196-211.
- Lapp, D. (2012). What marriage means in today's "new normal." *The Witherspoon Institute*. 1-5.
- Marriage a history. (2012). *Psychology Today*.
- Ritchell, M. (2012, September 30). Marriage seen through a contract lens. *NYTimes.com*. Retrieved from <http://www.nytimes.com>

Stevenson, B., & Wolfers, J. (2007, March). Marriage and Divorce: Changes and their driving forces. *National Bureau of Economic Research*. Working Paper no.12944, 1-29.

Whitbourne, S.K & Whitbourne, S.B. (2011). Relationships. In. A. Robert Johnston, B. Eileen McKeever, C. Lynn. Pearlman. (Eds.) *Adult Development and Aging*. (pp 190-211). NJ: John Wiley & Sons.

Appendix A
Lindenwood University
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Informed Consent for Participation in Research Activities

“How Relevant is Marriage in Today’s Society?”

Principal Investigator _____ Stacey Harris _____
 Telephone: 314-630-2023 E-mail: seh106@lionmail.lindenwood.edu

Participant _____ Contact info

1. You are invited to participate in a research study conducted by Stacey Harris under the guidance of Dr. Nohara-LeClair. The purpose of this research is to assess the validity of marriage.

2. a) Your participation will involve

A demographic survey and a survey that best gauges how strongly you agree to statements asked regarding marriage and cohabitation; you will be asked to circle a number 1-8 (one being not at all agree and 8 being agree completely), as well as a demographic survey.

b) The amount of time involved in your participation will be *15 minutes*.

Approximately [100] participants will be involved in this research. Participants are recruited through the LPP.

3. There may be certain risks or discomforts associated with this research. They include:

Psychological distress due to past experiences or memories of divorce in families in which you lived in or relationships you are currently in or ended.

4. Your participation will contribute to the knowledge about the relevancies of marriage in current society and may help society make adjustments to our current institution and views of marriage.

5. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw.

6. We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location.
7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, (Stacey Harris) or the Supervising Faculty, (Dr.Nohara Le-Clair in Young Hall room 407A). You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Vice President for Academic Affairs at 636-949-4846.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

Participant's Signature

Date

Participant's Printed Name

Signature of Principal Investigator

Date

Investigator Printed Name

Appendix C Survey

You are able to skip any questions and/or withdraw at any time during the study.

Student ID# _____

- 1) I believe marriage (*a legal agreement between two people with a marriage license and a priest/court house to form a union*) is good for society.

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree

agree completely

- 2) Cohabitation (*the state or condition of living together as husband and wife without being married*) is just as good as marriage.

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree

agree completely

- 3) Marriage makes a bond stronger.

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree

agree completely

4) Marriage is just a piece of paper.

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree
agree completely

5) Marriage is an outdated bond between two people.

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree
agree completely

6) Marriage is tough...but worth the work.

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree
agree completely

7) Marriage makes a family stronger. (*a family is a situational circumstance that involves two or more people*)

1.....2.....3.....4.....5.....6.....7.....8

Not at all
agree
agree completely

8) Marriage was created as a contract between families for money and social purposes.

1.....2.....3.....4.....5.....6.....7.....8

Not at all agree completely

agree

9) Marriage was created for love between two people.

1.....2.....3.....4.....5.....6.....7.....8

Not at all agree completely

agree

10) Marriage puts a strain on relationships.

1.....2.....3.....4.....5.....6.....7.....8

Not at all agree completely

agree

Appendix D

Debriefing Document

Study Title: How Relevant is Marriage in Today's Society?

About this Study:

This study was to see how people feel about marriage in today's society. In this study you were asked to fill out a demographic survey, consent form and fill out the study survey questions about marriage and cohabitation. You were asked how much you agree with each statement on a scale from one to eight. One being: do not agree at all; and eight being: agree completely. With the survey questions I am looking to see how people view the institution of marriage today. I am seeking this information about marriage and cohabitation to see if there should be new laws that would accommodate current beliefs about marriage, if they differ from our conventional beliefs.

If you would like to know the results of this study you are more than welcome to contact the number or the email address listed under experimenters at the bottom of the page. Please be informed that the study will not be completed until the end of May 2013.

If you have questions, contact the experimenters.

Experimenter: Stacey Harris

Contact Information: 314-630-2023 seh106@lionmail.lindenwood.edu

Thank you for your participation!

Effect of Classical Music on College Students

Bridget Kiely³

This paper examined whether or not classical music has a positive or negative effect when it comes to studying school related material. College students were able to sign-up through the Linden Participant Pool. The study used convenience samples to select the participants of this study and given two tests to collect the data: one with music and one without music, and it was a within-participants study. The hypothesis was to detect whether or not classical music is beneficial to a student while comprehending school related material. The participants were also administered a demographic survey, two informed consents, a printed receipt, and a feedback letter. The hypothesis was supported and the data showed significance between the two variables after running a t-test through SPSS. While researching this subject I also found that this genre of music is helpful to many other things such as premature babies and the hearing impaired. Classical music is a genre that may need to be recognized more for its ability to improve things throughout our daily lives.

The purpose of this study was to investigate whether or not classical music helps a student while reading school related material. Classical music may not be the most popular genre we have today but when looking at it through an educational perspective it is the most beneficial. Exploring the importance of this genre helps point out how it can help students while studying school related material. Classical music is a genre that is not all that popular but it could be very beneficial to students before taking a test. The present study is looking at the benefits classical music may have.

There are many articles relating to the benefits of classic music. They suggest that it can help listening skills, hearing impaired, neonatal babies, IQ, as well as just generally in the classroom. Most people would not think that this genre could help so much variety of things but it can and does most of the time without us even knowing it. A study that was done in 2007 experimented to see if listening to Mozart affects listening ability. The results were what I would thought they would be; those who listened to slow Mozart music had higher listening test scores than those who did not (Bowman, 2007). In other research, it was found that similar studies could be beneficial to the hearing impaired as well. In an article about the meaning of music helping the vision and hearing impaired it states, "all music has potential to

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provoke images to the listener, one genre of music, program music is composed specifically to prompt ideas or images in the mind of the listener.” (Lagasse, 2001 & Darrow, 2007) (Bowman, 2007). The present study focuses on college age students but many different aspects of this method have been looked at even when it comes to younger children.

Classical music has also been studied to help a variety of ages as well; for example, a study looked at neonatal babies, which are those that are born prematurely, and how music helped babies in the NICU with stress symptoms, oxygen saturation, peak heart rate and respiratory parameters. Overall, the results of this study showed a decrease in stress on the infants in the NICU (Aydin, Yildiz, 2012). A quote from this article that really drew me in with relating it to my study was when the author stated, “music can be defined as the art of narrating feelings and thoughts with sounds.” (Aydin, Yildiz, 2012).

The Mozart effect is a very popular study that relates to this subject. Listening to Mozart’s music is suggested to those who are in need to boost their IQ (Lerch, 2000). Whether or not this helps on something as simple as listening to this composer while taking a test will, but in this study it shows over time the affect of this music on your brain can be very beneficial. Another study examined the effects of involving music in the academic environment. In this articles it talks about how music can affect our feelings and energy levels (Brewer, 1995). This relates to the current study because it makes one think that if music can affect one’s feelings and energy levels than it may alter our performance on a test or any school related material.

The proposed hypothesis is that there would be a positive correlation in listening to classical music while taking a comprehension test. The purpose of this is to see if listening to a specific genre of background music while studying will help or hurt an individual. The general method for this project was simple; the researcher administered demographic surveys and consent forms and then gave them two tests, one with music and one without. Their scores on the test was my raw data and overall the results of this experiment showed that classical music in fact does help an individual succeed more while attending to school related material.

Method

Participants

College students were recruited at Lindenwood University using sign-up sheets posted through the Lindenwood Participant Pool between the dates of March 18, 2013 and April 29, 2013. They had the option to volunteer for this study and there were a total of ten participants recruited. There were a total of seven women and three men all ranging between the ages of 19 and 49 years old. There were six people that spoke English as their native language and four that did not. All of the participants were college students but all varied in their levels of education. There were four freshmen, four sophomores, one junior, and one senior. There were seven Caucasian, one was Asian, one was African American, and one was under the category of other. The researcher then asked the participants if they listened to music while studying and if so, what kind? Five said yes and five said no, the one's that answered yes listened to a variety of genres. Two listened to classical, two listened to country, one listened to R&B, one Hip-Hop, and two listened to the category of other.

Materials and Procedure

The researcher started out by handing the participants a survey that consisted of general demographic questions. They included the sex, age, gender, ethnicity, grade level, and whether or not they listened to music while studying (see Appendix A). The participants were then given two informed consents to fill out that was used to inform the volunteer what they were participating in as well as give them consent and permission to continue with the study (see Appendix B). The researcher then followed by giving them two comprehensive passages to read which they then followed by answering a series of seven questions. The participants were given a passage that was alternated every time so that the researcher had counterbalancing the two. One of the passages was about concussions (see Appendix C) and the other one was about relics (see Appendix D). They started out without music each time so that each participant got equal treatment throughout the study. The researcher chose these passages because they were a sufficient length and were at an easy enough level that most college level student should have been able to understand the content. The passages were taken from a website called English for everyone

and they provided the passages as well as the questions. They were not timed but there was a limit of 20 minutes due to the fact most students wanted to participate in a study that did not take up too much of their time. The participants took these surveys and tests at scheduled times in the Lindenwood psychology labs. These labs are located on the bottom floor of Young hall and there are four small rooms in which the researcher was assigned accordingly. They were seated in chairs at tables and were given a pencil and paper to complete each of the tasks. The researcher recorded the data on the tests and they were kept safely for records.

Results

A paired samples t-test was used to compile the data and analyze the results from the Sound of Music study. This t-test was chosen because this study features a within-subjects design. A key characteristic of that design type is that the study that uses the same subjects in all of the treatment conditions with two separate variables. For example, in this study the same groups of participants were given the same two passages one with music and one without music and then their scores were compared in order to detect whether or not the music was beneficial to them comprehending the information of the passages. The results revealed the following: $t(9) = 3.464$, $p < 0.05$, $d = .57$.

Discussion

The results show that the t-value is .007, which fell inside our critical region based on an alpha region of .05 in the positive tail. This means that the null hypothesis is rejected because it falls inside the critical region. My hypothesis was supported which is not surprising. For example, a study done by Etaugh and Ptasnik (1982) hypothesized those students who habitually listen to familiar music while studying would have greater reading comprehension than those who did not listen to music while studying. This would lead one to rationalize that it is possible the genre of classical music can distribute the same results, as it did. Therefore, my findings that listening to music while studying is more effective than not listening to music while studying can be supported. In the future, the study could possibly be more effective to have more participants

in order to see how more detailed data would play out. For example, if we had 50 participants it would be fun to see the difference between the women's and the men's scores. Although this time around the study did not accumulate quite enough participants in order to see significance between the two.

References

- Aydin, D., & Yildiz, S. (2012). Effect of classical music on stress among preterm Infants in a neonatal intensive care unit. *Healthmed*, 6(9), 3162-3168.
- Bowman, B. J., Punyanunt-Carter, N., Cheah, T., Watson, W., & Rubin, R. B. (2007). Does Listening to Mozart Affect Listening Ability? *International Journal Of Listening*, 21(2), 124-139.
- Brewer, C. B. (1995). John Hopkins University school of Education. Retrieved from [http://education.jhu.edu/PD/newhorizons/strategies/topics/Arts in Education/brewer.htm](http://education.jhu.edu/PD/newhorizons/strategies/topics/Arts%20in%20Education/brewer.htm)
- Eatough, C., & Ptasnik, P., (1982). Effects of studying to music and post-study relaxation on reading comprehension. *Perceptual & Motor Skills*, 55, 141-142.
- Lerch, D. (2000, May 6). Scientific explanation for the Mozart effect. Retrieved from http://lrs.ed.uiuc.edu/students/lerch1/edpsy/mozart_effect.html

Appendix A

Demographic Survey

1. Gender: Male Female

2. Age:

3. Academic Standing: Freshmen Sophomore Junior Senior

4. Race (Check one)

- American Indian or Alaskan Native
- Asian
- African American
- Native Hawaiian or Other Pacific Islander
- White
- Other

5. Is English your first (native) language?

Yes No

6. Do you listen to music while studying? If Yes, why?

Yes No

Why?

7. If you answered yes to #6 then what Genre do you listen to most while studying?

Jazz Classical Rap Country R&B Hip-Hop Other

Appendix C

Passage One – No music

Directions: Read the passage. Then answer the questions below.

Concussions are brain injuries that occur when a person receives a blow to the head, face, or neck. Although most people who suffer a concussion experience initial bouts of dizziness, nausea, and drowsiness, these symptoms often disappear after a few days. The long-term effects of concussions, however, are less understood and far more severe. Recent studies suggest that people who suffer multiple concussions are at significant risk for developing chronic traumatic encephalopathy (CTE), a degenerative brain disorder that causes a variety of dangerous mental and emotional problems to arise weeks, months, or even years after the initial injury. These psychological problems can include depression, anxiety, memory loss, inability to concentrate, and aggression. In extreme cases, people suffering from CTE have even committed suicide or homicide. The majority of people who develop these issues are athletes who participate in popular high-impact sports, especially football. Although new sports regulations and improvements in helmet technology can help protect players, amateur leagues, the sports media, and fans all bear some of the responsibility for reducing the incidence of these devastating injuries.

Improvements in diagnostic technology have provided substantial evidence to link severe—and often fatal—psychological disorders to the head injuries that players receive while on the field. Recent autopsies performed on the brains of football players who have committed suicide have shown advanced cases of CTE in every single victim. In response to the growing understanding of this danger, the National Football League (NFL) has revised its safety regulations. Players who have suffered a head injury on the field must undergo a “concussion sideline assessment”—a series of mental and physical fitness tests—before being allowed back in the game. In an effort to diminish the amount of head and neck injuries on the field, NFL officials began enforcing stricter penalty calls for helmet-to-helmet contact, leading with the head, and hitting a defenseless player. Furthermore, as of 2010, if a player’s helmet is accidentally wrenched from his head during play, the ball is immediately whistled dead. It is hoped that these new regulations, coupled with advances in helmet design, will reduce the number of concussions, and thus curb further cases of CTE.

Efforts by the NFL and other professional sports leagues are certainly laudable; we should commend every attempt to protect the mental and physical health of players. However, new regulations at the professional level cannot protect amateur players, especially young people. Fatal cases of CTE have been reported in victims as young as 21. Proper tackling form—using the arms and shoulders to aim for a player’s midsection—should be taught at an early age. Youth, high school, and college leagues should also adopt safety rules even more stringent than those of the NFL. Furthermore, young athletes should be educated about the serious dangers of head injuries at an early age.

Perhaps the most important factor in reducing the number of traumatic brain injuries, however, lies not with the players, the coaches, or the administrators, but with the media and fans. Sports media producers have become accustomed to showcasing the most aggressive tackles and the most intense plays. NFL broadcasts often replay especially violent collisions while the commentators marvel at the players’ physical prowess. Some even feature weekly countdowns of the “hardest hits.” When the media exalts such dangerous behavior, professionals are rewarded for injuring each other on the field and amateurs become more likely to try to imitate their favorite NFL athletes. Announcers, commentators, television producers, and sportswriters should engage in a collective effort to cease glorifying brutal plays. In turn, fans should stop expecting their favorite players to put their lives on the line for the purposes of entertainment. Players must not be encouraged to trade their careers, their health, their happiness, and even their lives for the sake of a game.

Questions

- 1) Based on information in the passage, it can be inferred that all of the following statements are true except
 - A. tackling is not always dangerous; however, players who use improper tackling form may injure others
 - B. scientists have established a definitive link between players who die untimely deaths and the onset of CTE
 - C. NFL officials have done little to address the problem of CTE
 - D. athletes who are praised for exceptionally brutal hits are likely to continue engaging in such dangerous behavior
 - E. the NFL has done more to mitigate future cases of CTE than youth, high school, or college leagues have done
- 2) According to the passage, which of the following factors contribute(s) to the incidence of CTE in amateur players?
 - A. inconsistent application of safety regulations for all levels
 - B. lack of education about the dangers of head injuries
 - C. amateur players' desire to emulate professionals
 - D. None of the above
- 3) As used in paragraph 3, which is the best synonym for laudable?
 - A. praiseworthy
 - B. ineffectual
 - C. memorable
 - D. audacious
 - E. satisfactory
- 4) The author's tone in the final paragraph can best be described as
 - A. remorseful
 - B. hopeless
 - C. perplexed
 - D. insistent
 - E. arrogant
- 5) As used in the final paragraph, which is the best antonym for exalts?
 - A. castigates
 - B. venerates
 - C. mollifies
 - D. expedites
- 6) In describing the sports media, the author emphasizes its
 - A. responsibility
 - B. entertainment value
 - C. danger
 - D. sensationalism
- 7) In the final paragraph, the author mentions "sports highlights television programs" as an example of how
 - A. the media glorifies violence
 - B. amateurs learn to mimic professional athletes
 - C. professional athletes gain approval
 - D. All of the above

ANSWER KEY:

1. C
2. B
3. A
4. D
5. A
6. D
7. B

Appendix D

Passage two – with music

Directions: Read the passage. Then answer the questions below.

Right now, I am looking at a shelf full of relics, a collection of has-beens, old-timers, antiques, fossils. Right now I am looking at a shelf full of books. Yes, that's right. If you have some spare cash (the going rate is about \$89) and are looking to enhance your reading experience, then I highly suggest you consider purchasing an e-reader. E-readers are replacing the books of old, and I welcome them with open arms (as you should).

If you haven't heard of an e-reader and don't know what it is, then please permit the following explanation. An e-reader is a device that allows you to read e-books. An e-book is a book-length publication in digital form, consisting of text, images, or both, and produced on, published through, and readable on computers or other electronic devices. Sometimes the equivalent of a conventional printed book, e-books can also be born digital. The Oxford Dictionary of English defines the e-book as "an electronic version of a printed book," but e-books can and do exist without any printed equivalent.

So now you know what an e-reader is. But you still may be wondering why they put printed books to shame. E-readers are superior to printed books because they save space, are environmentally friendly, and provide helpful reading tips and tools that printed books do not.

E-readers are superior to printed books because they save space. The average e-reader can store thousands of digital books, providing a veritable library at your fingertips. What is more, being the size and weight of a thin hardback, the e-reader itself is relatively petite. It is easy to hold and can fit in a pocketbook or briefcase easily. This makes handling ponderous behemoths such as *War and Peace*, *Anna Karenina*, and *Les Misérables* a breeze. Perhaps the only drawback to the space-saving aspect of an e-reader is that it requires you to find new things to put on your shelves.

In addition, e-readers are superior to books because they are environmentally friendly. The average novel is about 300 pages long. So, if a novel is printed 1000 times, it will use 300,000 pieces of paper. That's a lot of paper! If there are about 80,000 pieces of paper in a tree, this means it takes almost 4 trees to make these 1000 books. Now, we know that the average bestseller sells about 20,000 copies per week. That means that it takes over 300 trees each month to sustain this rate. And for the super bestsellers, these figures increase dramatically. For example, the Harry Potter book series has sold over 450 million copies. That's about 2 million trees! Upon viewing these figures, it is not hard to grasp the severe impact of printed books on the environment. Since e-readers use no trees, they represent a significant amount of preservation in terms of the environment and its resources.

Finally, e-readers are superior to books because they provide helpful reading tips and tools that printed books do not. The typical e-reader allows its user to customize letter size, font, and line spacing. It also allows highlighting and electronic bookmarking. Furthermore, it grants users the ability to get an overview of a book and then jump to a specific location based on that overview. While these are all nice features, perhaps the most helpful of all is the ability to get dictionary definitions at the touch of a finger. On even the most basic e-reader, users can conjure instant definitions without having to hunt through a physical dictionary.

It can be seen that e-readers are superior to printed books. They save space, are environmentally friendly, and provide helpful reading tips and tools that printed books do not. So what good are printed books? Well, they certainly make nice decorations.

Questions

- 1) As used in paragraph 1, it can be inferred that "relics," "has-beens, old-timers, antiques, fossils" are all words that describe something
- ancient
 - useless
 - outdated
 - pathetic
- 2) The tone of the author can best be described as
- shrewd
 - conniving
 - persuasive
 - authoritative
- 3) According to the author, e-books
- were all once printed books
 - may be "born digital"
 - are able to display images
 - B and C
- 4) As used in paragraph 3, which of the following describes something that has been "put to shame"?
- A dog is left outside on a frigid, dreary winter night.
 - Team A defeats Team B in a humiliating rout.
 - Martha is caught stealing at the mall and is arrested in front of a crowd of curious bystanders.
 - The machine has countless moving parts and Dustin has trouble assembling it.
- 5) A thesis statement is a sentence that clearly describes what the author plans to discuss. Based on this information, which of the following sentences from the passage is the thesis statement?
- If you have some spare cash (the going rate is about \$89) and are looking to enhance your reading experience, then I highly suggest you consider purchasing an e-reader.
 - E-readers are replacing the books of old, and I welcome them with open arms (as you should).
 - An e-reader is a device that allows you to read e-books. An e-book is a book-length publication in digital form, consisting of text, images, or other electronic content that is readable on computers or other electronic devices.
 - E-readers are superior to printed books because they save space, are environmentally friendly, and provide helpful reading tips.
- 6) Based on its use in paragraph 4, it can be inferred that petite belongs to which of the following word families?
- jubilant, euphoric, playful
 - compact, diminutive, little
 - cute, attractive, charming
 - light, airy, spacious
- 7) Based on information in the passage, it can be inferred that War and Peace, Anna Karenina, and Les Misérables are all
- authored by Europeans
 - dense and impenetrable
 - timeless classics
 - awkward or unwieldy

ANSWER KEY:

1. C
2. C
3. C
4. B
5. D
6. B
7. D

Appendix E
Feedback Letter

Thank you for participating in my study. The present study was conducted in order to determine whether people are able to study better with background music or without it. I hypothesized that students who study with background music do better on comprehending the passages than those who do not. Please note that I am not interested in individual results; rather, I am only interested in the overall findings based on aggregate data. I am interested in studying this subject because I am curious to see the effects of listening to classical music while studying. I will be to apply this to not only my own life but I also will be able to inform others of the overall results as well.

No identifying information about you will be associated with any of the findings, nor will it be possible for us to trace your responses on an individual basis. If you are interested in obtaining the final results of the study based on aggregate data, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to let us know now or in the future. My contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study.

Sincerely,

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The Relationship between Color Preference and Consumer Products

Julia Leonard⁴

The study was conducted to determine if the color of an object had an effect on a person's motivation to purchase that product. The research hypothesis stated that color would have an effect on a person's motivation to purchase a product and that those differences would vary between sex as well. To test this hypothesis, the current study recruited participants to take a demographic survey and rate 60 colored products on a slideshow. The slideshow consisted of 60 pictures, 10 items colored in the 6 primary and secondary colors. The participants were given as much time as they needed to rate each item on a Likert scale from 0-would not buy to 10-would definitely buy. After the participants completed the study, the data were collapsed into color categories and each color had a score, per participant, from 0-100. It was concluded at the end of the study that the results supported the research hypothesis because the ANOVA revealed that there was a significant difference between men and women and their motivation to buy an item based on its color in 2 of the 6 colors.

In design, marketing, and advertising, professionals use color to evoke an emotion in their audience to buy their product. These professionals use color to establish the look and feel of their companies and their brand. Color choice is one of the most important tools to advertising professionals. A study done by Chandrashekar (2004) about how color affects a person's perception of price information of a product found that a subject's processing of price information varied from color to color. Chandrashekar (2004) studied what colors stores used for price advertising and found that many major retailers use red as a color to draw attention to reduced prices leading consumers to associate red with a low price.

A study conducted by Ko (2011) about influencing factors on color and product-function association revealed that participants did not just choose their favorite colors, they were drawn to certain colors depending on the item. The colors were defined by product functions, such as blue

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and deep cleaning or purple as soothing. For both males and females, blue was a general favorite but white was the favorite for product-function as a whole (Ko, 2011).

Seonsu and Barnes (1989) took an in depth look into color preferences in magazine advertising. They note that color has a certain psychological effect that plays a part in advertising; color can alter moods and instill a call to action. The most effective use of color reinforces the images and text, holds the attention of the reader, and awakens interest in the reader (Seonsu & Barnes, 1989). There is a stigma that men prefer blue and women prefer red. This stigma would suggest that magazines and advertisements targeted at different sexes would be focused on those colors, but they are not. Other variables that are less studied also affect color preference, such as race and culture. Seonsu and Barnes (1989) found that there is a lack of research and understanding about color psychology, what colors evoke which emotions, and what combination of colors is most effective for certain advertisements. It appears that there is a wide variety of advertising firms that are not using color to improve advertising response (Seonsu & Barnes, 1989).

Singh (2006) investigated color in marketing. She found that between 62-90% of the assessment of people and/or products is based on colors alone. Color is important in understanding attitude toward certain products and serves as insight into the marketing world by finding a color that evokes an emotion. Singh's research (2006) took an in depth look into the use of colors and advertising and touched on sex differences in color. She suggests throughout her article that men and women *perceive* color differently therefore leading to exclusive emotions which would impact their color preference. She makes no certain assumptions about sex differences and color perception.

Another marketing study conducted by Aslam (2006) looked to find cultural cues in color preferences for marketing. Color perception can be broken down into two cognitive categories: meanings and associations. Both facets are integral in the marketing world. Marketing and advertising professionals want to target their audience the most effective way possible and that involves making something that is meaningful and that can be associated with their product. This is often done in brands by the creative use of color. For instance, in some cultures, blue is seen as a predominantly feminine color. In that culture, a marketing professional should tailor their advertisements and products to colors that target their audience.

Color manipulation and application impacts a person's emotions and thoughts in a significant way and this leads to our present understanding of how the brain responds to color. Past research has looked at color perception, color associations, and color in a cultural view. By continuing research and testing more variables we can further study these processes by using new and different perspectives. The present experiment was designed to study the effect color has on consumerism. The study was conducted to try to determine if there was a significant variation in which colors are most desirable in consumer products. It was hypothesized that the results of the study would show a significant variability in color and that color would have an effect on whether the item would be purchased or not. To test this hypothesis the participants were shown 10 items colored in 6 different colors, using primary and secondary colors, and asked to rate their willingness to purchase the product on a scale from 0 (would not buy) and 10 (would definitely buy). These ratings were used to determine the effect of color on product consumerism.

Method

Participants

The participants were 52 undergraduate college student volunteers who signed up for the study through the Lindenwood Participant Pool (LPP) at Lindenwood University. There were 23 men and 29 women. The participants ages ranged from 18 to 31 ($M=19.67$, $SD=1.948$).

Participants' majors included 9 from the School of Business, 6 from the School of Communications, 5 from the School of Education, 4 from the School of Fine and Performing Arts, 2 from the School of Human Services, 23 from the School of Sciences, and 3 undecided. Participants were asked in the demographic survey what their favorite color was; 9.6% answered red, 3.8% answered orange, 1.9% answered yellow, 17.3% answered green, 40.4% answered blue, 13.5% answered purple, and 13.4% answered a variety of other answers, black for example. All of the participants who signed up for the study through the LPP received extra credit for an introductory social science class they were enrolled in.

Materials

The participants were first given two copies of an informed consent form (See Appendix A), to give them information about the study and ask their consent to continue. After receiving consent, the participants were given a demographic survey (See Appendix B), which included questions regarding their gender, age, major of study, and favorite color. After completing the survey, the participant was given a product rank sheet (See Appendix C) and given directions to rank each item based on their motivation to purchase them, between 0 (would not buy) and 10 (would definitely buy). The slideshow consisted of 60 pictures, each colored in Adobe Photoshop. The previously colored pictures were white and then colored using the same digital RGB mix for consistency in color between items. The pictures consisted of 10 items: a pair of

sunglasses, a toothbrush, a spatula, a t-shirt, a bike, a laundry hamper, a chair, a book bag, a cup, and a pair of scissors. These products were colored red, orange, yellow, green, blue, and purple (See Appendix D). Each of the participants was given as much time as they needed individually, but usually needed no more than 10 seconds to rank each product on the product rank sheet (See Appendix C). The study was conducted in the psychology lab at Lindenwood University's Young Hall. The room consisted of a table with four chairs, a computer, and no windows.

Procedure

As participants entered the room in which the study was taking place they were asked if they had signed up for the study on the LPP board. Once it was confirmed that they were part of the study they were given two copies of an informed consent form, one for them to keep and one for the experimenter to keep. After they signed the two copies of the informed consent form the participants were given the demographic survey. When the participants finished filling out the survey it was explained to them that they were going to be ranking products based on their motivation to purchase them. Each participant saw the same slideshow in which the colors shown were counterbalanced. The participants saw each slide individually, with one item and the item number on the slide. They were not timed in this endeavor to control for inaccurate results due to rushing. Each of the participants was given as much time as they needed individually, but usually needed no more than 10 seconds to rank each product on the product rank sheet. Once the participants completed the product ranking sheet and the slideshow was over, they were debriefed about the purpose of the study and given a feedback letter thanking them for their time and participation. Participants were given a participant receipt to be turned into the LPP office to earn extra credit for their introductory social science class for their participation in the study.

Results

The research hypothesis states that color would have an effect on a person's motivation to purchase a product and that those differences would vary between sex. After finding each total color score from each participant, an ANOVA was conducted for analysis of sex differences in color preference in products. The results from the ANOVA revealed that the participants' color preference varied significantly based on difference of sex between blue, $F_{(1,50)} = 11.975, p < .05$ and purple, $F_{(1,50)} = 17.122, p < .05$. This finding supports the study's hypothesis that color would have an effect on a person's motivation to purchase a product and that those differences would vary between sex. Colors that did not reveal sex differences were red, $F_{(1,50)} = 2.736, p > .05$, orange, $F_{(1,50)} = .001, p > .05$, yellow, $F_{(1,50)} = 3.938, p > .05$, and green, $F_{(1,50)} = .926, p > .05$.

Discussion

The study was conducted to test the hypothesis that color would have an effect on a person's motivation to purchase a product. The results of the study showed that there was a significant difference in two colors, blue ($F_{1,50} = 11.975, p < .05$) and purple ($F_{1,50} = 17.122, p < .05$), between men and women and their color preference of products but no significant difference in four of the six colors. Blue was rated in the demographic survey as the most favorable color by 40% of participants and it was also the most favorable color based on the color ratings from the experiment ($M=65.96, SD=19.55$). There was also a sex difference in the color preference of blue; men rated blue products higher than women with men having an average score of 75 and women having an average score of 58. However, women rated purple higher than men with an average rating of 64 compared to 39 in men. Purple was the most significant difference but this could be due to gender stereotypes and color; in some cultures it is undesirable for a man to favor a feminine color such as purple.

The least preferred color rated by both men and women was yellow ($M=40.75$, $SD=21.017$). There were some sex differences in the color preference for yellow with an average rating from men at 34 and an average rating from women at 43. There was no difference in color preference for men and women for orange with average ratings from men and women at 43. Green had a very small difference in color rating between men and women with an average rating of 56 from men and 52 from women. Red, although with no sex difference, was rated high by both men and women.

It is not surprising that blue is the most favored color among men and women. Blue was ranked as the most liked color prior to the study by the participants and the data from the study supports that initial observation. Ko (2011) also found that his participants, both men and women, preferred blue overall. However, red was not even one of the top three favorite colors yet both men and women preferred red based on their color rankings. This may attribute to the idea that items that are red are less expensive than other colors. Red is primarily used to advertise sales and clearance opportunities, leading people to associate red with cost effectiveness. The cost associated with the color red is also supported by Chandrashekar's research (2004). He found that participants perceived items advertised with red as less expensive than those advertised using other colors.

Although the present study produced significant results, there were limitations in regards to the study. These limitations include a short time period and a lack of hue and saturation variants. With a longer time period to conduct research there would be less constraints on participant number and it would be more possible to collect data from a large sample size. There also could have been more significance in the data if there were different hues and saturations of color involved in the study. In the future, it would be useful for researchers to include more

products and color variants. Color sets such as neons and pastels could be added to expand knowledge on color preference. Another interesting research direction would be toward color preference in advertising and not just in particular products.

References

- Aslam, M.M. (2006). Are you selling the right color? A cross-cultural review of color as a marketing cue. *Journal of Marketing Communications, 12*(1), 15-30.
- Chandrashekar, R., Suri, R., & Grewal, D. (2009). Red squares and blue circles: How color affects processing of price information. *Advances in Consumer Research - Asia-Pacific Conference Proceedings, 8372*.
- Ko, Y. (2011). Influencing factors on color and product-function association. *Psychological Reports, 108*(3), 861-873.
- Seonsu, L., & Barnes, J. H. (1989). Using color preferences in magazine advertising. *Journal of Advertising Research, 29*(6), 25-30.
- Singh, S. (2006). Impact of color on marketing. *Emerald Insight, 44*(6), 783-789.

Appendix A

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to rate items, presented to me on a computer screen, based on how likely I am to purchase each item and to provide simple demographic information about myself. I understand that I should be able to complete this project within 15 minutes. I am aware that I am free to skip any item rating in the unlikely event that I feel uncomfortable rating any of the items on any of the slides. I am also aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

(Signature of participant)

(Signature of researcher obtaining consent)

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Appendix B
Demographic Survey

SUBJECT ID NUMBER: _____ (Assigned by Researcher)

Circle or check the answer for each question that best describes you.

E. Are you: MALE FEMALE

F. What is your favorite color?

G. What age are you? _____

4) What is your major area of study?

Appendix C

Participant Number: _____

Product Ratings

How likely are you to purchase each item, ranked on a 10 point scale,
where 0 is **would not buy** and 10 is **would definitely buy**.

1		16		31		46	
2		17		32		47	
3		18		33		48	
4		19		34		49	
5		20		35		50	
6		21		36		51	
7		22		37		52	
8		23		38		53	
9		24		39		54	
10		25		40		55	
11		26		41		56	
12		27		42		57	
13		28		43		58	
14		29		44		59	
15		30		45		60	

Appendix D

Color Preference in Products

Spring 2013

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20



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Understanding Sexual Diversity

Nate Maeys⁵

This research assessed comfort levels toward sexual diversity. Sexual diversity encompasses anyone who identifies with a gender or sexual orientation other than one that is socially accepted for his or her gender. This research followed Ceglian and Lyons' (2004) study which assessed people's comfort levels towards cross-dressing men. They showed that comfort levels towards cross-dressing men could be altered. They explained their findings using the mere exposure effect which refers to the tendency that over time, people will develop a preference for something or someone they are repeatedly exposed to (Zajonc, 2001). Participants in the study filled out two surveys that assessed their comfort level towards sexual diversity. There were two groups in this study; an experimental group, which saw a video pertaining to sexual diversity between the two surveys and a control group who saw a filler video between the two surveys. Pre-exposure and post-exposure scores were compared to see if there was a change in the participants' level of acceptance towards sexual diversity. It was found that comfort levels increased across groups within this study. A significant difference between pre-exposure and post-exposure scores was found for the experimental group but not for the control group. These results show that the comfort levels towards sexual diversity can be altered in a relatively short period of time.

In every society there are norms that are expected to be adhered to. Deviations to some norms have seen an increase in acceptability (Tewksbury & Gagne, 1996). In Western society there are expectations regarding sexuality and anatomy. An individual's biological makeup is supposed to be congruent with their gender. Some individuals deviate from this norm and associate with a gender that is not congruent with their biological makeup (Tewksbury & Gagne, 1996).

Western culture assumes that people should be able to make quick judgements based on appearance (Tewksbury & Gagne, 1996). This assumption states that if you are biologically male you should appear male and if you are biologically female you should appear female. There are

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many people who do not fit this norm. These individuals fall under the lesbian, gay, bisexual, transgender, and questioning (LGBTQ) spectrum. Anyone who falls under this spectrum can be seen as deviating from the norm of a one-to-one relationship of anatomical sex and gender.

Anyone falling under the LGBTQ spectrum was classified as a sinner or having an illness up until the twentieth century (Tewksbury & Gagne, 1996). While sexual deviation is no longer classified as a medical illness, LGBTQ individuals still face a large amount of discrimination and often have stigmas placed on them. These stigmas are placed by society and stem from traditional ways that can often be hard to forget. Tewksbury and Gagne (1996) suggest that sexuality cannot be a dichotomous category labeling gender solely on biological makeup. Sexuality is instead a broad spectrum that manifests in many different forms and degrees.

The different forms of sexual diversity pertain to people falling under the LGBTQ spectrum. These individuals are displaying gender variance, an expression of one's gender or behavior that differs from the norm of Western society (Riley, Clemson, Sitharthan, & Diamond, 2013). People who are displaying gender variance are under a much broader category known as transgender. As these individuals are growing up, they may face several difficulties and they may have different needs as they are developing in order to properly cope with their daily difficulties.

One of the main things these transgendered individuals wanted was for those around them to have a better knowledge of gender variance. They felt that those around them in their daily lives did not truly understand what it meant to be transgendered (Riley, et al., 2013). As children these individuals felt anxious and fearful of rejection from those who took care of them. However, those individuals who received support from their caregivers reported that it was not enough to compensate for their daily lives. This need, while important, was not sufficient enough to make them feel safe from bullying and other social pressures (Riley, et al., 2013).

As children, these individuals were very confused about how other people saw them. They saw themselves as associating with the gender opposite to their biological make-up. It was very confusing to them because they did not understand why others did not see them as they saw themselves (Riley, et al., 2013). This shows that early on in their lives, LGBTQ individuals notice they are different from what is expected of them.

These needs changed and developed over time as acceptance and understanding grew. The early needs focused on having the ability to express their gender. As they got older their needs changed to focus on receiving support from parents, school members, and others (Riley, et al., 2013). Having support in school is very important to any child. Much of a person's life as a child and adolescent is spent in school where support can lead to success and development.

Oftentimes support is lacking for LGBTQ individuals causing many problems (Mufios-Plaza, Quinn, & Rounds, 2002). There is a general consensus in the literature that LGBTQ individuals lack adequate support in school. This lack of support may contribute to higher rates of suicide among LGBTQ youth than their non LGBTQ counterparts and they sustain higher rates of physical and verbal abuse which can lead to higher levels of substance abuse. At many high schools there is limited information available for LGBTQ teens. The lack of information and pressure from peers can lead to a feeling of isolation (Mufios-Plaza et al., 2002).

When schools implement support groups for LGBTQ students, they still may not fully benefit from them. Transgendered students are at a greater risk of discrimination than the other categories under the LGBTQ spectrum. This is because many policies placed to protect lesbian, gay, and bisexual (LGB) students do not incorporate gender identity expression (McGuire et al., 2010). Often times, transgendered teens are considered gay by their peers. Some of the

transgender students buy into it and hope to avoid any further confusion that could cause additional harassment (McGuire et al., 2010).

LGBTQ students sometimes experience harassment that is not from their peers. Sometimes school faculty get involved or they do not try to stop harassment they witness. Faculty harassment is less common than peer harassment, but it does occur in forms such as gestures and comments. Teachers who were approached by students for help sometimes turned them away or met them with ignorance about the harassment of their peers. It has been shown that LGB students feel safer at school when a faculty member is willing to provide support (McGuire et al., 2010).

McGuire et al. (2010) found that many LGBTQ students were aware of school policies that protected their safety and the ones that did not. However, they were able to come up with potential ideas to help improve these policies and better their lives at school. Incorporating their ideas could provide a higher feeling of belonging and safety (McGuire et al., 2010). Harassment can continue in college and can have the same impact as in high school aged LGBTQ students. College campuses have become more diverse in the last few decades and LGBTQ individuals make up a portion of the diversity (McKinney, 2005). As the diversity grows, a larger number of people have been identifying somewhere within the LGBTQ spectrum. These issues have become more apparent and some college campuses have taken measures to address the growing number of LGBTQ students on college campuses. Trans-inclusive residential policies and physical facilities are a few things that some campuses have incorporated, although many remain unaware or non responsive to transgender issues (McKinney, 2005).

Undergraduate and graduate students report that there is a lack of knowledge on transgender issues within their school, and that there is a lack of transgender resources at their

disposal (McKinney, 2005). These students would like to see things such as gender neutral bathrooms and well funded LGBTQ centers. Incorporating these aspects would give a more welcoming environment to schools. Students who sought counseling were often met with insufficient results, and many of these students were turned away or sent to professionals who were unsupportive or who lacked knowledge to assist them (McKinney, 2005).

Attitudes and opinions are formed throughout one's life; being shaped based on the amount of exposure to different stimuli. There is a phenomenon known as the mere exposure effect that can be used to shape opinions and attitudes. Research has shown that people show a greater preference for stimuli they have been repeatedly exposed to (Zajonc, 2001). This effect can be seen cross-culturally and is not limited to certain societies. For this to take place there does not need to be any interaction. The individual being repeatedly exposed to a stimulus will eventually show a preference for it without interacting with it in any way. This has been shown to work for a variety of different stimuli and in a variety of contexts; working without any positive or negative feedback. Over time the mere exposure effect can cause a preference of similar stimuli to take place, altering previously learned attitudes (Zajonc, 2001).

Attitudes can be altered through exposure to new objects, changing perceptions through mere exposure. Ceglian and Lyons (2004) sought to achieve a change in comfort levels to cross-dressing individuals. At birth, children in Western society are exposed to the idea that anatomy and gender go hand-in-hand. Children observe the world through a gender schema which allows them to make sense of how males and females should act in their respective society. The researchers wanted to find out if this preconceived notion held true with undergraduate college students and if their attitudes could be altered.

They initially assessed comfort levels the undergraduate students had towards cross-dressing men. This was done by giving them the Hudson and Ricketts' Index of Homophobia survey (Ceglian & Lyons, 2004). They chose to assess comfort levels towards men because cross-dressing men are ridiculed more than cross-dressing women in Western culture. Two men from Tri-Ess, a national organization for cross-dressing men, came to speak to the students one week after the initial comfort level assessment. When they spoke to the students they were wearing female clothing. The two men spoke about various topics including cross-dressing behaviors, discrimination, and family life (Ceglian & Lyons, 2004).

When the two men were done speaking and answering questions, the students were given a second assessment of their comfort levels towards cross-dressing men. Ceglian and Lyons (2004) hypothesized that exposure to the cross-dressing men would increase comfort levels. They were hoping that the mere exposure effect would take place. What they discovered was that all of the second scores showed an increase in comfort levels (Ceglian & Lyons, 2004). The mere exposure effect had taken place but it could also be the case that the students comfort levels increased because of the small time gap between the exposure and the survey. It would be important to see if repeated exposure had a lasting effect rather than a single experience.

The current study has been designed to expand upon Ceglian and Lyons (2004) research. It was expected that a measurable difference in comfort level would be shown in the experimental group from pre-exposure and post-exposure. It was expected that the control group would show no measurable difference in comfort level between pre-exposure and post-exposure. In the previously stated experiment, two cross-dressing men were utilized as the stimuli to try and elicit a change in comfort levels. In the current study a 6 min 55 s video on sexual diversity

was used as the stimuli for the experimental group and a 6 min 54 s video on movie effects was used as the stimuli for the control group.

Ceglian and Lyons' (2004) research had a week gap between the initial assessment of comfort levels and the stimuli. The current study had a pre-exposure survey followed by an immediate exposure to the sexual diversity video followed by a second survey. It was expected that the mere exposure to the two surveys and video would allow for the mere exposure effect to take place in a short amount of time.

Method

Participants

Participants were recruited through the Lindenwood Participant Pool (LPP). The LPP provides an ethical means of recruiting participants. Introductory courses in the social sciences, athletic training, and exercise sciences were eligible to take part in the LPP recruitment. Professors within these disciplines were given the chance to allow their students to be part of the LPP. Students who chose to participate were compensated with bonus points in their eligible course. There were 48 participants; of which 19 were male and 29 were female with a mean age of $M = 20.25$ ($SD = 2.488$).

Participants were asked if they had any previous education on sexual diversity, any friends/family who fell under sexual diversity, and if they have had a coworker who falls under sexual diversity; 11 said yes, 34 said no, and 3 were unsure about the education; 16 said yes and 32 said no to the friends/family; 19 said yes, 28 said no, and 1 was unsure about the coworker.

Materials and Procedure

Participants signed up for the study via the LPP bulletin board located on the fourth floor of Young Hall at Lindenwood University. There was a description sheet posted on the bulletin board briefly describing the experiment (see Appendix A). This was used to give the participants

a quick overview of the study. Below the description sheet there were sign-up sheets. The sign-up sheets were provided by the LPP and were designed to allow participants to sign up for specific time slots on specific days.

The rooms were obtained through the LPP and were located on the first floor of Young Hall. Each room, provided by the LPP, had a table or desk for the participants to sit at. When the participants arrived, they were given an informed consent form to fill out (see Appendix B). The consent form was used to inform the participants of the nature of the study and the expected amount of time it would take to complete. The informed consent stated it would take approximately 15 min to complete the study. In the informed consent it was stated that participants were free to skip any questions they were uncomfortable answering or terminate the experiment at any time with no repercussions.

After filling out the consent form, participants were asked to fill out the first of two questionnaires (see Appendices C and D). These questionnaires were derived from the LGBTQA Resource Center's Index of Homophobia (n.d; Hudson & Ricketts, 1980). The original survey had 25 questions on it which was broken down into two different surveys, arbitrarily omitting one question. It was necessary to omit one question to make the two surveys in the current study equal in length. The original survey used the word queer to indicate the differences in sexuality. The word queer was omitted and changed to phrases such as cross-dresser, gay, bisexual, transgender, and lesbian to encompass a broader spectrum of sexual diversity. The two resulting surveys were similar in structure and each one consisted of 12 questions.

On each survey, there were non-reverse score questions and reverse score questions. Non-reverse score questions were scored equally to the number the participant chose from the Likert scale. If they chose 5 then that question was scored as a 5. Reverse score questions were

scored opposite of the number the participant chose from the Likert scale. If the participant chose 5 then the score for that question was 1. The two surveys were sub-labeled A and B. Some of the participants received Survey A as their pre-exposure assessment and others received Survey B as their pre-exposure assessment. This was done randomly for both groups in order to counterbalance the surveys and reduce biases.

After filling out the first questionnaire, participants used either a Toshiba laptop or an iPad to view one of two videos. Each video was a TED talk; one was titled *Fifty shades of gay* by artist iO Tillett Wright (2012); which was cut down in time: start 8:45 end 15:40 (6 min and 55 s). The other was titled *A cinematic journey through visual effects* by Don Levy (2012); which was played in its entirety (6 min and 54 s). These videos were taken from the TED talk website and put into Windows Movie Maker to ensure no outside material was viewed by the participants. There were comments and other suggested material on the website that could have led to biases.

When the participants were finished viewing their respective video, they filled out a second questionnaire. The second survey each participant took depended on if they took Survey A first or Survey B first. If the participant received Survey A for their pre-exposure survey, Survey B was used as the post-exposure survey. The second survey, A or B, was used to assess their post viewing comfort level towards sexual diversity. The questionnaires were counterbalanced to avoid biases.

Participants were then given a demographic survey that was designed by the primary investigator (see Appendix E). The demographic survey consisted of five questions: what is the participant's gender (male, female, or other); what is the participant's age; has the participant had any previous sexual diversity education such as in high school; does the participant have a close

family member or friend who falls under sexual diversity; has the participant ever worked with someone who falls under sexual diversity?

Once the participants were finished with the demographic survey they were debriefed and given a feedback letter (see Appendix F). The feedback letter provided the hypothesis and nature of the study. The web links to both videos used in the experiment were provided in the feedback letter. There were also three web links provided within the feedback letter for participants if they were interested in learning more about transgendered people. At this time participants were given an LPP receipt that they used to redeem for bonus points in their class. This was their compensation for taking part in the study. The LPP receipt was their documentation of participating in my study and allowed them to earn bonus points toward their class.

Results

The current study was designed to analyze pre-exposure and post-exposure comfort levels toward sexual diversity. This was done using a 2(group) X 2(exposure) Analysis of Variance (ANOVA). It was discovered that there was a significant main effect of test, $F(1,46) = 10, p = 0.002$ showing a significant difference between the pre-exposure scores and post-exposure scores across both groups. There was a significant main effect of group, $F(1,46) = 7.475, p = 0.009$. The ANOVA also showed results approaching significance for an interaction of test by group ($F(1,46) = 4.014, p = 0.051$), which required post hoc tests to determine the location of this interaction.

Separate independent t-tests were conducted for the pre-test and the post-test. The pre-test resulted in a significant difference, $t(46) = -2.097, p = 0.042$; $M = 34.042, SD = 9.693$, among the participants which did not support the original hypothesis. The post-test resulted in a

significant difference, $t(46) = 3.152, p = 0.003$; $M = 31.625, SD = 10.392$, which supported the original hypothesis.

A paired t-test was run for both the experimental group and the control group to determine if there was a significant difference between pre-scores and post-scores within each group. The experimental group t-test showed a significant difference between pre-scores and post-scores, $t(23) = 3.317, p = 0.00$,) with a pre-score ($M = 31.208, SD = 11.132$) and a post-score ($M = 27.292, SD = 12.139$). The control group t-test showed no significant difference between pre-scores and post-scores, $t(23) = 0.996, p = 0.33$, with a pre-score ($M = 36.875, SD = 7.164$) and a post-score ($M = 35.958, SD = 5.842$).

A chi-square test was run to determine if exposure to a family member or friend contributed to the significant difference in pre-exposure scores among groups. The chi square test showed there was a significant difference in the number of people who had exposure to a family member or friend who identifies within sexual diversity between the experimental and control group, $\chi^2(1) = 6, p = 0.0143$. An independent t-test was run to determine if there was a difference in pre-exposure scores for those who answered yes to the family or friend question and those who answered no. The t-test showed no significant difference in scores, $t(46) = 1.662, p = 0.103$; those who answered yes had a $M = 30.813, SD = 10.528$, and those who answered no had a $M = 35.656, SD = 8.986$.

There were a larger proportion of men in the control group than there was in the experimental group. An independent t-test was run to determine if there was a sex difference that could potentially explain the pre-score differences between the groups. The t-test resulted in a significant difference of pre-exposure score based on sex ($t(46) = -2.512, p = 0.016$), men scored

$M = 38.157$, $SD = 9.627$ and women scored $M = 31.34$, $SD = 8.89$. This showed that women had higher pre-exposure comfort levels towards sexual diversity than men.

Discussion

The initial ANOVA showed a main effect of test and a main effect of group. It was necessary to run post hoc tests to determine where the significant difference occurred. The original hypothesis stated there would be a measurable difference between the pre-exposure and post-exposure scores for the experimental group but no measurable difference from pre-exposure to post-exposure for the control group. The null hypothesis was rejected after the post hoc test, which showed a significant difference from pre to post-exposure in the experimental group but not in the control group.

However, it was also expected that the pre-exposure scores would show no significant difference between the experimental group and control group. The t-test addressing this issue showed there was a significant difference between the groups regarding the pre-exposure scores. This portion of the null hypothesis was failed to be rejected. It could be the case that the uneven sex distribution among groups had an effect on these results. It was found that men lower comfort levels towards sexual diversity on average than women. The uneven distribution of men in the control group could have skewed the data for pre-exposure scores.

This experiment was similar to Cyglian and Lyons' (2004) research in that post-exposure comfort levels on average rose for the experimental group. The difference was this experiment had a control group to compare the results of the experimental group with. Cyglian and Lyons (2004) found that men had the lowest pre-exposure comfort level scores. These findings were replicated in this experiment which showed men scored, on average, lower pre-exposure comfort levels towards sexual diversity than women.

One of the limitations with this study was the time constraint. The mere exposure effect, as stated before, takes time to occur. If this study could have been conducted over several trials, with the same individuals being repeatedly exposed to the treatment stimuli it could have shown different/stronger results. The time constraint also limited the sample size of this study. A larger sample size could have reduced some biases and allowed for different results. Each group only had one video which could have led to biases as well.

For future research it would be a good idea to lengthen the amount of time given to the study. This would allow more participants to be included in the sample size which could help eliminate biases, allowing for a possible interaction of group and test to occur. It could be useful to have multiple trials in which the same participants receive treatment over time, giving the mere exposure effect more time to take place. Having multiple videos available to each group could reduce biases as well. For future research it would be a good idea to use two or three videos for each group, counterbalancing the sexual diversity videos within the experimental group and the filler videos in the control group, to ensure that the videos being used are a fair stimulus.

The surveys participants received were titled Transgender Survey with the sub-labels of A and B. It would be beneficial to eliminate the title of Transgender Survey and simply label them Survey A and Survey B. There may have been some confusion as to what was meant by Transgender. As it was stated earlier Transgender is one of the sexual diversity categories addressed in the LGBTQ. Labeling the surveys as Transgender Surveys was an unfair title because the study was addressing a broad spectrum of sexual diversity. Eliminating the misleading title could help reduce any confusion that may have been present during the survey process. Similarly, the demographic survey should be altered to address the term sexual diversity

rather than transgender. There was some confusion as to what was meant by the term transgender on the demographic survey. Again using the term transgender was not appropriate because the study was looking at a broad spectrum of sexual diversity.

Addressing the issue of sex would be an important step for future research. If this experiment were replicated it would be beneficial to assign an even number of men and women in the experimental group and control group. This could help address the issue discovered regarding the pre-exposure difference among men and women.

References

A cinematic journey through visual effects. (2013). Retrieved from

http://www.ted.com/talks/don_levy_a_cinematic_journey_through_visual_effects.html

Ceglian, C. M., & Lyons, N. N. (2004). Gender type and comfort with cross-dressers. *Sex Roles, 50*(7), 539-546.

Fifty shades of gay. (2013). Retrieved from

http://www.ted.com/talks/io_tillett_wright_fifty_shades_of_gay.html

Hudson, W. W., & Ricketts, W. A. (1980). A strategy for the measurement of homophobia.

Journal of Homosexuality, 5(4). Retrieved from

<http://www.bgsu.edu/downloads/sa/file14259.pdf/>

McGuire, J. K., Anderson, C. R., Toomey, R. B., & Russell, S. T. (2010). School climate for transgender youth: A mixed method investigation of student experiences and school responses. *Journal of Youth Adolescence, 39*, 1175-1188.

McKinney, J. S. (2008). On the margins: A study of the experiences of transgender college students. *Journal of Gay & Lesbian Issues in Education, 3*(1), 63-76.

- Mufioz-Plaza, C., Quinn, S. C., & Rounds, K. A. (2002). Lesbian, gay, bisexual and transgender students: Perceived social support in the high school environment. *The High School Journal*, 84(4), 52-63.
- Riley, E. A., Clemson, L., Sitharthan, G., & Diamond, M. (2013). Surviving a gender-variant childhood: The views of transgender adults on the needs of gender-variant children and their parents. *Journal of Sex & Marital Therapy*, 39, 1-23.
- Tewksbury, R., & Gagne, P. (1996). Transgenderists: Products of non-normative intersections of sex, gender, and sexuality. *Journal of Men's Studies*, 5(2), 105-127.
- Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. *Current Directions in Psychological Science*, 10(6), 224-228.

Appendix A

EXPERIMENT DESCRIPTION

Project #: _____

Experimenter's name(s): Nate Maeys

Experimenter's contact information: njm489@lionmail.lindenwood.edu

Approximate amount of time experiment will take: 10 minutes

Type of experiment (survey, interactive, etc.): Surveys and watching a video

Experiment name: Understanding Transgender

Description of the experiment: You will answer two questionnaires regarding the topic of transgendered individuals and a demographic survey. Transgendered individuals are people who identify with a gender different than their biological one. The first questionnaire will be given before viewing a brief video clip. The second questionnaire will be given after viewing the video clip. You will then answer a short demographic survey.

Appendix B

Informed Consent Form

I, _____ (print name), understand that I will be taking part in a research project that requires me to complete two surveys regarding the topic of transgendered people and a short demographic survey. I understand that I will also be viewing one of two short videos during this study. I understand that I will take one of the transgender surveys before viewing the video and another one after viewing the video. I understand that I should be able to complete this project within 15 minutes. I am aware that I am free to skip any questions in the unlikely event that I feel uncomfortable answering any of the items on either the demographic survey or the transgender surveys. I am also aware that my participation in this study is strictly voluntary and that I may choose to withdraw from the study at any time without any penalty or prejudice. I should not incur any penalty or prejudice because I cannot complete the study. I understand that the information obtained from my responses will be analyzed only as part of aggregate data and that all identifying information will be absent from the data in order to ensure anonymity. I am also aware that my responses will be kept confidential and that data obtained from this study will only be available for research and educational purposes. I understand that any questions I may have regarding this study shall be answered by the researcher(s) involved to my satisfaction. Finally, I verify that I am at least 18 years of age and am legally able to give consent or that I am under the age of 18 but have on file with the LPP office, a completed parental consent form that allows me to give consent as a minor.

 (Signature of participant) Date: _____

 (Signature of researcher obtaining consent) Date: _____

Nate Maeyes

Phone: 573-705-2108

Email: njm489@lionmail.lindenwood.edu

Supervisor:

Dr. Michiko Nohara-LeClair

Course Instructor

(636)-949-4371 mnohara-leclair@lindenwood.edu

Appendix C

Subject # _____

Transgender Survey^(A)

This questionnaire is designed to measure your comfort level associated with transgendered individuals. This is not a test, so there are no wrong answers. Answer each item as carefully and accurately as you can by placing a number beside each one as follows:

1	2	3	4	5
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

____ 1.) I would enjoy attending social functions at which cross-dressing people were present.

____ 2.) I would feel comfortable knowing that my clergy person was also bisexual.

____ 3.) If I saw two men holding hands in public, I would feel disgusted.

____ 4.) I would feel uncomfortable if a member of my sex made an advance towards me.

____ 5.) I would feel disappointed if I learned that my child was cross-dressing

____ 6.) If a member of my gender made an advance towards me, I would be offended.

____ 7.) I would feel uncomfortable if I learned that my spouse or partner was cross-dressing.

____ 8.) I would feel at ease talking with a gay person at a party.

____ 9.) I would feel uncomfortable if I learned that my boss was gay.

____ 10.) It would disturb me to find out that my doctor was cross-dressing.

____ 11.) I would feel uncomfortable knowing that my son or daughter's teacher was bisexual.

____ 12.) I would feel comfortable working closely with a cross-dresser.

Adapted from:
LGBTQ-Q Resource Center index of homophobia

Appendix D

Subject # _____

Transgender Survey_(B)

This questionnaire is designed to measure your comfort level associated with transgendered individuals. This is not a test, so there are no wrong answers. Answer each item as carefully and accurately as you can by placing a number beside each one as follows:

1 2 3 4 5
Strongly Agree Agree Neutral Disagree Strongly Disagree

- ____ 1.) I would feel comfortable working closely with a gay man.
- ____ 2.) If a member of my sex made a sexual advance towards me, I would feel angry.
- ____ 3.) I would feel uncomfortable if I learned that my neighbor was a cross-dresser.
- ____ 4.) I would feel comfortable knowing I was attractive to members of my gender.
- ____ 5.) I would feel uncomfortable being seen in a gay bar.
- ____ 6.) I would feel nervous being in a group of cross-dressers.
- ____ 7.) I would be upset if I learned that my sibling was bisexual.
- ____ 8.) I would feel comfortable if I learned that my child's teacher was a cross-dresser.
- ____ 9.) I would feel that I had failed as a parent if I learned that my child enjoyed cross-dressing.
- ____ 10.) It would not bother me to walk through a predominantly gay section of town.
- ____ 11.) If a member of my gender made an advance towards me, I would feel flattered.
- ____ 12.) I would feel comfortable if I learned that my best friend of my gender was bisexual.

Adapted from:
LGBTQ-Q Resource Center index of homophobia

Appendix E

Subject # _____

Demographic Survey

1. Are you male, female, or other?
2. How old are you?
3. Did your high school provide any transgender education? (ie; in a sex education class)
4. Do you have a family member or close friend who is transgender?
5. Have you ever worked with a transgender individual?

Appendix F

Feedback Letter

Thank you for participating in my study. The purpose of this study was to find out if viewing a short video portraying an inside look to transgendered life would elicit an increase in comfort level versus viewing a video unrelated to transgender life. My hypothesis is that people viewing the inside look into transgendered life will have a better understanding of what it means to be transgendered and will therefore score higher on levels of comfort post viewing. I believe high schools should incorporate transgendered sections into courses such as sex education. These courses could be the foundation for a better understanding of transgendered individuals and lead to a lasting higher comfort level. Discrimination towards transgendered people is prevalent in schools, work places, and in general day to day life. I think it is derived from a lack of understanding which causes people to be uneasy. I hope to raise comfort levels towards transgendered people through a means that would be applicable in a common classroom setting. Videos and slide shows can be utilized in classroom settings easier than searching for transgendered people to speak to a class. If you did not view the transgender video and would like get information about what it means for these people, or if you did view the video and are interested in learning more please visit the following links.

<http://www.freepatentsonline.com/article/College-Student-Journal/96619966.html>

<http://dx.doi.org/10.1080/0092623X.2011.628439>

http://dx.doi.org/10.1300/J367v03n01_07

Please note that I am not interested in your individual results; rather, I am only interested in the results of a large group of consumers, of which you are now a part of. No identifying information about you will be associated with any of the findings.

If you have any questions or concerns regarding any portion of this study, please do not hesitate to bring them up now or in the future. My contact information is found at the bottom of this letter. If you are interested in obtaining a summary of the findings of this study at a later date, please contact me and I will make it available to you at the completion of this project which is expected to be in May of 2013.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

Nate Maeys: Phone: 573-705-2108 (njm489@lionmail.lindenwood.edu)

Supervisor:

Dr. Michiko Nohara-LeClair 636-949-4371 (mnohara-leclair@lindenwood.edu)

Types of Procrastinators: Perfectionists vs. Crisis-Making Procrastinators

Terry McRoberts⁶

The purpose of the study was to see if college students who procrastinate show differences in the different types of procrastination. The two types of procrastination used in the study are perfectionists and crisis-making procrastinators. Perfectionist procrastinators are individuals who have difficulties completing a task due to lack of satisfaction, and Crisis-making procrastinators are individuals who postpone task until there is a short amount of time left. The hypothesis is that college students are more likely to be crisis-making procrastinators rather than perfectionist procrastinators when completing an assignment. The method involved surveying college students in the Lindenwood Participant Pool on their likelihood to procrastinate in various situations. The survey consisted of 14 questions; 7 questions focused towards perfectionists and 7 questions focused towards crisis-making procrastinators. Results showed that college students were more likely to be crisis-making procrastinators than perfectionist procrastinators. Results also showed that there was a difference between gender and type of procrastinator as well as age and level of procrastination.

Procrastination has been a major study in the field of psychology. Procrastination has been defined in many different terms, but an operational definition is the amount of time or number of times an individual postpones during the process of completing a task. For example, a college student who waits two days to complete an assignment assigned three weeks ago is measured to have high levels of procrastination. An example of low levels of procrastination would be a college student who plans ahead and does equal portions of an assignment from the beginning date to the due date. Many researchers have focused on the study of procrastination and identified many topics, such as why people procrastinate, what factors contribute to procrastination, and how procrastination affects individuals in their daily activities.

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Perrin, Miller, Haberlin, Ivy, Meindl and Neff (2011) examined college students' amount of studying when practicing for weekly exams. To do this, there were two scheduled practice quizzes available for students, continuous and scheduled. With the continuous practice quizzes, the set of practice quizzes were available for the students throughout the week up until the day of the quiz. But with the scheduled practice quizzes, students had to complete the first quiz in order to take the second quiz, and so forth. For the continuous practice quizzes, students did not have to complete the first quiz to access the second quiz. Perrin et al. (2011) expected this to decrease the behavior of completing the practice quizzes because the reinforcement of getting access to the next quiz was also available. In other words, students who were given the continuous practice quizzes were more likely to procrastinate because there were no levels of completion. The results showed that a large portion of studying was done toward the end of the week for students who were given the continuous practice quiz schedule (Perrin et al., 2011). For students who were given the scheduled practice quizzes, the study patterns were evenly spaced throughout the week; each day had very similar amounts of studying. The results showed that when there were forced deadlines at each interval of a time period; students were less likely to procrastinate (Perrin et al., 2011). This is helpful but less likely to happen in many institutions because it creates more work for both the students and professors. Researchers have found that procrastination can negatively affect students' grades. Therefore, if professors sense that procrastination is a possible cause for students' bad grades, applying deadlines for rough drafts may help.

Another study focused on perfectionism, procrastination and psychological distress. The study focused on students' grade expectations during a semester. At the beginning of the semester, students would expect to perform well (perfectionism), but toward the end of the semester, they would work hard to receive a grade lower than what they initially expected

(psychological distress). The hypothesis for the study was that procrastination would be the cause of students transferring from high expectations to lower expectations for their overall grades (Rice, Richardson, & Clark, 2012). This is common among many college students who tend to procrastinate. The idea is that students plan to achieve a high grade, but in the process of procrastination, they end up earning a grade that is not as high as their initial expectations, and this result in distress. The results showed that there was no significant effect of distress for students who showed high perfectionism in the early semester. But students who were more likely to procrastinate early in the semester showed more distress at the end of the semester. Rice et al (2012) highlighted the effects of procrastination between perfectionism and distress and how both correlate. It is important that students learn how to improve their time management skills; this will make it less likely for students to procrastinate.

The study done by Ferrari, Barnes and Steel (2009) dealt with regret due to procrastination. There were three types of procrastinations used in the study; arousal, avoidant and non-procrastinators (Ferrari et al., 2009). The etiology of arousal procrastination was due to environmental factors (such as traffic or alarm clock), avoidant procrastination was due to internal factors (such as lack of satisfaction) and non-procrastinators would complete the tasks in a timely manner. Ferrari et al. (2009) hypothesized that both arousal and avoidant procrastinators could show more regret than non-procrastinators when reflecting on past events that was delayed. The survey consisted of a variety of variables that involve relationships with others, career decisions, financial history, and so on. The survey results showed that both arousal and avoidant procrastinators should more regret compared to non-procrastinators (Ferrari et al., 2009). The importance of this study is that procrastination can affect long term decisions that are

very important in life. The less likely individuals are to procrastinate, the more likely they are to make better decisions.

The study done by Cook (2000) dealt with measuring the level of positive outcomes based on counselor's etiology to the patient's procrastination. There were three different attributions made by the counselors; internal factors, external factors, and no additional factors. The internal factors were focused on things that the patient could control. The external factors focused on things that the patient could not control, and the counselors who gave no additional factors would listen to the patient on their reasoning of procrastination. Cook (2000) hypothesized patients that were given additional factors that contributed to their procrastination would perform better than patients who were not given any factors. Cook (2000) incorporated the idea of cognitive dissonance and how the study would support its theory. Cognitive dissonance is the level of inconsistency between two or more variables. For example, someone being told to lie to another person for money would have high cognitive dissonance if they received only one dollar, but would have low cognitive dissonance if they received \$20 or an amount they would feel comfortable with for lying. But, the results of the study showed that patients who received no additional factors outperformed patients who received additional factors (Cook, 2000). One implication was that patients who received no additional factors were able to interact with counselors about their procrastination in a way they usually do not, therefore they were able to identify that it was their responsibility to fix their procrastination instead of placing the cause to additional factors. Cook (2000) used the results of the study to implicate that it may be helpful to alter the goal of therapy from trying to find a cause for patients' issues to helping patients take more responsibility to fixing the issue.

An earlier study focused on the relationship between interpretations of procrastination and the motivation to change (Strong, Wambach, Lopez & Cooper, 1979). Researchers believed that interpreting situational factors to explain procrastination would increase the likelihood to perform better in the future. They hypothesized that people who are given interpretations that they can control (such as lack of confidence) are more likely to perform better than people who are not given any interpretations (Strong et al., 1979). There were three groups that received different types of interpretations: controllable, uncontrollable and reflection. The controllable group was given interpretations that they could control, such as lack of understanding, coming up with excusable explanations, low competence, and the like. The uncontrollable group was given interpretations that were unsolvable. The reflection group did not receive any interpretations: instead, counselors would focus on asking questions to keep the participant talking about their own interpretations. Unlike Cook (2000) the results for this study showed that people who were given controllable interpretations performed better than people who did not receive any interpretations (Strong et al., 1979). There are possible implications on why both studies have different results. In Cook's (2000) study, the confederates that interviewed the control group would ask the participant questions to target self-responsibility. But in Strong et. al (1979) study, confederates would ask questions to help continue the interview, not focusing on a target solution. Another implication is time frame. Both studies were conducted in two different generations, therefore there are many environmental and cultural changes done over time that could affect the way people in society procrastinate or interpret the responsibility of procrastination.

My study focused on two different types of procrastinators (perfectionist and crisis-making procrastinators) and what factors may contribute to each one. The objective was to show

that perfectionist procrastinators have difficulty completing tasks due to lack of satisfaction and crisis-making procrastinators having difficulty completing tasks due to postponing.

Method

Participants

Participants were recruited through the Lindenwood Participant Pool (LPP), which included all students enrolled in select courses of Psychology, Sociology, Athletic Training, Anthropology and Exercise Science. He/she earned bonus points for participating in the study. There was a total of 41 participants (25 men and 16 women; $M = 19.83$ years; $SD = 6.15$ range = 17 to 23 years; mode = 20). There were a total of 21 freshman, 10 sophomores, 8 juniors and 2 seniors. When participants ranked their level of procrastination from a scale of 1-5 (1 being the least and 5 being the most) the average was 3.43. When asked what factors contributed to their procrastination, 21% stated school, 6% stated work, 25% stated extracurricular activities, 12% stated friends, 6% stated family, 9% stated sports, 6% stated video games, 9% stated video games, and 3% stated relationship.

Materials

The assessment consisted of four different forms along with the Procrastination Survey. The first form is the consent form (see Appendix A). The consent form consisted of a description of the study, the expected time to complete the study, the right to withdraw from the project at any time, the confidentiality of all personal information, confirming to be at least 18 years of age, and the researcher's contact. There were two copies of consent forms for each assessment; one for him/her and the other for the researcher. The next form was the demographic survey (see Appendix B), which consisted of four questions, gender, grade level, age and level of

procrastination. Gender was asked to identify if there was a difference between gender regarding perfectionist and crisis making procrastinators. Age was asked to see if younger students were more likely to be crisis-making procrastinators rather than perfectionist procrastinators. He/she was also asked to rate their level of procrastination to see if a specific range correlated with a crisis-making procrastinator or a perfectionist procrastinator.

The next form that was given was the procrastination survey (see Appendix C). This consisted of 14 questions; 7 questions focused on crisis-making procrastinators and 7 questions focused on perfectionist procrastinators. Each question asked participants to rate their level of procrastination in regards to the question. For example, one question asked them to rate how likely they were to procrastinate on starting a new project. The next form given was the feedback letter (see Appendix D), which informed them the purpose of the study, the hypothesis of the study and contact information if they wished to see their results after all participants were assessed. The final form given was a sheet listing tips to help with procrastination for both crisis-making procrastinators and perfectionist procrastinators (see Appendix E). Although participants didn't have the results from the survey, participants may have wanted to apply techniques that felt most helpful to apply in their own lives.

The research was conducted in Pavlov room and the library. The Pavlov and library rooms consisted of table and the researcher sitting directly across from the participant.

Procedure

The first step was booking a location to take the study. After the room was booked, a signup sheet was posted on the LPP Board, in which participants signed up for the available times listed. The night before his/her scheduled appointment; I called him/her with a friendly reminder of the appointment time and location.

Once participants arrived, the first thing done was assuring that he/she was a part of the LPP. If he/she was not a part of the LPP, he/she could not participate in the study. If he/she were a part of the LPP, he/she signed in to confirm his/her presence for the study. Next he/she was given the consent form. Thirdly, he/she was given the demographic survey. Next, the procrastination survey was then given out. After he/she finished the survey, I collected and gathered the forms, then gave him/her the feedback letter, informing him/her of the purpose and hypothesis of the study. The last procedure was filling out the receipt. I was responsible for filling out all of the information on the receipt, only leaving the signature for him/her to sign. He/she was then dismissed.

Results

The hypothesis of the study was that college students were more likely to be crisis-making procrastinators than perfectionist procrastinators. A chi-square test was used to determine the significance between perfectionist procrastinators and crisis-making procrastinators. The results of the study showed that college students were more likely to be crisis-making procrastinators than perfectionist procrastinators (p -value= 3.806 for perfectionist and p -value= 54.033 for crisis-making procrastinators). Results also showed that women were more likely to be perfectionist procrastinators while men were more likely to be crisis-making procrastinators. The third hypothesis stated in the study was that young students would be more likely to procrastinate. Using Pearson's r correlation, there was a positive correlation between age and level of procrastination ($r=0.392931$).

Discussion

I hypothesized that college students were more likely to be crisis-making procrastinators than perfectionist procrastinators. Based on the results, college students were more likely to be

crisis-making procrastinators than perfectionist procrastinators. The results show that college students tend to postpone tasks toward the end of a deadline due instant positive reinforcement of additional free time. This can have a negative effect on students' academic performance. The importance of the study was to show that college students have a habit of postponing assignments and that this can result in lower academic achievement. In order to solve this, college students should become more proactive with completing tasks. Research shows that the less individuals procrastinate, the better the overall outcome and performance of completing a task.

There are three implications found in the study. The first implication was that a small portion of the participants did not know the definition of the procrastination. This could be due to the fact that a good portion of participants were from countries other than the United States. Furthermore, procrastination may not be as big of an issue in the homeland, and thus the topic may rarely come up, resulting in misunderstanding of the meaning. The second implication involved the time duration of data collection. The goal was for the study to have at least 100 participants. But due to a limited amount of time, the study only had 41 participants. This affects the sample size of the study, which also influences the validity of the study. The third implication of the study was location. Location became an issue when the study was conducted in the library. Many of the participants could not find the location of the study due to the room being in the basement of the library, and as a result there were 6 no-shows. Future research should consider a more effective way or time to conduct the study in order to increase the sample size and validity. For example, extending the length of data collection time or scheduling the studies for more convenient times for participants can help increase the sample size. To help validity, the study

can be conducted in another university to see if the participants showed a difference between the types of procrastinators.

References

- Barnes K.L, Ferrari J.R., & Steel P. (2009). Life Regrets by Avoidant and Arousal Procrastinators. *Journal of Individual Differences, 30*, 163-168
- Cook, P.F. (2000). Effects of Counselors' Etiology Attributions on College Students Procrastination. *Journal of Counseling Psychology, 47*, 352-361
- Cooper, R.K., Lopez, F.G., Strong S.R. & Wambach, C.A. (1979). Motivating and Equipping Functions of Interpretation in Counseling. *Journal of Counseling Psychology, 26*, 98-107.
- Clark, D., Rice, K.G. & Richardson, C.M.E., (2012). Perfectionism, Procrastination, and Psychological Distress. *Journal of Counseling Psychology, 59*, 288-302
- Haberlin, A.T., Ivy, J.W., Miller, P., Meindl, J.N., Neff, N.A. & Perrin, C.J. (2011). Measuring and Reducing College Student's Procrastination. *Journal of Applied Behavior Analysis, 44*, 463-474

Appendix B
Demographic Questionnaire:

You may choose to decline to answer any of the following questions.

- 1) Are you MALE FEMALE
- 2) How old are you? _____ years
- 3) What year are you at Lindenwood University? (please circle)
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
 - e. Other _____
- 4) Rate your overall level of procrastination

1=never procrastinate, 2=rarely procrastinates, 3=generally procrastinates, 4=mainly procrastinates, 5=always procrastinate.

1 2 3 4 5

Appendix C

Procrastination Survey

Rate from 1 to 5(1=never procrastinate, 2=rarely procrastinates, 3=generally procrastinates, 4=mainly procrastinates, 5=always procrastinate) on how likely you are to procrastinate.

1. Making decisions about your future
1 2 3 4 5
2. Studying for an exam
1 2 3 4 5
3. Thinking about creative ideas for a big event
1 2 3 4 5
4. Starting a new project
1 2 3 4 5
5. Picking a good restaurant for a date
1 2 3 4 5
6. Paying bills
1 2 3 4 5
7. Picking out an outfit
1 2 3 4 5
8. Choosing the best idea for a party theme
1 2 3 4 5
9. Choosing a good birthday gift for a friend or family member
1 2 3 4 5
10. Going to exercise
1 2 3 4 5
11. Refilling gas
1 2 3 4 5
12. Doing laundry
1 2 3 4 5
13. Getting ready for work
1 2 3 4 5
14. Waking up for work
1 2 3 4 5

Appendix D
Feedback Letter

Thank you for participating in my study. The present study was conducted in order to determine which type of procrastinator college students tend to be categorized under. I hypothesized that college students are more likely to be crisis-maker procrastinators rather than perfectionist procrastinators when completing tasks. Crisis-making procrastinators are individuals who postpone task until there is a short amount of time left. Perfectionist procrastinators are individuals who have difficulties completing a task due to lack of satisfaction. The survey consists of questions that are equally divided to categorize the level of a crisis maker or perfectionist procrastinator. Please note that I am not interested in your individual results; rather, we are only interested in the overall findings based on aggregate data. No identifying information about you will be associated with any of the findings, nor will it be possible for us to trace your responses on an individual basis.

If you are interested in obtaining the final results of this study based on aggregate data, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to let me know now or in the future. The contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study.

Sincerely,

Principal Investigator:

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Appendix E

Tips to help with Procrastination

Perfectionist procrastinators

- Focus on what's realistic rather than what's ideal; work toward excellence rather than perfection
- Seek support from others before you're under too much pressure
- Deliberately make one mistake each day
- Make daily to-do lists with small, broken down tasks that you can complete on a given day
- Commit to rewarding yourself for setting and achieving realistic goals
- Admit that you choose what you do with your time, work on self-acceptance skills.

Crisis-maker procrastinators

- Strive for moderation; avoid speaking and thinking in dramatic, emotional language
- Remind yourself; you may not be interested in a task until you start
- Identify motivators for a task and use them rather than using stress as a motivator
- Keep a record of your "crises"; what triggered them, how you reacted
- Create deadlines for yourself as a way to use your natural adrenaline rush to complete tasks earlier
- Regularly engage in activities that will give you an adrenaline rush- play competitive sports, hang out with friends or take up a new hobby

Relationship between Emotional Intelligence and People's Abilities to Cope with Stress

Lucile Michel⁷

Nowadays, it is really important for the researchers to understand the origins of stress, because it has been established that stress is really harmful for the human beings and is the cause to many diseases. Emotional intelligence has been shown to influence various areas of life, while several research studies state that EI has an effect on people's abilities to cope with stress. Many studies affirm that EI, because of its effect on perceived stress, would have an influence on people's aptitudes to manage a team, communicating with colleagues, and leadership skills. Because, today, in many workplaces, for interviews, managers take into consideration candidates' results, to decide to hire them, it is really important to confirm if this idea is true. The hypothesis is that people with higher EI will show higher abilities to cope with stress, whereas people with lower EI will show lower abilities to cope with stress. To observe the relationship between EI and stress coping, 30 participants were recruited through the Lindenwood Participant Pool and they had to complete three different surveys: a demographic survey, an emotional intelligence survey, and a stress coping scale. The results showed a positive and relatively strong correlation between EI and people's ability to cope with stress. These results allow us to confirm the relationship between EI and stress. People who have a higher emotional intelligence seem to keep their capabilities better in stressful situations than people with a lower emotional intelligence

Today, the notion of emotional intelligence (EI) is everywhere. In the press, on TV, it is explained how people will have more chances to succeed in their social lives, work and love if they have high emotional intelligence. In the workplace, many employers think that EI is really important to succeed in their company. In the workplace, many executives think that EI is really important to succeed in their company. In some interviews, managers ask the candidates to pass an EI test because they consider that if they have a high quotient of Emotional intelligence, they will be more able to manage a team, understand them and they will be a better leader in every situation, including stressful ones. I decided to conduct my own study to see if this idea were true, if people who have higher emotional intelligence are able to cope with stress better than

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those with lower emotional intelligence. I want to know if people with higher emotional intelligence are better equipped to handle stressful situations, than people with lower Emotional intelligence.

The notion of stress became popular since many years, but recently has become really important to help people to cope with stress. Emotional intelligence involves one's response to stress. According to Taylor, stress influences the prevalence of disease such as, cardiovascular diseases, arthritis, hypertension and immune related deficiencies" (Taylor, as cited in Byrne, 2012). Therefore, it is important for doctors and people suffering of stress symptoms to understand where their stress is coming from and how to face it and move forward. Companies observed that stress is an important factor in their employees' efficiency and productivity. To increase their productivity, they had to increase their well being. In their research, Aftab and Javeed (2012) found that stress is related to poor health outcomes, but also less productivity, absenteeism and resignations. One of the main questions is to determine why some people are more stressed than others, why there are so many differences between individuals. New research studies show some differences between individuals with respect to emotional intelligence. Aftab and Javeed found an important correlation between coping with stress and high Emotional Intelligence.

The notion of emotional intelligence is really recent. One of the first complete definitions was written by Salovey and Mayer (1990), it is defined as: "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional meanings, and to reflectively regulate emotions in ways that promote emotional and intellectual growth" (Salovey and Mayer, 1990). Then, in 1995, Daniel Goleman went further, and said that if people have a high emotional intelligence, there will be able to perceive and understand the

emotions in other people. He also thought that high levels of EI were applicable in a business context” (Goleman, 1995). Many recent studies have found a correlation between people’s emotional intelligence and their ability to cope with stress. Researchers have observed this phenomenon in different places.

Slaski and Cartwright (2002) conducted an experiment on more than 300 managers from an English organization. For their study, they used self-report surveys to assess emotional intelligence, general health, and subjective stress. They found that a high score in the emotional intelligence tests indicated lower level of stress, better health and better management performance.

In 2004, a qualitative research study conducted on dental students showed that different levels of emotional intelligence relates to the development of different skills. Students who scored high on emotional intelligence adopted skills such as “reflection and appraisal, social and interpersonal, and organization and time-management” and student who scored low on emotional intelligence were more likely to engage in health-damaging behaviors such as anxiety. (Pau, Croucher, Sohanpal, Muirhead & Seymour, 2004).

Arora and his colleagues (2011) did an experiment on medical students. They observed that students with a high score of emotional intelligence were performing better in stressful situations like surgeries, and they were likely to recover better after it (Arora, Russ, Petrides Sirimanna, Aggarwal, Darzi & Sevdalis, 2011).

Another study from last year by Byrne (2012) showed that high level of emotional intelligence correlated with lower level of perceived stress. This study showed that people who have a higher quotient of emotional intelligence will interpret a situation differently than people

with a lower quotient of emotional intelligence. The individuals who have a lower emotional intelligence can imagine a situation more stressful than it really is.

So, even if all researchers on this subject do not always find a link between emotional intelligence and the way people cope with stress, most of them do. What I ended up doing was to design a correlational study that assessed the relation between EI and people's ability to cope with stress. In this experiment, the participants will be at Lindenwood University. The hypothesis is that people with higher EI will show higher abilities to cope with stress, whereas people with lower EI will show lower abilities to cope with stress. The participants took three surveys, a demographic survey, an emotional intelligence survey and a survey to determine the ability to cope with stress.

Method

Participants

For these studies, I recruited 30 participants who were undergraduate students from 18 years old to 31 years old. Nine were freshman, 6 were sophomore, 4 were junior and 11 were Senior. There were 15 women and 15 men.

The Lindenwood Participant Pool (LPP) was used to recruit the participants. The LPP is an ethical process to recruit the participants. The participants earned a bonus point in general education classes after participating to the experiment. An LPP approved signup sheet was created and posted on the LPP board on the fourth floor of Young Hall as well as an experiment description (see Appendix A). The students were able to sign up for a time that worked for them. All the participants received extra credit in their general education classes through the LPP.

Materials

For this experiment, three surveys were used. The first one was a short demographic questionnaire asking for the participant's sex, age and year at Lindenwood (see Appendix B). The Second survey used was a brief 10-items Emotional Intelligence Scale, a shortened self-report measure of emotional intelligence based on Salovey and Mayer's (1990) conceptualization composed of 33-ITEM Emotional Intelligence Scale (EIS; Schutte , 1998) (see Appendix C). Then, a third survey was used to evaluate how the participants were coping with stress. It was important to show how people are coping with stress and not how they are feeling when they are stressed. The third survey is a Psychometric Re-assessment of the COPE Questionnaire, created by Lyne and D. Roger, (2000) (see Appendix D).

The experiment took place in a room booked through the Lindenwood Participant Pool. It was a quiet room where the participants were able to be in a calm ambiance while they were filling the three surveys.

Procedure

The participants arrived, one by one. The participants were told how the experiment was going to be organized. After signing the informed consent (See Appendix E), they were asked to take the three surveys: first the demographic survey, then the Emotional Intelligence survey and they finished with the stress survey. The participants were told that they can stop the experiment when they wanted if they had some doubts. During this time, the researcher stayed quiet, answering the possible questions of the participants. After filling the three surveys, the researcher answered any questions from the participant. It was then specified to the participants that if they wanted to, they would be given access to the experiment's results few months later.

Results

This experiment was designed to analyze the relationships between emotional intelligence and people's abilities to cope with stress. First of all, I analyzed the correlation between the two main variables. Both of them are continuous variables, so I used a Pearson's correlation coefficient and found $r=.518$, it is a positive and relatively strong correlation. This correlation was statistically significant with $p=.003$ (see Table 1).

I also decided to analyze the differences between men's and women's results for both emotional intelligence and stress coping surveys. In order to do this, I conducted two independent sample tests, a Levene test for equality of variance and a t-test for equality of means. I did not find any significant result for stress coping but I found a difference between men and women for their results to the emotional intelligence survey.

Because I had almost the same numbers of participants enrolled in freshman and senior classes, I decided to observe the differences for the results obtained to the emotional intelligence and stress coping surveys and conducted another series of independent t-tests comparing the two classes on the two measures.. There were no significance observed but it is still interesting to observe that for both surveys, the freshman participants scored higher than the senior participants.

Discussion

After analyzing my results, I can affirm that the null hypothesis is untrue, so I reject it. The results of this study confirmed a positive and relatively strong correlation between emotional intelligence and people's abilities to cope with stress. My hypothesis was supported; the participants who scored higher on their emotional intelligence survey, also scored also higher on the test that evaluates their abilities to cope with stressful situations.

This experiment was completed with undergraduate students, which is not common, but these results support the findings of others studies done on other population on the same topics. The difference within the results observed between men and women is interesting. They may be explained by the fact that women tend to over analyze every question, whereas men do not. I have noticed that women took more time to answer the three surveys than men did. When the three surveys were completed, and I asked the participants if they had any questions or issues concerning the tests, men said that they had no issues, whereas many women were saying that some questions were complicated to answer, that they wished to select two answers for some of them.

Concerning the findings observed for the freshman and seniors participants, the results are not significant but it can be noted that for both emotional intelligence and stress coping surveys, freshman participants scored higher than seniors. The lower scores for senior participants on the stress coping surveys may be interpreted by the fact that they may be in a significant life period, really stressful, and they may realized that their strategies to deal with stress, as their time management skills are not as good as they would like them to be.

There are some limitations to this study, mostly due to the time constraint. At first, the experiment counts only 30 participants, it is a very low number to assure that the results found are not only due to chance. Secondly, two self-report tests were used in this experiment which can lead to a bias of social desirability. The participants were maybe not objective, mostly for the stress coping survey, it can be really difficult for them to judge their own reactions and feelings face to a stressful situation. Thirdly, the three surveys were given in the same order to every participant, it is possible that for the third survey, some of the participants were tired or wanted the experiment to be over, so they did not seriously filled the survey. To distribute the surveys in

different sequences for different participants may have changed the results. Finally, the survey used for emotional intelligence was only a 10-item questionnaire, and it probably did not result in an accurate score of the participants' emotional intelligence.

However, while knowing that emotional intelligence can vary and increase during life, it would be a good idea for people to take training for emotional intelligence to help them to cope better with stress, mostly during these days of economic crisis, when people are permanently stressed. Another interesting fact is that there are only few studies done on undergraduate students, and emotional intelligence and this population is really concerned by stress problems. With this study, the results show that emotional intelligence may help them to cope better with stress, therefore obtain better results and improve their mental health.

For future researches, it would be interesting to do an experiment in which the participants do not have to judge and rate their own reaction facing a stressful situation, because as it has been explained above, the results for a self-report questionnaire on stress coping can be subject to social desirability. The experiment will be to compare participants with high and low emotional intelligence on their ability to cope with stressful quizzes, such as a short mathematics test and general knowledge quiz. The results will show if those who scored higher on EI would be able to handle the stressful quizzes better than those who scored lower on EI. For this experiment, more time would be needed it would involve participants coming in twice – once to have their EI assessed and then again to come in to take the stressful quizzes depending on if they were identified as having high or low EI.

References

- Arora, S. Russ, S. Petrides, K. V. Sirimanna, P. Aggarwal, R., Darzi, A., & Sevdalis, N. (2011). "Emotional Intelligence and Stress in Medical Students Performing Surgical Tasks." *Academic Medicine* 86.10, 1311-1317.
- Byrne, M. (2012). A Study of the Relationship between Emotional Intelligence and Stress Management in the Irish Workforce. Diss. DBS School of Arts,
- Dulewicz, V. Higgs, M., & Slaski, M. (2003). "Measuring Emotional Intelligence: Content, Construct and Criterion-related Validity." *Journal of Managerial Psychology* 18.5. 405-420.
- Goleman, D (1996), *Emotional Intelligence: Why It Can Matter More Than IQ*, Bloomsbury Publishing, London
- Pau, A. K. H, R. Croucher, R. Sohanpal, V. Muirhead, & K. Seymour. (2004). "Emotional Intelligence and Stress Coping in Dental Undergraduates — a Qualitative Study." *British Dental Journal* 197.4. 205-209. Print.
- Salovey, P., & Mayer, J.D. (1990), "Emotional intelligence", *Imagination, Cognition and Personality*, Vol. 9, pp. 185-211.

Appendix A
Recruitment Description

Description:

In this study, you will be asked to complete three psychological surveys. The first one will be a short demographic survey, the second one will be about Emotional Intelligence and the other one will test your abilities to cope with stress. The entire procedure should take no more than 20 minutes of your time.

Sign-Up Schedule

Appendix B
QUESTIONNAIRE

- 1) Are you MALE FEMALE?

- 2) How old are you?

- 3) Are you a FRESHMAN SOPHOMORE JUNIOR SENIOR?

Appendix C

Brief Emotional Intelligence Scale

Scale:

1 = Strongly Disagree

3 = Agree

5 = Strongly Agree

BEIS-10

Items

Appraisal of own Emotions

I know why my emotion change

1 2 3 4 5

I easily recognize my emotions as I experience them

1 2 3 4 5

Appraisal of others' emotions

I can tell how people are feeling bu listening to the tone of their voice

1 2 3 4 5

By looking at their facial expressions, I recognize the emotions people are experiencing

1 2 3 4 5

Regulation of own emotions

I seek out activities that make me happy

1 2 3 4 5

I have the control over my emotions

1 2 3 4 5

Regulation of others' emotions

I arrange events others enjoy

1 2 3 4 5

I help other people feel better when they are down

1 2 3 4 5

Utilization of emotions

When I am in a positive mood, I am able to come up with new ideas

1 2 3 4 5

I use good moods to help myself keep trying in the face of obstacles

1 2 3 4 5

Appendix D

Stress Coping Preference Scale

People cope with difficult, stressful, or upsetting situations in a variety of ways. This self-assessment is designed to help you to estimate your preferred styles of coping.

Read each statement in this instrument and select the response that best indicates how much you tend to react in that way when faced with a difficult, stressful, or upsetting situation. This instrument has 16 statements.

I will try to figure out how to resolve the problem.

Never Seldom Sometimes Often Very Often

I will act as though nothing happened, hoping it would go away.

Never Seldom Sometimes Often Very Often

I will seek the support and guidance of other people.

Never Seldom Sometimes Often Very Often

I will get upset or angry with the people who caused the problem.

Never Seldom Sometimes Often Very Often

I will change something so the situation would improve.

Never Seldom Sometimes Often Very Often

I will avoid the problem by sleeping, watching TV, or engaging in other diversionary activities more than usual.

Never Seldom Sometimes Often Very Often

I will ask someone I respected for advice.

Never Seldom Sometimes Often Very Often

I will Try to get back at those who created the trouble.

Never Seldom Sometimes Often Very Often

I will Come up with a couple of strategies to make the situation better.

Never Seldom Sometimes Often Very Often

I will keep my concerns and emotions about the situation to myself.

Never Seldom Sometimes Often Very Often

I will talk to friends or family about my circumstances.

Never Seldom Sometimes Often Very Often

I will figure out who was responsible for what happened.

Never Seldom Sometimes Often Very Often

I will double my effort to correct the situation and achieve my objective.

Never Seldom Sometimes Often Very Often

I will put off dealing with the matter.

Never Seldom Sometimes Often Very Often

I will get sympathy and understanding from someone.

Never Seldom Sometimes Often Very Often

I will make sure that those responsible for the problem received their due punishment.

Never Seldom Sometimes Often Very Often

The source of this scale is: Based on information in: K. Lyne and D. Roger, "A Psychometric Re-assessment of the COPE Questionnaire," *Personality and Individual Differences*, 29 (2000), pp. 321-335; P. P Vitaliano, J. Russo, J. E. Carr, R. D. Maiuro, and J. Becker, "The Ways of Coping Checklist: Revision and Psychometric Properties," *Multivariate Behavioral Research*, 20 (1985), pp. 3-26.

Table 1

Correlations between measures

		Score for the EI Scale	Scores for the Stress coping Scale
Score for the EI Scale	Pearson Correlation	1	.518**
	Sig. (2-tailed)		.003
	N	30	30
Scores for the Stress coping Scale	Pearson Correlation	.518**	1
	Sig. (2-tailed)	.003	
	N	30	30

** . Correlation is significant at the 0.01 level (2-tailed).

Race, Attire, and Perception of Sexual Harassment Victim Culpability

Eliza A. Murray⁸

The purpose of the present study was to determine if there were significant differences in how college students perceive culpability for sexual harassment victims as a result of varying victim race (e.g. African-American and Caucasian) and attire (e.g. revealing attire and non-revealing attire), a perceived indicator of promiscuity. The hypothesis was that participants would perceive the African-American sexual harassment victim wearing revealing attire as more culpable than the African-American victim wearing non-revealing attire, the Caucasian victim wearing revealing attire, and the Caucasian victim wearing non-revealing attire. The present study was a 2 (Race) x 2 (Attire) within-participants design that included four target vignettes, which differed according to sexual harassment victim race and attire, four filler vignettes, which differed according to bullying victim race and attire and distracted from the true purpose of the experiment, and a nine-item victim culpability survey. The results of this study indicate that there were no significant differences in ratings of victim culpability for African-American victims wearing revealing attire and Caucasian victims wearing revealing attire. However, there was a significant difference in the ratings of victim culpability for victims wearing revealing attire, regardless of race, such that victims wearing revealing attire were rated as more culpable than victims wearing non-revealing attire. These findings have large implications for college students experiencing and responding to sexual harassment complaints from peers.

Keywords: victim culpability, sexual harassment, race

Sexual harassment according to a traditional classification system includes gender harassment, sexual seduction, sexual bribery, sexual coercion, and sexual imposition (Till as cited in Sharon & Levesque, 1998). These levels of sexual harassment have been updated and condensed to describe two forms of sexual harassment: quid pro quo and hostile environment (Sharon & Levesque, 1998). Quid pro quo harassment includes sexual bribery and sexual coercion, which involves employment being contingent on sexual favors (Rape, Abuse, and Incest National Network, 2009). Hostile environment encompasses gender harassment, sexual

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seduction, and sexual imposition, which involves the perpetrator creating an environment that is uncomfortable through the use of verbal remarks, gestures or leering, and forceful touching or grabbing (Sharon & Levesque, 1998). Hostile environment harassment, specifically gender harassment, is the most common form of sexual harassment and it is prevalent among universities in the United States (Rape, Abuse, and Incest National Network, 2009).

According to Hill and Silva (2005), approximately 41% of female and 36% of male students experience some form of sexual harassment their first year at college. The second most common form of sexual harassment experienced by college students was sexual imposition. Among students who said they have experienced sexual harassment, 50% reported experiencing unwanted sexual contact in the form of inappropriate touching and feeling (Hill & Silva, 2005). Furthermore, the same researchers found that female students were more likely to experience sexual harassment that involves unwanted physical contact than male students.

However, the majority of studies about sexual (imposition) harassment rates fail to show significant differences according to race, especially pertaining to African-American and Caucasian women. According to Hill and Silva (2005), the rates of sexual harassment for college-aged African-American women and Caucasian women were approximately 33% and 32%, respectively. However, Wyatt and Riederle (1994) posited that because African-American women underreport rape in comparison to their Caucasian peers, the rates of sexual harassment may also be underreported. One explanation about the lack of disclosure by African-American sexual harassment victims involves the connection between culpability and gendered racial stereotypes. Gendered racial stereotypes such as the Jezebel stereotype, describe African-American women as promiscuous and hypersexual (Davis & Staples, as cited in McNair, 1996). McNair (1996) posited that the Jezebel stereotype may discourage African-American women

from disclosing their sexual victimization as this stereotype places the blame directly on the woman and her alleged past behaviors. As a result, college-aged African-American sexual harassment victims may be seen by their peers as less credible and more to blame.

Studies examining victim culpability have focused on the theories about attributions, beliefs in a “Just World” (Baumeister & Bushman, 2011), and the influence of perceived similarity to the victim. The fundamental attribution error involves attributing the cause of someone’s behavior to dispositional characteristics, while discounting the influence of situational factors (Heider, as cited in Baumeister & Bushman, 2011). For example, sexual harassment victims may be blamed for their assault because they were behaving “promiscuously.” Conversely, individuals may also possess strong beliefs in a “Just World”, the belief in a world in which the events that happen to people are related to their personal characteristics (Lerner, as cited in De Judicibus & McCabe, 2001). Individuals with strong beliefs in a “Just World” may think that it must have been the sexual harassment victims’ behavior that caused the assault. In addition, past research findings have also revealed that perceived similarity to the victim of a crime predicts whether individuals perceive the victim to be highly culpable (Bridges & McGail, as cited in Miller, Amacker, & King, 2010). Individuals who perceived themselves as similar to the victim of sexual assault rated the victim as less culpable for the assault (Amacker & Littleton, as cited in Miller et al., 2010). Therefore, sexual harassment incidents may cause some individuals to commit a fundamental attribution error or violate individuals’ ideas of a “Just World.” As a result, individuals may place blame on the victim and they may base their attributions on perceived similarity to the victim.

Attire may have a substantial impact on how individuals perceive victim culpability and indirectly perceived similarity with the victim. Past research shows that victim attire may incite

incorrect inferences about the sexual availability of the victim (Johnson et al., as cited in Maurer & Robinson, 2008). Maurer and Robinson (2008) conducted a study examining the influence of attire, alcohol, and gender on ratings of perceived similarity to the rape victim, perceived sexual intent of the rape victim, assigned responsibility for the rape, and labeling the incident as rape. Attire was operationally defined in short vignettes as wearing revealing clothing (e.g. physically revealing), suggestive clothing (e.g. shirts with sexually suggestive words), or neutral clothing (Maurer & Robinson, 2008). The researchers found that suggestive clothing decreased participants' perceived similarity to the rape victim and increased the perceptions of sexual intent, but it did not influence whether the incident was labeled as rape, a form of victim-blaming. Male participants assigned more responsibility or blame for the rape to the victim independent of attire type. (Maurer & Robinson, 2008). Therefore, it seems that suggestive attire does have an influence on perceptions of sexual intent.

Other studies have drawn attention to the media's focus on victim attire to describe reported incidences of sexual harassment among African-American women. Meyers (2004) conducted an analysis of one of Atlanta's local news channel coverage of Freaknik, a large party held in Atlanta for students attending Historically Black Colleges and Universities (HBCUs). She found that during Freaknik the channel WXIA infrequently reported incidences of sexual harassment experienced by African-American women. When the channel did feature stories about sexual harassment, the reporter often referenced the victim's attire in such a manner to blame the harassment on the woman for wearing such clothing. In addition, the primary footage of the report focused on showing other African-American women dancing provocatively in the streets and wearing physically revealing clothing (Meyers, 2004). In another instance, Atlanta's Police Chief explained to the reporter that she was troubled by the lascivious behavior exhibited

by African-American women. Ultimately, Meyers (2004) posited that the news channel WXIA explicitly attributed blame to the sexual harassed African-American women based on their attire and perceived promiscuity.

In addition to the influence of attire on perceptions of victim culpability, studies have also found that the activation of stereotypes related to promiscuity influenced attributions of blame. Ferguson et al. (2005) varied exposure to a promiscuous or non-promiscuous woman using Jerry Springer clips and sexual harassment type (e.g. verbal or physical) to determine if there were differences in the ratings of perceived trauma and perceived attribution of responsibility. The results of the study indicated that participants' exposed to the promiscuous woman in the Jerry Springer clip perceived sexual harassment victims as experiencing less trauma and participants attributed more blame to the sexual harassment victim, than participants exposed to the non-promiscuous woman in the Jerry Springer clip (Ferguson et al., 2005). Participants exposed to the promiscuous woman attributed more blame to sexual harassment victims experiencing verbal harassment, and slightly less blame to sexual harassment victims experiencing physical harassment, such as groping (Ferguson et al., 2005). Therefore, the activation of stereotypes, such as those related to race and promiscuity, may impact perceptions of sexual harassment victim culpability.

The present study examined whether there were significant differences in college students' perceptions of sexual harassment, defined as unwanted sexual touching, grabbing, and feeling, victim culpability, as a result of varying victim race (e.g. African-American and Caucasian) and attire (e.g. revealing and non-revealing attire), a perceived indicator of promiscuity. I hypothesized that participants would rate the African-American victim wearing revealing attire as more culpable than the African-American victim wearing non-revealing attire,

the Caucasian victim wearing revealing attire, and the Caucasian victim wearing non-revealing attire. I conducted a 2(Race) x 2(Attire) within-participants design that featured four target vignettes, which differed according to sexual harassment victim race and attire, four filler vignettes which differed according to bullying victim race and attire and distracted from the true purpose of the study, and a nine-item victim culpability survey that followed each vignette.

Method

Participants

Convenient sampling was used to recruit 23 undergraduate students using the Lindenwood Participant Pool (LPP). Students were eligible to participate in the study if they were enrolled in LPP participating introductory psychology, sociology, anthropology, exercise science, or athletic training courses. The participants' ages ranged from 18 to 23. There were 13 women and 9 men. There were 51% Non-Hispanic Caucasian, 9% African-American, and 9% Hispanic students. There were 40% freshmen, 27% were sophomores, 18% were juniors, and 13% were seniors. Participants were asked in the demographic survey if they have ever been the victim of peer sexual harassment and 31% of all participants indicated yes and 45% of female participants indicated yes. Forty-six percent of the participants majored in a science related field, eighteen percent majored in communications, fourteen percent majored in business, nine percent majored in human services, nine percent majored in education, and four percent majored in history. Participants received one LPP credit that would be applied to their overall course grade.

Materials and Procedure

Room booking requests, which contained information about preferred room type and study dates, were sent to the LPP. Once the rooms were assigned, a sign up-sheet, which listed available dates and time slots, was posted on the bulletin board across from the LPP office on the

fourth floor of Young Hall. An experiment description sheet (see Appendix A), posted above the sign-up sheet, contained information about the purpose of the experiment, approximate duration, compensation, and principal investigator contact information.

Once the participant entered the Psychology Lab, a room with two desks and two chairs, the principal investigator (PI) informed him/her that the average duration of the study was 30 minutes. Then, the PI distributed two informed consent forms. An informed consent form (see Appendix B) was used to fully explain participant rights, potential risks, basic procedure, and the purpose of the study. Each participant was asked to sign two copies of the informed consent form and retain one copy.

Then the PI gave each participant eight target vignettes to read during the study. Four of the target vignettes (see Appendix C) described fictitious incidents of peer sexual harassment. The vignettes featured a college-aged woman being sexually harassed by a college-aged man. Each of the target vignettes differed according to sexual harassment victim race (e.g. African-American or Caucasian) and attire (e.g. revealing or non-revealing attire). Four of the vignettes were filler vignettes (see Appendix D) which described incidents of a college-aged woman being bullied by a college-aged man. Each filler vignette differed according to bullying victim race and attire. The filler vignettes were used to distract the participant from hypothesizing about the true purpose of the study. The filler vignettes were placed in between the target vignettes.

Each vignette was followed by a 9-item victim culpability survey, which was used to determine if participants attributed blame to the victim in each vignette. The survey featured Likert scale items, multiple choice, and an open-ended item about what the victim should do about the scenario. The survey also featured manipulation checks to assess whether the participants were aware of victim race and attire condition.

After the participants completed the victim culpability surveys, the PI distributed a demographic survey (see Appendix E) which featured age, sex, race, year in school, major, and sexual harassment victim status items. The demographic survey was used to gather information about the participants such that a relationship between perception of culpability and items on the survey may be found.

Finally, the participants were debriefed and given the feedback letter (see Appendix F) which detailed the purpose and hypothesis of the study, and explained that the filler vignettes were only being used to distract from the true purpose of the experiment and would not be scored. This form also contained contact information for a local student counseling center due to the possibly triggering nature of the vignettes. The PI then signed the participants' extra credit slips.

Results

The hypothesis of the present study was that participants would perceive the African-American victim wearing revealing attire as more culpable than the African-American victim wearing non-revealing attire, the Caucasian victim wearing revealing attire, and the Caucasian victim wearing non-revealing attire. A 2 (Race) x 2 (Attire) repeated measures ANOVA was used to determine if there were significant differences in the perceived ratings of victim culpability as a function of race and attire. There were two manipulation checks, items seven and eight, which assessed whether the participants were aware of the victim's race and attire. Five participants' data were omitted from final analyses as a result of incorrectly identifying the victim's race. The other seven items assessed components of victim culpability, such as responsibility and possible blame-worthy behaviors. High scores on item one (*the victim was completely innocent of wrong-doing*) and low scores on items three through six (*the victim was*

partly to blame, the harasser was completely innocent, the victim may have encouraged the harasser's behavior, and the victim should have worn different clothing) indicated high perceptions of victim culpability. Item nine, an open-ended question that asked participants to describe what the victim should do about the situation, was analyzed by categorizing the participants' responses and recording the frequency at which these responses occurred.

For the first item, which asked if the victim was completely innocent of wrong-doing, there was a significant difference in ratings of victim culpability for victims as a function of attire, $F(1,15)=6.483$, $p=.022$, $d=.30$. Victims wearing revealing attire were rated as more culpable ($M=2.156$, $SD=.253$) than victims wearing non-revealing attire ($M=1.750$, $SD=.214$).

For the second item, which asked if the harasser touched the victim because that was what the victim wanted, there was a significant difference in the ratings of victim culpability. There was a main effect of attire, $F(1,15)=6.505$, $p=.022$, $d=.303$, such that victims wearing revealing attire ($M=4.095$, $SD=.242$) were rated as more culpable than victims wearing non-revealing attire ($M=4.438$, $SD=.157$).

For the third item, which asked if the victim was partly to blame for the harassment, there was a significant difference in the ratings of victim culpability. There was a main effect of attire, $F(1, 15) = 19.286$, $p=.001$, $d=.56$ such that victims wearing revealing attire ($M=3.250$, $SD=.262$) were rated as more culpable than victims wearing non-revealing attire ($M=4.281$, $SD=.209$).

For the fourth item, which asked if the harasser was completely innocent of wrongdoing, there was not a significant difference in the ratings of victim culpability as a function of victim race, $F(1,15)=2.882$, $p=.110$, and attire $F(1,15)=.041$, $p=.843$.

For the fifth item, which asked if the victim encouraged the harasser's behavior, there were significant differences in the ratings of victim culpability. There was a main effect of attire,

$F(1, 15) = 9.460, p = .008, d = .39$ such that victims wearing revealing attire ($M = 2.938, SD = .322$) were rated as more culpable than victims wearing non-revealing attire ($M = 3.719, SD = .262$).

There was also a marginally significant main effect of race, $F(1, 15) = 3.809, p = .070, d = .20$ such that African-American victims ($M = 3.188, SD = .322$) were rated as more culpable than Caucasian victims ($M = 3.469, SD = .287$).

For the sixth item, which asked if the victim should have changed her clothes, there was a significant difference in the ratings of victim culpability. There was a main effect of attire, $F(1, 15) = 10.444, p = .006, d = .41$ such that victims wearing revealing attire ($M = 3.219, SD = .270$) were rated as more culpable than victims wearing non-revealing attire ($M = 4.063, SD = .182$).

For the ninth item, which asked what the victim should do about the situation, twenty participants indicated that the victim should leave the party or verbally respond to the harasser. Three participants indicated that the victim should change her clothes. Out of these three, two of these comments were in reference to the African-American victims. Lastly, five participants indicated that the victim should tell someone about the situation.

Aversive events during the study included one participant disclosing the true purpose of the study with another participant.

Discussion

The hypothesis that participants would rate the African-American victim wearing revealing attire as more culpable than the African-American victim wearing non-revealing attire, the Caucasian victim wearing revealing attire, and the Caucasian victim was not supported. One possible explanation for this finding is that race was a less salient feature of the vignettes. Even with the manipulation checks, stereotypes related to African-American women that may have influenced ratings of culpability may not have readily come to mind. This may be due to two

factors related to stereotype activation and the Jezebel stereotype itself. For stereotypes to be activated, members of the stereotyped group must behave in a way that either confirms or disconfirms the stereotype. The vignettes only referenced the victim's race by skin color and contained no information about the victim's behavior that may have confirmed the existence of the Jezebel stereotype. In regards to the Jezebel stereotype, researchers posit that this stereotype combines race, gender, and class, and may therefore be specific to working class African-Americans (Staples & Davis as cited in McNair & Neville, 1996). The Jezebel stereotype may not have been activated because the target vignette victims were college students who presumably were of a middle-class background.

In addition, non-prejudiced participants may have been aware of stereotypes related to African-American women, but they used the conscious system to override the influence of these stereotypes (Baumeister & Bushman, 2011). The use of the conscious system to override the influence of stereotypes may be related to social desirability. Participants may have been acutely aware that the study involved race and victim culpability, which may have influenced their responses in regards to the African-American victims. Furthermore, the majority of the participants majored in a science, communications, and business and throughout the course of their study became aware of the harmfulness of racial prejudices and stereotypes.

However, there was a main effect of attire such that for four items, regardless of race, the victims wearing revealing attire were rated as more culpable than the victims wearing non-revealing attire. One possible explanation for this finding is that attire readily influences college students' perceptions of sexual intent, which is in accordance with Maurer and Robinson's (2008) findings that suggestive attire influenced perceptions of sexual intent for date rape

victims. Furthermore, attire was vividly described in the target vignettes (e.g. tight red leather pants), whereas race was only referred to by skin color.

In addition to the main effect of attire, there was also a marginally significant main effect of race only on item five, such that regardless of attire, African-American victims were rated as more culpable than Caucasian victims. This finding may have occurred because this item specifically addresses the victim's behavior, which in the vignettes is only described as attending a party and dancing alone until the assault occurs. There is not much information about the character of the victim, which may have led the participants to speculate about what the victim may have done to encourage the harassers' behavior. Therefore, the Jezebel stereotype or other racial stereotypes may have influenced the higher culpability scores for the African-American victims. A larger sample size may have allowed this item to be significant at the $p=.05$ level.

Participants' responses on the open-ended item reflected the setting and the non-verbal response of the victims as the majority of the participants indicated that the victim should leave or verbally respond to the harasser. The recommendation to verbally respond to the harasser is in accordance with Sigal, Braden-Maguire, Patt, Goodrich, & Perrino's (2003) findings that an active coping style, such as directly confronting the harasser or reporting the behavior was perceived as more effective than a passive coping style, such as ignoring the harasser's behavior. Interestingly, the majority of university female sexual harassment victims do not respond assertively to the perpetrator in terms of direct confrontation and reporting the incident (Gruber & Smith, as cited in Sigal et al, 2003). Three participants indicated that the victim should change her clothes. Furthermore, two of those three participants were women and identified as victims of peer sexual harassment. This may be consistent with Hill and Silva's (2005) findings that female students who experience sexual harassment are more likely than male students to change their

behavior in some way after the incident. Some female victims of sexual harassment may be prone to indicate high victim culpability responses because of their past experiences and their attempts to protect themselves from future assaults.

The limitations of the present study may include the setting of the target vignettes, the leading nature of the victim culpability survey items, and the victim's degree of resistance.

Firstly, the setting of the target vignettes was a party or social-gathering, in which the victim was described as dancing alone and the assault took place while she was dancing. This description of sexual harassment may be a common occurrence among college students that may have been interpreted as a less serious incident. In future studies, the setting and the nature of the sexual harassment incident may need to be modified to reflect a less ambiguous situation.

Secondly, two of the items on the victim culpability survey included phrases such as victim/harasser were completely innocent. The use of completely may be too absolute, and in future research may be worded in a manner that is less leading. Thirdly, in the target vignettes the victim responded to the assault only using physical resistance. This may have been interpreted as vague, and therefore may have influenced the ratings of victim culpability. In future studies, victim resistance may need to be varied such as physical resistance only, verbal resistance only, and physical and verbal resistance.

Given the prevalence of sexual harassment on college campuses, the results of the present study have large implications. Because female students who have been victims of peer sexual harassment are more likely than male students to experience negative psychological consequences and many sexual harassment incidents go unreported (Hill & Silva, 2005), the need for positive forms of social support is crucial for academic and interpersonal success. Positive social support from the victim's peers, family, and university personnel may moderate

the negative psychological consequences of sexual harassment. Conversely, victims of color may be more reluctant to seek out formal forms of support due to racial prejudice, judgments about her active or passive response to the harasser, and inferences about credibility due to her attire.

Future research may focus on gathering more information about sexual harassment victims of color, their past experiences with victim-blaming and academic success. Furthermore, more research needs to be conducted on the current manifestations and the effects of the Jezebel stereotype on victim culpability for gendered violence survivors using various methodologies, such as focus groups, field studies, and naturalistic observation. Further studies need to also determine whether implicit prejudice predicts race-based victim-blaming behavior. Lastly, primary prevention programs, such as workshops about sexual assault for incoming college students and workshops for university human resources personnel, may need to highlight the harmfulness of race and attire-based victim-blaming and describe helpful ways peers and professionals can respond to sexual harassment complaints.

References

- Baumeister, R. F., & Bushman, B. J. (2011). *Social psychology and human nature* (2nd ed.) Belmont, CA: Wadsworth, Cengage Learning.
- De Judicibus, M., & McCabe, M. P. (2001). Blaming the target of sexual harassment: Impact of gender role, sexist attitudes, and work role. *Sex Roles, 44*(7), 401-417. Retrieved from <http://search.proquest.com/docview/225374852?accountid=12104>
- Ferguson, T., Berlin, J., Noles, E., Johnson, J., Reed, W., & Spicer, C. (2005). Variation in the application of the "promiscuous female" stereotype and the nature of the application domain: Influences on sexual harassment judgments after exposure to the Jerry Springer show. *Sex Roles, 52*(7-8), 477-487. doi: <http://dx.doi.org/10.1007/s11199-005-3713-y>

- Hill, C., & Silva, E. (2005). Drawing the line: Sexual harassment on campus. *American Association of University Women*, 11-40.
- Maurer, W. T., & Robinson, W. D. (2008). Effects of attire, alcohol, and gender on perceptions of date rape. *Sex Roles*, 58(5-6), 423-434. doi: <http://dx.doi.org/10.1007/s11199-007-9343-9>
- McNair, L. D., & Neville, H. A. (1996). African-American women survivors of sexual assault: The intersection of race and class. *Women & Therapy*, 18(3), 107-107. Retrieved from <http://search.proquest.com/docview/216252040?accountid=12104>
- Meyers, M. (2004). African-American women and violence: Gender, race, and class in the news. *Critical Studies in Media Communication*, 21(2), 95-118.
- Miller, A. K., Amacker, A. M., & King, A. R. (2011). Sexual victimization history and perceived similarity to a sexual assault victim: A path model of perceiver variables predicting victim culpability attributions. *Sex Roles*, 64(5-6), 372-381. doi: <http://dx.doi.org/10.1007/s11199-010-9910-3>
- Sexual Harassment: Rape, Abuse and Incest National Network. (2009). *RAINN*. Retrieved from <http://www.rainn.org/get-information/types-of-sexual-assault/sexual-harassment>
- Sigal, J., Braden-Maguire, J., Patt, I., Goodrich, C., & Perrino, C. S. (2003). Effects of type of coping response, setting, and social context on reactions to sexual harassment. *Sex Roles*, 48(3), 157-166.
- Wyatt, G. E., & Riederle, M. (1994). Sexual harassment and prior sexual trauma among African-American and White American women. *Violence and Victims*, 9(3), 233-47. Retrieved from <http://search.proquest.com/docview/208555974?accountid=12104>

Appendix A
Experiment Description

Project #: 13-8

Experimenter's name(s): Eliza Murray

Experimenter's contact information:

Approximate amount of time experiment will take: 30 minutes

Type of experiment (survey, interactive, etc.): Survey

Experiment name: Decision-Making and Blame-Worthiness

Description of the experiment: The purpose of this research is to determine college students' perception of the blame-worthiness of individuals who are involved in various college-themed situations. Your participation will also involve completing a blame-worthiness survey and a demographic survey, which will ask basic questions such as age, sex, and year in school. This study will take place in the Psychology Lab, located on the first floor of Young Hall. The amount of time involved in your participation will be thirty minutes and you will receive one LPP credit for your time.

Appendix B
Informed Consent
Informed Consent for Participation in Research Activities

“Decision-making and Blame-worthiness”

Principal Investigator _____XXX_____

Participant _____ Contact info _____

You are invited to participate in a research study conducted by XXX under the guidance of Dr. Michiko Nohara-LeClair. The purpose of this research is to determine college students' attitudes about blame-worthiness and decision-making. Your participation will involve reading vignettes, completing a blame-worthiness survey, and a demographic survey, which will ask basic questions such as age, sex, race, and year in school. This study will take place in the Psychology Lab of Lindenwood University. The amount of time involved in your participation will be thirty minutes and you will receive one LPP credit for your time. Approximately thirty participants will be involved in this research.

There may be certain risks or discomforts associated with this research. They may include uncomfortable feelings that might come from reading and answering certain questions about college-themed scenarios, such as sexual harassment. There are no direct benefits for you participating in this study. However, your participation will contribute to the knowledge about blame-worthiness in college.

Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw. Alternatives for earning course credit are available from your course instructor.

We will do everything we can to protect your privacy. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location.

If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, XXX or the Supervising Faculty, Dr. Michiko Nohara-LeClair at 636-949-4371. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Vice President for Academic Affairs at 636-949-4846.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

Participant's Signature Date

Participant's Printed Name

Signature of Principal Investigator Date

Investigator Printed Name

Appendix C
Target Vignettes

Carla

Please read the story and **circle** your answer to the questions below.

On Monday, it was Carla's birthday. So she decided to celebrate her birthday at a new lounge downtown. Carla decided to wear a short, black sparkly dress that contrasted with her dark black skin. Once she arrived, Carla decided to dance. Carla was then approached by Eric, a classmate, who wanted to dance. Carla declined, but Eric grabbed Carla's waist and placed his hands on her behind and hips. Carla pushed Eric away, but he continued to touch her throughout the night despite her opposition.

For each question, please circle your answer.

1. Carla is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Eric touched Carla because that is what Carla wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Carla is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Eric is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Carla may have encouraged Eric's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Carla should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Carla wearing? _____

8. Carla's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Carla should do about this situation below:

Scoring: High ratings on question 1 and low ratings on questions 2-6 infer high perception of victim culpability. Questions 7 and 8 are manipulation checks to assess whether participants are aware of protagonist victim race/promiscuity status.

Carla

Please read the story and **circle** your answer to the questions below.

On Monday, it was Carla's birthday. So she decided to celebrate her birthday at a new lounge downtown. Once she arrived, Carla decided to dance and her neon gym shorts that brightly contrasted with her dark black skin. Carla was then approached by Eric, a classmate, who wanted to dance. Carla declined, but Eric gripped Carla's waist and touched her hips and then her behind. Carla shoved Eric away, but he continued to touch her throughout the night despite her opposition.

For each question, please circle your answer.

1. Carla is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Eric touched Carla because that is what Carla wanted

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Carla is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Eric is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Carla may have encouraged Eric's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Carla should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Carla wearing? _____

8. Carla's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Carla should do about this situation below:

Carla

Please read the story and circle your answer to the questions below.

On Monday, it was Carla's birthday. So she decided to celebrate her birthday at a new lounge downtown. Carla decided to wear a short, black sparkly dress that contrasted with her pale white skin. Once she arrived, Carla decided to dance. Carla was then approached by Eric, a classmate, who wanted to dance. Carla declined, but Eric grabbed Carla's waist and placed his hands on her behind and hips. Carla pushed Eric away, but he continued to touch her throughout the night despite her opposition.

For each question, please circle your answer.

1. Carla is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Eric touched Carla because that is what Carla wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Carla is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Eric is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Carla may have encouraged Eric's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Carla should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Carla wearing? _____

8. Carla's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Carla should do about this situation below:

Carla

Please read the story and **circle** your answer to the questions below.

On Monday, it was Carla's birthday. So she decided to celebrate her birthday at a new lounge downtown. Carla decided to wear neon gym shorts that contrasted with her pale white skin. Once she arrived, Carla decided to dance. Carla was then approached by Eric, a classmate, who wanted to dance. Carla declined, but Eric grabbed Carla's waist and placed his hands on her behind and hips. Carla pushed Eric away, but he continued to touch her throughout the night despite her opposition.

For each question, please circle your answer.

1. Carla is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Eric touched Carla because that is what Carla wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Carla is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Eric is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Carla may have encouraged Eric's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Carla should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Carla wearing? _____

8. Carla's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Carla should do about this situation below:

Jeanette

Please read the story and **circle** your answer to the questions below.

Jeanette was planning on going to a dance party on campus. Jeanette decided to wear a low-cut red blouse, which accentuated her dark black skin. When Jeanette arrived at the dance party John, a classmate from English, approached Jeanette. John and Jeanette chatted for a little while, and then she excused herself and went to dance to her favorite song. As Jeanette was dancing, John danced alongside of her. He then, quickly moved behind her and his hands grazed her behind. Jeanette shoved John away.

For each question, please circle your answer.

1. Jeanette is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. John touched Jeanette because that is what Jeanette wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Jeanette is partly to blame for this situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. John is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Jeanette may have encouraged John's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Jeanette should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Jeanette wearing? _____

8. Jeanette's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Jeanette should do about this situation below:

Jeanette

Please read the story and **circle** your answer to the questions below.

Jeanette was planning on going to a dance party on campus. Jeanette decided to wear jeans and a t-shirt, which accentuated her dark black skin. When Jeanette arrived at the dance party John, a classmate from English, approached Jeanette. John and Jeanette chatted for a little while, and then she excused herself and went to dance to her favorite song. As Jeanette was dancing, John danced alongside of her. He then, quickly moved behind her and his hands grazed her behind. Jeanette shoved John away.

For each question, please circle your answer.

1. Jeanette is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. John touched Jeanette because that is what Jeanette wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Jeanette is partly to blame for this situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. John is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Jeanette may have encouraged John's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Jeanette should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Jeanette wearing? _____

8. Jeanette's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Jeanette should do about this situation:

Jeanette

Please read the story and **circle** your answer to the questions below.

Jeanette was planning on going to a dance party on campus. Jeanette decided to wear a low-cut red blouse which accentuated her pale white skin. When Jeanette arrived at the dance party John, a classmate from English, approached Jeanette. John and Jeanette chatted for a little while, and then she excused herself and went to dance to her favorite song. As Jeanette was dancing, John danced alongside of her. He then, quickly moved behind her and his hands grazed her behind. Jeanette shoved John away.

For each question, please circle your answer.

1. Jeanette is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. John touched Jeanette because that is what Jeanette wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Jeanette is partly to blame for this situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. John is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Jeanette may have encouraged John's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Jeanette should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Jeanette wearing? _____

8. Jeanette's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Jeanette should do about this situation below:

Jeanette

Please read the story and **circle** your answer to the questions below.

Jeanette was planning on going to a dance party on campus. Jeanette decided to wear jeans and a t-shirt, which accentuated her pale white skin. When Jeanette arrived at the dance party John, a classmate from English, approached Jeanette. John and Jeanette chatted for a little while, and then she excused herself and went to dance to her favorite song. As Jeanette was dancing, John danced alongside of her. He then, quickly moved behind her and his hands grazed her behind. Jeanette shoved John away.

For each question, please circle your answer.

1. Jeanette is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. John touched Jeanette because that is what Jeanette wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Jeanette is partly to blame for this situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. John is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Jeanette may have encouraged John's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Jeanette should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Jeanette wearing? _____

8. Jeanette's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Jeanette should do about this situation below:

Lucy

Please read the story and **circle** your answer to the questions below.

Lucy decided to attend an on-campus Halloween party. Lucy decided to wear slacks and a cardigan that illuminated her pale white skin. Once at the party, Lucy noticed Max. Lucy had met Max at an informational meeting for students interested in joining the campus newspaper. Max approached Lucy to say hi. He then placed his hands on her backside. Lucy pushed Max away.

For each question, please circle your answer.

1. Lucy is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Max touched Lucy because that is what Lucy wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Lucy is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Max is completely innocent of wrongdoing?

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Lucy may have encouraged Max's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Lucy should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What is Lucy wearing? _____

8. Lucy's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Lucy should do about this situation below:

Lucy

Please read the story and **circle** your answer to the questions below.

Lucy decided to attend an on-campus Halloween party. Lucy decided to wear a short black skirt that illuminated her pale white skin. Once at the party, Lucy noticed Max. Lucy had met Max at an informational meeting for students interested in joining the campus newspaper. Max approached Lucy to say hi. He then placed his hands on her backside. Lucy pushed Max away.

For each question, please circle your answer.

1. Lucy is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Max touched Lucy because that is what Lucy wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Lucy is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Max is completely innocent of wrongdoing.

1= strongly agree

2=agree

3=neutral

4=disagree

5=disagree

5. Lucy may have encouraged Max's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Lucy should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Lucy wearing? _____

8. Lucy's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Lucy should do about this situation below:

Lucy

Please read the story and **circle** your answer to the questions below.

Lucy decided to attend an on-campus Halloween party. Lucy decided to wear slacks and a cardigan that illuminated her dark black skin. Once at the party, Lucy noticed Max. Lucy had met Max at an informational meeting for students interested in joining the campus newspaper. Max approached Lucy to say hi. He then placed his hands on her backside. Lucy pushed Max away.

For each question, please circle your answer.

1. Lucy is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Max touched Lucy because that is what Lucy wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Lucy is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Max is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Lucy may have encouraged Max's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Lucy should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Lucy wearing? _____

8. Lucy's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Lucy should do about this situation below:

Lucy

Please read the story and **circle** your answer to the questions below.

Lucy decided to attend an on-campus Halloween party. Lucy decided to wear a short black skirt that illuminated her dark black skin. Once at the party, Lucy noticed Max. Lucy had met Max at an informational meeting for students interested in joining the campus newspaper. Max approached Lucy to say hi. He then placed his hands on her backside. Lucy pushed Max away.

For each question, please circle your answer.

1. Lucy is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Max touched Lucy because that is what Lucy wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Lucy is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Max is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Lucy may have encouraged Max's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Lucy should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Lucy wearing? _____

8. Lucy's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Lucy should do about this situation below:

Sarah

Please read the story below and **circle** your answer to the questions below.

After Sarah finished her finals, she had plans to attend a party near downtown. Sarah decided to wear tight red leather pants that complimented her pale white skin. At the party, she saw Randy, her classmate, across the club. Sarah decided to dance, but she was startled when she felt Randy dance too closely behind her. Sarah quickly spun around and pushed Randy away, but Randy continued to touch Sarah's behind.

For each question, please circle your answer.

1. Sarah is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Randy touched Sarah because that is what Sarah wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Sarah is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Randy is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Sarah may have encouraged Randy's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Sarah should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Sarah wearing? _____

8. Sarah's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Sarah should do about this situation below:

Sarah

Please read the story below and **circle** your answer to the questions below.

After Sarah finished her finals, she had plans to attend a party near downtown. Sarah decided to wear a grey hoody and pants that complimented her pale white skin. At the party, she saw Randy, her classmate, across the club. Sarah decided to dance, but she was startled when she felt Randy dance too closely behind her. Sarah quickly spun around and pushed Randy away, but Randy continued to touch Sarah's behind.

For each question, please circle your answer.

1. Sarah is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Randy touched Sarah because that is what Sarah wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Sarah is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Randy is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Sarah may have encouraged Randy's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Sarah should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Sarah wearing? _____

8. Sarah's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Sarah should do about this situation below:

Sarah

Please read the story below and **circle** your answer to the questions below.

After Sarah finished her finals, she had plans to attend a party near downtown. Sarah decided to wear a tight red leather pants that complimented her dark black skin. At the party, she saw Randy, her classmate, across the club. Sarah decided to dance, but she was startled when she felt Randy dance too closely behind her. Sarah quickly spun around and pushed Randy away, but Randy continued to touch Sarah's behind.

For each question, please circle your answer.

1. Sarah is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Randy touched Sarah because that is what Sarah wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Sarah is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Randy is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Sarah may have encouraged Randy's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Sarah should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Sarah wearing? _____

8. Sarah's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Sarah should do about this situation below:

Sarah

Please read the story below and **circle** your answer to the questions below.

After Sarah finished her finals, she had plans to attend a party near downtown. Sarah decided to wear a grey hoody and pants that complimented her dark black skin. At the party, she saw Randy, her classmate, across the club. Sarah decided to dance, but she was startled when she felt Randy dance too closely behind her. Sarah quickly spun around and pushed Randy away, but Randy continued to touch Sarah's behind.

For each question, please circle your answer.

1. Sarah is completely innocent of wrongdoing.

1= strongly agree

2=agree

3= neutral

4= disagree

5= strongly disagree

2. Randy touched Sarah because that is what Sarah wanted.

1= strongly agree

2= agree

3= neutral

4= disagree

5= strongly disagree

3. Sarah is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Randy is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Sarah may have encouraged Randy's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Sarah should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Sarah wearing? _____

8. Sarah's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Sarah should do about this situation below:

Appendix D

Filler Vignettes

Jamie

Please read the story and **circle** your answer to the questions below.

Jamie awoke to a text message about an on-campus social. Once she arrived, she danced to their favorite songs while wearing a short, black sparkly dress that contrasted with her dark black skin. Dean, one of Jamie's new friends, angrily approached Jamie about her previous comments about their friendship. Dean accused Jamie of telling her girlfriends that she and Dean were becoming more than just friends. Dean cursed at Jamie and told her to stop telling lies about their platonic friendship.

For each question, please circle your answer.

1. Jamie is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

2. Dean yelled at Jamie because that is what Jamie wanted.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

3. Jamie is partly to blame for the situation.

1= strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Dean is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Jamie may have encouraged Dean's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Jamie should have worn different clothing.

1=strongly agree

2= agree

3=neutral

4=disagree

5=strongly disagree

7. What was Jamie wearing? _____

8. What is Jamie's race?

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Jamie should do about this situation below:

Julie

Please read the story and **circle** your answer to the questions below.

Julie was excited about attending a Homecoming after-party. Julie decided to wear beige capris, which contrasted with her dark black skin. At the party, Julie danced to her favorite songs. Later, Julie saw Alex, one of her classmates and she went to say hello. Alex yelled at Julie, asserting that she was spreading lies about a comment he made.

For each question, please circle your answer.

1. Julie is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

2. Alex yelled at Julie because that is what Julie wanted.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

3. Julie is partly to blame for this situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Alex is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly agree

5. Julie may have encouraged Alex's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Julie should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly agree

7. What was Julie wearing? _____

8. What is Julie's race?

a. Caucasian

b. Hispanic

c. African-American

d. Asian-American

9. Please describe what Julie should do about this situation below:

Erica

Please read the story and **circle** your answer to the questions below.

Erica is the co-president of the college's student council and she was invited to an event planning party. Erica wore a halter top which illuminated her pale white skin. Jim, the treasurer of the student council was also present at this party. Jim disliked the way Erica organized the last student council meeting, so he began to spread rumors about Erica among the students. At the event planning party, Jim found Erica and yelled at her about how she organized the meetings.

For each question, please circle your answer.

1. Erica is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

2. Jim yelled at Erica because that is what Erica wanted.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

3. Erica is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Jim is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Erica may have encouraged Jim's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Erica should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Erica wearing? _____

8. Erica's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Erica should do about this situation below:

Mary

Please read the story and **circle** your answer to the questions below.

Mary decided to attend an on campus ice cream social. Mary wore beige capris which stood in stark contrast against her pale white skin. Mary had to set up all of the ice cream booths. Fred, Mary's classmate, was assigned the role of setting up the music. Fred became irritated when Mary started to state her opinion on the music. Fred became increasingly irritated and loudly yelled at Mary.

For each question, please circle your answer.

1. Mary is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4= disagree

5= strongly disagree

2. Fred yelled at Mary because that is what Mary wanted.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

3. Mary is partly to blame for the situation.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

4. Fred is completely innocent of wrongdoing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

5. Mary may have encouraged Fred's behavior.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

6. Mary should have worn different clothing.

1=strongly agree

2=agree

3=neutral

4=disagree

5=strongly disagree

7. What was Mary wearing? _____

8. Mary's race is

a. Hispanic

b. Caucasian

c. African-American

d. Asian-American

9. Please describe what Mary should do about this situation below:

Appendix E

Demographic Survey

1. What is your age? _____

2. What is your year in school? **Circle** your answer.

Freshmen Sophomore Junior Senior

3. What is your race/ethnicity?

- a. Non-Hispanic white
- b. African-American
- c. Asian-American
- d. Hispanic
- e. Other _____

4. What is your major? _____

5. Male or Female? **Circle** your answer.

6. Have you ever been the victim of peer sexual harassment? **Circle** your answer. Yes or No

Appendix F

Feedback Letter

Thank you for participating in my study. The present study was conducted in order to determine if there were significant differences in how college students' perceive culpability in sexual harassment scenarios as a result of varying victim race (African-American women and Caucasian women) and promiscuity. Filler vignettes were used to distract from the true purpose of the study. I hypothesized that participants would rate the promiscuous African-American victim as more culpable than the non-promiscuous African-American, the promiscuous Caucasian, and the non-promiscuous Caucasian victim.

Please note that no identifying information about you will be associated with any of the findings, nor will it be possible for us to trace your responses on an individual basis.

If you are interested in obtaining the final results of this study, or if you have any questions or concerns regarding any portion of this study, please do not hesitate to let us know now or in the future. Our contact information is found at the bottom of this letter.

Thank you again for your valuable contribution to this study. If you would like to discuss your own experiences with sexual harassment there are free resources available. Please contact the Student Counseling and Resource Center in St. Charles, MO 63301 at 636-949-4528.

Sincerely,
Principal Investigator:
XXX

Supervisor:
Dr. Michiko Nohara-LeClair
Contact Information: 636-949-4371 (mnohara-leclair@lindenwood.edu)

The Effects of Music on Concentration

Logan Rizzo⁹

This study covered the origins of music and discussed the various implementations of music into our everyday society. We still do not quite understand how one comes to have a preference for music, although through research we have made some really good estimates regarding how one chooses a favorite. Researchers have proposed the ideas that music preference is chosen based on context as well as overall mood of the listener, but suggest maybe there is a more in depth reason. Using the idea of musical preference, we have studied performance on a variety of tasks including, but not limited to; exercise, reaction time, and pain reduction. Music has been shown to improve the ability of athletes during exercise, decrease reaction time to unexpected stimuli, and nullify chronic and acute pain. Concentration during a task relies heavily on ones surroundings and the state of mind of the individual; and by listening to music, he/she will be able to overcome numerous obstacles.

The earliest estimated incidence of music is dated back at least 35,000 years ago, and since then we still do not understand it completely (Schafer & Sedlmeier, 2010). What is it about music that captures our deepest emotions? Around 500 B.C., Pythagoras searched for an answer to this. His conclusion was that human variance of musical appreciation is related to the number of chords produced (as cited in Schafer & Sedlmeier, 2010). Many attempts have been made in regards to figuring out the connection between music and preference; however, many of these attempts have been made without evidence. Two theories stand as to why we prefer one type of music over another. LeBlanc stated that music is based on character and input of chords and harmonics and Hargreaves claimed that preference is based on context and mood of the listener (LeBlanc as cited in Schafer & Sedlmeier, 2010). Music has been sought after for many different

⁹ Logan Rizzo, Psychology, Lindenwood University

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reasons varying from pain relief, increased reaction time, relaxation methods, as well as increasing performance in sports and exercise.

Audioanalgesia is the term that has been used to describe the practice of music in pain relief. Perlini and Viita (1996) did a study in which they purposefully caused pain in participants and informed them that they would be listening to music to see if it relieved their pain. The participants were introduced to a variety of songs and were told to select one in particular based on its name under the assumption that this song would be what they listened to. In some scenarios, participants got to listen to the song they selected; while in others, the researchers avoided the selected song and played something completely different (Perlini & Viita, 1996). The results showed that when the requested music was played, participants experienced a less intense pain than those who received a different song than what they had originally requested (Perlini & Viita, 1996). Not only during administration of the music was this effect noted; during a brief interview, some participants that were expecting their requested song reported less pain than their counterparts who anticipated they were going to receive something different. Perlini and Viita (1996) were convinced the reasoning behind this was linear; the expectancy of preferred music led to feelings of control in the situation, and in turn these feelings of control led to an altered perception of anticipated pain. If music altered our perception of a situation, perhaps it also plays a similar role in a variety of other fields.

Hirokawa (2004) performed a similar study to that of Perlini and Viita (1996) but rather than inflicting pain on his participants, he questioned older adults on their arousal and requested they read a passage and recall a few words. Prior to the readings, he had the participant fill out an Activation-Deactivation Adjective Check List, or AD ACL, which determined their tiredness level, calmness level, and tension level. After the participants completed the check list, they were

exposed to one of three conditions: a) silence b) preferred music or c) an audio relaxation recording (Hirokawa, 2004). Following each trial, another AD ACL was filled out to determine their tiredness, calmness, and tension post-trial. In regards to calmness, music was the only one to decrease following the experiment; tension was reduced the most following silence, and reduced the least when listening to relaxation recording (Hirokawa, 2004). In regards to tiredness, Hirokawa's (2004) results showed that silence made the participant more tired than any other trial. Relaxation recordings were slightly below silence in degree of tiredness, whereas with music there was little to no increase in tiredness levels. People often listen to music when driving if they are tired, but it has always been unclear why.

In a study done by Turner, Fernandez, and Nelson (1996), music volume was matched up with reaction time to determine if music inhibited people's response time. There was a control based on the participant's most comfortable volume and this varied for each participant. There were then two trial conditions that were a) plus or minus 10 decibels (dBA) of the control volume and b) silence. They found the average comfort level of the participants was around 70 dBA, and coincidentally this was the optimal level for reaction time while increasing or decreasing the volume increased the time it took to react (Turner et al., 1996).

This can be explained by the cue-utilization theory which we can relate to driving. While listening at a low volume we can pick up on all the sounds surrounding us, relevant and irrelevant (e.g., sirens, or animals). As the volume increases, we are less likely to hear the quieter sounds (animals) and only pick up on the more relevant ones (sirens). However, if the volume is too high then we tend to miss some of the relevant information all together (sirens), and therefore we are more likely to react slowly to these objects when they appear in our visual field (Easterbrook as cited in Turner et al., 1996). Reaction time is heavily based on focus, but one has

to wonder how music plays a role when focusing on something requiring physical exertion as well.

When someone goes to the gym, it is not uncommon to see him/her with a pair of headphones in. Is this actually helping his/her performance, or is it just a means of tuning everything else out, or both? Karageorghis and Terry (1997) concluded that it depends on the type of exercise involved. If the exercises were “submaximal,” or considered a routine exercise, then listening to music actually diverts your attention from your muscles and diminishes the feelings of fatigue. However, if the exercises were considered “extensive” (i.e., heavier weights, faster speeds, longer times) then there is no way for your body to divert its attention to anything but your muscles, and therefore has no effect on feelings of fatigue (Karageorghis & Terry, 1997). During the experiment, Karageorghis and Terry (1997) tested the effects of different types of music and found that slower types and even faster modern rock significantly lowered the participants’ heart rate and allowed them to perform better.

The present study was designed to see if a participant’s preferred type of music increases their performance on a concentration task more than the relaxing, slow/classical type of music.

Method

Participants

Participants were recruited using the Lindenwood University Participant Pool (LPP), a department of the University that allows Lindenwood students to participate in student experiments. There were a total of 19 participants, and 3 of those had to be discarded due to being hard of hearing (N=16). A majority of the participants were male, accounting for 68.75% of the participants. Out of the 16 remaining participants, 3 were familiar with, or have played the game *Fall Down* in the past. On a scale of 1 to 10, participants were asked whether or not they

listened to music while studying; I concluded that answers at or above five would be considered a “yes,” and below a five considered a “no.” Using this system, 9 out of 16 participants used music while concentrating; however, I found it interesting that 6 out of those initial 9 found background noises distracting greater than 50% of the time. When asked their favorite type of music 25% preferred Rock, 18.75% preferred Country, 12.5% preferred Classical, and 43.75% preferred Other. Participants were given bonus points through the LPP as compensation for participating in the study.

Materials

The setting for this experiment was any quiet room with minimal distracters (no TVs, no other people aside from myself and the participant, and no loud noises) on the Lindenwood campus. Specifically, I used a room with two chairs, and one desk to comfortably sit myself and my participants on the first floor of Young Hall on Lindenwood’s campus. The participants were given a Sony Vaio laptop with the game *Fall Down* (Hit Free Games, 2013) installed onto it, as well as a pair of *Razer* noise cancelling, over-the-ear headphones to ensure no other noises were being heard. The Classical, Rock, and Country songs used in this study were: *The Marriage of Figaro* by Mozart (Mozart, 1786), *The Dirt Whispered* by Rise Against (McIlrath, 2008), and *Tennessee Flat Top Box* by Johnny Cash (Cash, 1964) respectively. These particular songs were used for their highly different musical qualities and a relatively similar length. Another deciding factor for these songs was that I was able to find instrumental versions, which meant that I could exclude lyrics as a factor.

Procedure

Fall Down is a game that is played on a computer by guiding a falling ball through a series of holes in the ground without allowing the ball to be pressed to the top of the screen (Hit

Free Games, 2013). Ideally, I wanted to find something that didn't require much skill, and one that specifically required concentration. The idea here is that the more you concentrate (potentiated by music), the better your performance will be in the game. In my search, I identified this particular game to be a good tool for this experiment. Particularly because *Fall Down* already has a standardized scoring system which provides reliable measurements and is based solely on concentration rather than skill (Hit Free Games, 2013). Utilizing the data collected, there was no significant correlation between familiarity and general scores, all values were at least $p > 0.300$.

Participants were given two copies of the informed consent (see Appendix A) and a copy of the demographic questionnaire (see Appendix B). The questionnaire asked participants to rank the different music styles (classical, rock, country, or none) in order of their personal preference. The experiment consisted of four trials, a control, and three experimental trials. Since this experiment was designed to look at the effects of different types of music on concentration and reactions I had to create a control to determine baseline performance. In the control condition, participants were exposed to no music at all, categorized as "other." In order to assure that the participants did not get distracted by external sounds, they were given noise cancelling headphones to drown out any background noises. The three experimental conditions involved exposing participants to classical, country, and rock – considered to be very different genres – music while playing the game *Fall Down*. Different genres of music vary on their tempo as well as content. Since lyrics were removed, these were categorized based on tempo; rock having the fastest tempo, country having moderate tempo, and classical having the slowest. Prior to the participants starting the game, they were introduced to each song in order to familiarize themselves with it so as to reduce any further distractions throughout the study.

Following the introduction of the songs, participants started to play the game. In an attempt to reduce the effect of order, I counterbalanced the conditions by alternating genre preferences with play order. For example, if the participant's favorite genre was country, only the country order was affected while the other three genres remained in their respective order. I created four orders for playing the songs, each of which changed positions based on the participant's first preference. Each category cycled through these four play orders independently of one another. After the participants played a game under one of the conditions, their scores were recorded. This process was repeated for all the remaining conditions. Following completion of the four conditions, the participants were given a feedback letter (see Appendix C) and asked if they had any questions in regards to the study, access to the study, or the process in general.

Results

My primary hypothesis stated that when a person played the game with their most preferred type of music, than his/her score would be greatest following the preferred condition. Using my data I performed a repeated measures Analysis of Variance (ANOVA) and tested for significance. The results did not reveal a statistically significant main effect of music, $F(3,45) = 0.102$, $p = 0.942$. My secondary hypothesis claimed that if the first music preference fails to produce greater results, then Classical music will be the leading producer for results due to its innate relaxing qualities. Using the same group of participants, but a separate category for data, I ran another ANOVA; the results were very similar to my first hypothesis where my F value was calculated at 0.169, and $p > 0.05$ ($p = 0.905$). I failed to reject the null hypothesis on both my hypotheses.

Discussion

I found that there was no statistical correlation between preference order, and performance on a concentration task. I also found that there was no statistical correlation showing that Classical music produced better results than any other genre of music. However, I did find a measurable difference among the raw scores of the Classical category that indicated that it produced higher overall scores. Since I failed to reject the null hypothesis, I came to the conclusion that it is because the participant was too distracted by the music. If I hear my favorite song on the radio, I immediately focus in on the song, rather than the task at hand. Perhaps, this was the reason for the mixed results, and the same reason that the third preference actually had the highest average of the four conditions. If a song playing is one that is not preferred then perhaps one is more likely to ignore it and put their attention elsewhere.

In the future this study could be improved upon by granting a wider range of musical preferences. For example, rather than supplying an alternative music preference for the “other” category, I chose to use it as my control and not use any form of music. Considering that 43.75% of my participants rated “other” as their favorite preference, I may have found evidence supporting my hypothesis had I provided a corresponding type of music. I also feel that a greater sample size would have produced better results, particularly because during my study I noted that some people followed their music preference exactly. By this I mean that some people’s scores on the game correlated exactly with their music preference (i.e., their first preference equated to the highest score and their last preference equated to their lowest score). If I had a larger sample size perhaps these findings would have been more representative and produced significance in my data. Another alternative for studying the effects of music preference on concentration would be finding a different task as means of concentrating. I say this because

there were times during the study where the game play was slowed by the internet connection and could have potentially decreased the participant's scores.

If I were to do this experiment again, I would choose a game that is stored directly to the computer and does not require an internet connection. The game *Snake* requires no internet connection, has a standardized scale, and requires minimal skill. This would make a suitable alternative because there could be no interruption and the only object that moves is the object you are controlling. Another alternative would be the board game *Operation* because there is no external factors that play into this game (e.g., internet connection, unfamiliarity with the computer). However, using this method I would have to use a different standard of measurement, and time would replace overall score.

References

- Cash, J. (1961). Tennessee flat top box On *Ring of fire: The best of Johnny Cash*. Columbia Records. (December 1964).
- Hirokawa, E. (2004). Effects of music listening and relaxation instruction on arousal changes and the working memory task in older adults. *Journal of Music Therapy*, 41(2), 107-127.
- Hit Free Games. *Fall down* [Flash game]. Retrieved on February 2013 from <http://www.hitfreegames.com/flash-games-1625/Falldown.html>
- Karageorghis, C. I., & Terry, P. C. (1997). The psychophysical effects of music in sport and exercise: A review. *Journal of Sport Behavior*, 20(1), 54-68.
- McIlrath, T. (2008). *The dirt whispered* [Recorded by Rise Against]. Fort Collins: Blasting Room. (January 2008).
- Mozart, W. (1786). *The Marriage of Figaro* [Composed by Wolfgang Amadeus Mozart].

Perlini, A. H., & Viita, K. A. (1996). Audioanalgesia in control of experimental pain. *Canadian Journal of Behavioral Science, 28*(4), 292-301.

Schafer, T., & Sedlemeier, P. (2010). What makes us like music? Determinants of music preference. *Psychology of Aesthetics, Creativity, and the Arts, 4*(4), 223-234.

Turner, M. L., Fernandez, J. E., & Nelson, K. (1996). The effect of music amplitude on the reaction to unexpected visual events. *The Journal of General Psychology, 123*(1), 51.

Appendix A
Informed Consent

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

The Effects of Music on Concentration

Principal Investigator: Logan Rizzo

Participant _____ Contact info _____

You are invited to participate in a research study conducted by Logan Rizzo under the guidance of Dr. Michiko Nohara-LeClair. The purpose of this research is to determine whether listening to a certain type of music (i.e., rock, country, and classical) has any effect on performance while playing a game. Your participation will involve a) filling out a brief survey regarding music preferences and concentration practices and b) playing multiple games of "Fall Down" while listening to three different types of music and one with no music; *The Marriage of Figaro* by Mozart (classical), the instrumentals of *The Dirt Whispered* by Rise Against (rock), and the instrumentals to *Tennessee Flat Top Box* by Johnny Cash (country). This study should take approximately 15 – 20 minutes of your time. Your participation in this study is strictly voluntary. The information necessary in order to receive your extra credit will be given to you upon completion of or withdrawal from the study. There are no anticipated risks associated with this research and there are no direct benefits for you participation. However, your participation will contribute to the knowledge about the effects of music on our concentration skills and may help society as a whole. Your participation is voluntary and you may choose not to participate in this research study or to withdraw your consent at any time. You may choose not to answer any questions that you do not want to answer. You will NOT be penalized in any way should you choose not to participate or to withdraw. As part of this effort, your identity will not be revealed in any publication or presentation that may result from this study and the information collected will remain in the possession of the investigator in a safe location until the end of the study at which point it will be destroyed. If you have any questions or concerns regarding this study, or if any problems arise, you may call the XXX or the Supervising Faculty, Dr. Michiko Nohara-LeClair at 636-949-4371. You may also ask questions of or state concerns regarding your participation to the Lindenwood Institutional Review Board (IRB) through contacting Dr. Jann Weitzel, Vice President for Academic Affairs at 636-949-4846.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I consent to my participation in the research described above.

I wish to receive the final results via e-mail at the e-mail address indicated above.

Participant's Signature Date

Participant's Printed Name

Signature of Principal Investigator Date

Investigator Printed Name

Appendix B
Questionnaire/Demographic Survey
Music and Concentration Questionnaire

1) Gender:

Male Female Prefer not to share

2) Please rate the following types of music in order of favorite (1) to least favorite (4).

Rock Country Classical Other

3) How often do you listen to music while trying to concentrate? (1 = never, 10 = all the time)

1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

4) Is there a certain type of music that you primarily listen to while trying to concentrate? If you said "never" to the previous question, skip and go to Question 5.

Yes, _____ (please list type of music)

No.

5) How much do background noises distract you? (1 = not at all, 10 = always)

1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

6) How familiar are you with the game *Fall Down*? (1 = not at all, 10 = very familiar)

1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

7) Are you, or would you consider yourself hard of hearing?

Yes

No.

Scores: **Rock** **Classical** **None** **Country**

Appendix C
Feedback Letter

Thank you for your participation in my study. The study was designed to test whether a person's favorite type of music would yield the best results during a concentration task. My prediction here was that if a person's favorite type of music was Rock, then their score during the Rock condition of the experiment would be highest. If the findings support my hypothesis perhaps we can apply the study to our personal lives and better our concentration at home, school, or even work. If you have any questions or concerns following the research, please feel free to contact me at 636.627.9114 or LPR428@gmail.com.

Thank you!

Logan Rizzo

Parenting Styles and Their Relation to Child Activity Levels

Jessica Sibley¹⁰

This study was designed to examine the relationship between parenting styles and how they recorded their child's activity levels. An 18 question survey was available to participants that asked questions in reference to the parenting style they feel they associate with most, as well as questions regarding their child's hyperactivity, sleeping patterns, eating patterns, and their daily activity.

A raving topic in today's media is obesity and health issues among today's population and a bigger issue in relation to the children of today society. While schools have made attempts to help solve this issue by restricting the high calorie foods and drinks kids have accessibility to through the school where they have decreased their portion size and made healthier choices of the foods they serve, the issue still exists in today's society.

One longitudinal study found to be substantial in relating parenting styles to children who were found to be overweight, meaning that there was a relation found between parenting styles and the child's weight but it is unclear if we can state that parenting styles do effect a child's weight (Ventura & Birch, 2008). This study found that mothers who practiced more of the authoritative parenting style were less likely than the other parenting styles, to have children classified as overweight. (_____ as cited in Ventura & Birch, 2008)

There are many factors that can be a result of children's eating habits and obesity, such as when a child eats, portion size, if they eat in distress, what they eat, as well as if food is a form of the parent's positive reinforcement (Ventura & Birch, 2008). Another contributing factor to a child's obesity is his/her activity level. Whereas many can argue that a child is overweight due to their low activity level, many can also argue that a child has a low activity level because the child

¹⁰ Jessica Sibley, Department of Psychology, Lindenwood University.

is overweight. Both these point of views may be valid so I decided to focus on parenting styles and their relation to his/her child's activity level aside from the aspect of weight.

Hennessy, Hughes, Goldberg, Hyatt, and Economos (2010) conducted a study involving children ages 6 to 11 and had their activity level measured by wearing an Actigraph model 7164 accelerometer and parents were categorized into one of the four parenting styles (authoritative, authoritarian, permissive and uninvolved) based on the PDI-S and Maccoby and Martin's approach (as cited in Hennessy, Hughes, Goldberg, Hyatt, & Economos, 2010). The PDI-S (parental dimensions inventory-short form) examined the parents support, control, and structure based on the questionnaire parents were required to complete (Hennessy et al., 2010). The study did have a slight focus on the child's height, weight, and eating habits, its main focus was on the relations between parenting styles and the child's activity level. Results conclude that parents who practiced a permissive parenting style had children who had a higher MVPA (moderate to vigorous-physical activity) than the other three parenting styles, where uninvolved parents had children who had the least amount of MVPA with a negative association (Hennessy et al., 2010).

Saunders, Hume, Timerio, and Salmon (2012) conducted a cross-sectional and longitudinal study in 2004, with a follow up in 2006, which used similar methods as Hennessy and colleagues. The study focused on adolescent girls but categorized activity to walking/cycle trips and organized sports. Saunders et al (2012) also gathered information pertaining to weight, height and used accelerometers to measure MVPA, it also used a questionnaire asking the adolescent girls to report the frequency of walking and cycling trips and participation in organized sports. Another questionnaire was given to parents to help classify their parenting practices which include indulgent, authoritarian, authoritative and neglectful (Saunders et al, 2012). Results from the cross-sectional examination suggest that there is a positive relation

between the frequency of organized sports and authoritarian parenting styles, where there was a negative association between authoritative and indulgent parenting with the frequency of walking/cycling trips (Saunders et al, 2012). When focusing on the longitudinal study from 2004 to 2006, there was no association found meaning from 2004 to 2006 there was no relation found between parenting styles and the amount of organized sports and/or walking trips (Saunders et al, 2012).

The purpose of the present study was to examine the relationship between parenting styles and a child's activity level at the day care age. Most studies found when conducting research for this study focused on children six and up, and I felt as though a child becomes active at such a young age, it is important to see how these parenting styles relate at such a highly developmental age. A child becomes active upon birth, and grows in activity throughout life. From birth to kindergarten, a child learns a lot of mobility techniques; from rolling over, sitting up, crawling, to walking, running, climbing, and even possibly riding a bike. Every age of a child's life is critical to learning, these young ages are very high in learning mobility, thus important to activity level.

Out of the four parenting styles I focused on: authoritative, authoritarian, indulgent, and neglectful, I expected to find a strong positive correlation between those who categorized their parenting style as indulgent to reporting his/her child with a higher activity level. I expected this due to recollection of personal encounters I have experienced with the different types of parenting styles and the children who correspond to them. I also believe this to be true in reference to the Sanders et al., study where there was a negative correlation found between indulgent parents and walking/cycling trips of their adolescent teens.

In order to discover a more accurate result, the study was done in the form of an anonymous online survey. I felt this would be best fit due to the sensitivity of the topic as well as sensitivity to some of the question participants were asked to answer. I felt as though participants are more likely to answer truthfully when the survey would be taken anonymously. Also, where physical activity level is defined as the total energy cost of physical activity throughout the day (a ratio of metabolic rate) because of lack of resources (Bender, 2005), I was unable to properly obtain activity levels due to not being able to determine calorie intake vs. metabolism of the child. I did however, ask a few questions in regards to eating habits, sleeping habits, as well as weight/height (percentiles if known) to help get a better picture the child's food intake, calories burned, and activity levels.

Method

Participants

There were 50 participants who took place in this online survey, where 11 participants dropped out after giving consent. The age ranges of participants were 20 to 40 with a mean age of 26.5. This age range was based on the participants who gave an accurate answer to their age, while some may have misread the question and answered with the response of their child's age. Participants were recruited from three local daycares in the Florissant and Hazelwood area. Participants were also recruited from an online website Facebook where links were posted on the primary investigator's personal Facebook page as well as a parenting group "Parents online resale group St. Charles County". Snowball sampling was also used to help recruit participants due to the sharing and reposting of some individuals on Facebook.

Materials and Procedure

The primary investigator first created the 18 question online survey at SurveyMonkey.com (see Appendix A); this method was chosen to keep all participants anonymous, even to the primary investigator, because the study dealt with a sensitive subject. Meanwhile, the investigator gained permission from local daycares using the permission letter (see Appendix B) to inform them of information they may need. After finalizing the survey, the link <https://www.surveymonkey.com/s/YSN386L>, was posted at the local daycares using flyers (see Appendix C) to give any interested party knowledge of where to find the survey, what the survey was about, and contact information; the same link was also posted on Facebook in the parenting groups as well as the investigator's personal page. Once participants decided to participate, the link brought them to the first step of the survey, the cover letter and consent statement. If participants agreed to continue after reading the consent form by clicking "yes," Survey Monkey allowed them to continue to the next page which was the 18 question survey.

The survey consisted of questions regarding the participants' parenting styles, their child's eating habits, sleeping habits, as well as questions regarding their child's daily activities. After completion of the survey, participants then viewed the information letter that automatically appeared (see Appendix A).

Results

After closely analyzing the data, I have found that the results of my study no relation between parenting styles and their child's activity level. I would even say the results are inconclusive due to the fact that there were not enough participants associating with each parenting style to even determine a relation between parenting styles and activity levels.

Parenting Styles

Of the 50 participants, 11 gave consent to participate in the current study but resigned from further participation without completing any further questions. Of the participants, 30 said to associate themselves with the authoritative parenting style, 2 associated with authoritarian parenting style, 12 associated with the indulgent parenting style, and only 1 associated with the neglectful parenting style. Of the one who associated with the neglectful parenting style, they also associated with practicing the indulgent parenting style as well. Of the 30 who associated themselves with the authoritative parenting style, 6 of them also associated with the indulgent parenting style. Figure 1 demonstrates the percentages of participants associating with each parenting style; keep in mind that some participants choose multiple parenting styles where they are included in both parenting styles separately (meaning one who chose indulgent and authoritative is included in the indulgent percentage as well as the authoritative percentage since there is no category for indulgent and authoritative).

When the authoritative parents were asked if there was anyone else highly influential in their child's life that practices a different parenting style, only 9 participants said yes. Of these 9 participants 8 of which said that person practices the indulgent parenting style where only one said that person practices the authoritarian parenting style. Also, 1 of the participants also said to have practiced the indulgent parenting style prior to practicing the authoritative parenting style whereas the other 29 said they have always practiced authoritative.

When the authoritarian parents were asked the same questions only one said there is an individual highly involved in their child's life that practices a different parenting style, where the parenting style was also the indulgent parenting style. The same participant was also the one who

associated with the neglectful parenting style; where both authoritarian parents said they have always practiced the same parenting style.

When the indulgent parents were asked, six participants said there is an individual who is highly involved in their child's life who practices a different parenting style. Of these participants, five said these individuals practiced the authoritative parenting style, and only one said the authoritarian parenting style. Remembering that six of the twelve participants who practice the indulgent parenting style also said to practice the authoritative parenting style, I then wanted to see if these individuals in fact practiced a different parenting style than the participants (due to the fact that the participants may practice authoritative as well). Of the six participants who said to practice both, only two said another person highly involved practiced a different parenting style. This leaves four who truly had someone else involved that practiced a different parenting style. Out of all twelve of those practicing indulgent parenting styles, two said they previously practiced a different parenting style; one practiced authoritarian and one practiced authoritative (the one who practiced authoritative was no one who associated with both indulgent and authoritative currently).

Child Demographic Information

Children's age ranged from 5 months to 6 years old with a mean age of 1.8 years old. There was almost an equal amount of children who were identified as male and female, with 51.3% being female, and 48.7% being male. Of those participants who associated with the authoritative parenting style, 50% of them said to have a child that is 1 year old. Of those participants, 13.3% had a child under the age of 1, 16.7% had a child 2 years old, 13.3% had a child 3 years old, 3.3% had a child 4 years old, and 3.3% had a child 6 years old. 56.7% of

parents that associated with authoritative parenting styles had female children, and 43.3% had male children.

The two participants who associated with authoritarian parenting styles, one had a 1 year old, and the other had a 4 year old; one child was male, and one was female. Of the 12 participants who associated with the indulgent parenting style, 50% said to have a 1 year old child. Of the indulgent parents, 8.3% had a child under 1 year old, 8.3% had a 2 year old, 8.3% also had a 3 year old and 25% had a 4 year old. Indulgent parents also had a 50/50% of children who were male and female. Finally, of the one participant who associated with neglectful parenting style (also chose authoritarian), their child was a 1 year old female.

Eating Habits and Child's Measurements

Where few participants' children were still on bottles, of those who were eating full meals a day, the average amount of meals consumed a day was 2.96, where the meals ranged from 2 to 5 meals a day. Those who had infants appeared to eat the normal amount compared to their age. This average amount of meals a day was equivalent for all parenting styles besides authoritarian who had an average of 2.5 daily meals. Snack intake range from zero snacks a day to four a day, with an average of 2.8 snacks a day.

For authoritative parents, the average snack in take was 2.6 snacks a day ranging from zero to four. Most authoritative parents said to give their child three snacks a day at 36.7%, where 26.7% give their child two snacks a day, 23.3% give their child 4, 6.7% give their child one, and 3.3% said they do not give their child any snacks throughout the day. Indulgent parents had 42% of which give their child four snacks daily, where 33.3% said to only give two, 16.7% give their child three, and 8.3% claimed to give their child no snacks throughout the day. Of the

two parents associating with authoritarian parenting style and the one associating with neglectful, all said they give their child four snacks daily.

Sleeping Patterns

The hours a child slept at night ranged from 5-8 hours to more than 12 hours a night; the average amount of sleep a night was 9-12 hours. Authoritative parents un-shockingly had a 73.3% of children sleeping 9-12 hours a night. This is not shocking because of the majority of individuals associating with authoritative parenting style. Only 23.3% said their child sleeps 5-8 hours, and 3.3% said their child sleeps over 12 hours a night. The authoritarian and neglectful parenting styles all said their child sleeps 9-12 hours a night. Where the indulgent parenting style had a 75% of which sleep 9-12 hours where the other 25% said their child sleeps 5-8 hours a night.

When participants were asked on average, how many naps their child takes a day, answers ranged from zero to two. With most participants stating their child takes one nap a day, with 57.9% (see Figure 2) where most naps lasted an average of an hour to an hour and a half (see Figure 3).

Those associating with authoritative parenting styles had a 31% (nine participants) of which saying their child takes two naps daily where double that amount said their child takes one nap daily. Only two stated that their child does not take a nap at all. Of this parenting style, over half the participants who's children did take naps said their child sleeps between 61 minutes to 1 ½ hours. There was 30% who said their child sleeps over 1 ½ hours, 15% said their child sleeps from 31 minutes to an hour, and one participant (3.7%) said their child sleeps less than 30 minutes.

When reviewing the authoritarian parenting styles, one participant said their child does not take a nap but then stated that their child takes less than a 30 minute nap which counters acts with the previous answer of no naps. The other participants associated with authoritarian parenting styles, their child was said to take one nap lasting from 61 minutes to 1 ½ hours. This participant was also the one who associated with the neglectful parenting style as well.

For indulgent parenting styles, only two participants (16.7%) said their child does not take naps (which is the same two individuals from the authoritative parenting style who said their child does not take naps as well). Of the remaining 10 participants, half said their child takes 1 naps while the other half said 2 (41.7% for both). Of the 10 participants that said their child takes naps only one participant said their child sleeps less than 30 minutes while on the other end of the spectrum, only one participant said their child sleeps over 1 ½ hours. With the remaining eight participants, half said their child sleeps 30 minutes to an hour, while the other half said their child sleeps 61 minutes to 1 ½ hours (40% for both).

Activity Level

Figure 4 demonstrates the percentages and numbers for all participants who rated their children's hyper activity level. Most participants stated their child's hyper activity level was at a level of 3 with 41%. No participants associated their child with a hyper activity level of one.

For authoritative parents, the activity levels were all over the board, with the most of 11 participants stating their child has an activity level of 3 (36.7%), which was closely followed by 10 participants associating with a level 2 hyper level (33.3%). When relating the authoritative parenting styles with the overall responses to this question I found that all participants who said their child had an activity level of five practiced this authoritative parenting style; where four out of the 8 who said their child had a level for 4 also practiced the authoritative parenting style.

Over all, only 13.3% of authoritative parents said their child had an activity level five (see Figure 5).

For authoritarian parenting styles, both participants said their child had a activity level of three, which also means that the one parent associating with neglectful parenting had a child with the activity level of three as well. For the indulgent parenting style, the activity level of three also got the most responses at 41.7%, which was closely followed with 33.3% of an activity level of four, while also being closely followed by an activity level of two with 25%.

Ranking of Activities from Most Favorite to Least Favorite

Figure 6 illustrates the number of participants who ranked their child's activities from most favorite to least favorite. Activities included: Read/look at books, watch TV/play video games, eat, sleep, walk/crawl, play catch/roll a ball, run, dance, climb, and ride a bike. Over all, reading/looking at books received was ranked the highest in terms of most favorite activity at 29.7%, where walking/crawling was ranked highest for second favorite at 16.2%, and the highest ranked activity for third favorite was watching TV/playing video games at 27%.

For authoritative parents, 28.6% listed reading/looking at books as their child's most favorite activity. When participants were asked what their child's second favorite activity was, 17.9% said dancing and when asked what their child's third favorite activity, 32.1% said their watching TV/playing video games.

For the authoritative parenting styles, due to only two associating with this style, the activity that was listed as most favorite was tied with one participant stating their child's most favorite activity is reading/looking at books, the other participant stated their child's favorite activity was watching TV/playing video games. For the second favorite activity, one stated walk/crawl, while the other stated riding a bike, but for the third favorite activity both

participants stated climbing. Again, one of the participants had also chosen neglectful as their parenting style and that participant chose reading/looking at books as the most favorite, and walking/crawling as their second favorite.

Finally, the activity for most favorite that indulgent parents chose was eating with 41.7%. For the second favorite activity there was a tie between watching TV/playing video games and walking/crawling with both having 25%. Also at 25% for the third favorite activity was watching TV/playing video games.

Discussion

After careful data analysis, I have found that there is not enough data to accurately interpret the results. Where I hypothesized that those associating with indulgent parenting styles would have a higher child activity level my results found that the average hyper activity level for each parenting style did not show significant differences with all associating with an average of a three in terms of hyper level. Although the authoritative parenting style had the only participants who associated with a level five hyper level as well as more activity levels in the range of four, the average activity level still was 3.1 where indulgent parents said their child exhibited an average of 3.08 in terms of hyperactivity level.

Where I also recorded such factors as sleeping patterns, age of child, and sex, I found that there were very little differences among parenting styles. From research done prior to the study, I found that eating and sleeping patterns are closely correlated in determining activity levels where my results show no significance. Also, in order to determine if the child's weight is reflecting their activity level I asked for participants to give their child's weight and height in preferably percentiles (if they did not know percentiles they were asked to give their actual weight in pounds and height in inches). After attempts to convert the child's percentiles, these questions

were thrown out due to not enough information to correctly obtain the percentiles for all participants. In infants, to determine a child's percentile you use their age in months, not years. Due to not knowing the exact age in months the data had to be thrown out (meaning a 1 year old can range from 12 months to 23 months in age where percentiles can change drastically from month to month because as an infant they grow so rapidly)

I also had to throw out the questions in regards to the ages participants reported when their child first walked and crawled due to the fact that most participants were authoritative parents causing the earliest walkers/crawlers and the later walkers/crawlers all being of the authoritative parenting style.

When asked the age of the participant a few answers had to be thrown out which could have also skewed the age range due to the fact they answered in the years of their child and not themselves. Also, when participants answered the question in terms of most favorite activity to least favorite activity, some participants listed their child's least favorite activity as riding a bike while most of those participants also said their child was only 1 year of age. Where I cannot say that these children do not know how to ride a bike, I do believe that some participants felt as though they had to select an answer for all. With this, I would suggest changing the wording in a few of my questions to avoid this confusion.

Due to limited time, this research could be better investigated with a time span that could allow for recruitment of more participants. This research did not receive a wide enough range of participants associating with each parenting style to acquire any true results. In future research, the primary investigator should allow more time to gain a wider range of participants and those associating with each parenting style due to the fact that 77% of my participants associated with the authoritative parenting style. Another way to further expand from this project would be to

conduct an observational experiment aside from the questionnaire to allow more accurate information gathered. Observation could eliminate participants who may have lied on the survey about the parenting style they generally practice. I would also suggest future researchers to obtain more resources to get more accurate amounts of activity levels as well as metabolism rates if at all possible.

Overall, this research could be important to understand child development, if revisions were to be made to this original study. Where I did not receive the results desired, this study still provides a base for future research to expand on. I hope to see researchers expand on this study in the future.

References

- Hennessy E., Hughes S.O., Goldberg J.P., Hyatt .F.F, & Economos, C.D., (2010) Parent child interactions and objectively measured child physical activity: a cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*. 7(71)
- Saunders J., Hume C., Timerio A., & Salmon J., (2012). Cross-sectional and longitudinal associations between parenting styles and adolescent girls physical activity. *International Journal of Behavioral Nutrition and Physical Activity*. 9(141)
- Ventura A.K. & Birwch L.L., (2008). Does parenting affect children's eating and weight status? *International Journal of Behavioral Nutrition and Physical Activity*. 5(15).
- Bender D. A. "physical activity level." [A Dictionary of Food and Nutrition](http://www.encyclopedia.com/doc/1O39-physicalactivitylevel.html). 2005. Retrieved April 8, 2013 from Encyclopedia.com: <http://www.encyclopedia.com/doc/1O39-physicalactivitylevel.html>

Figure 1

Which of the following parenting styles would you say you practice? This question allows multiple answers.

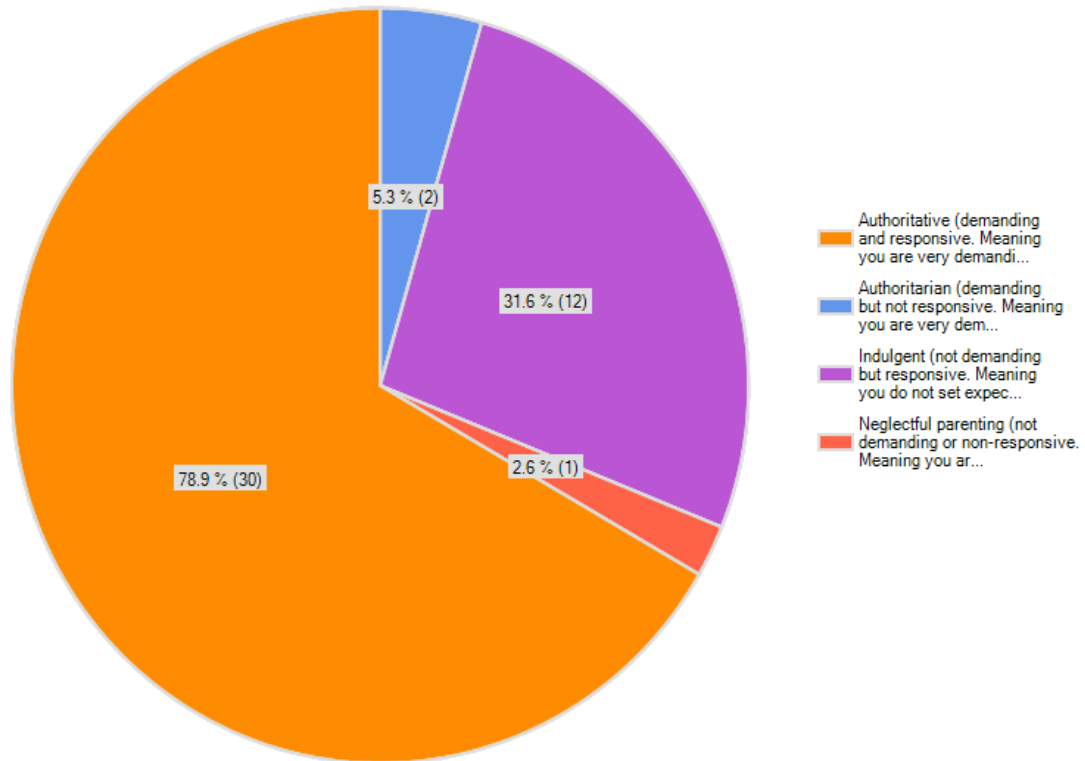


Figure 2

How many naps does your child take a day?

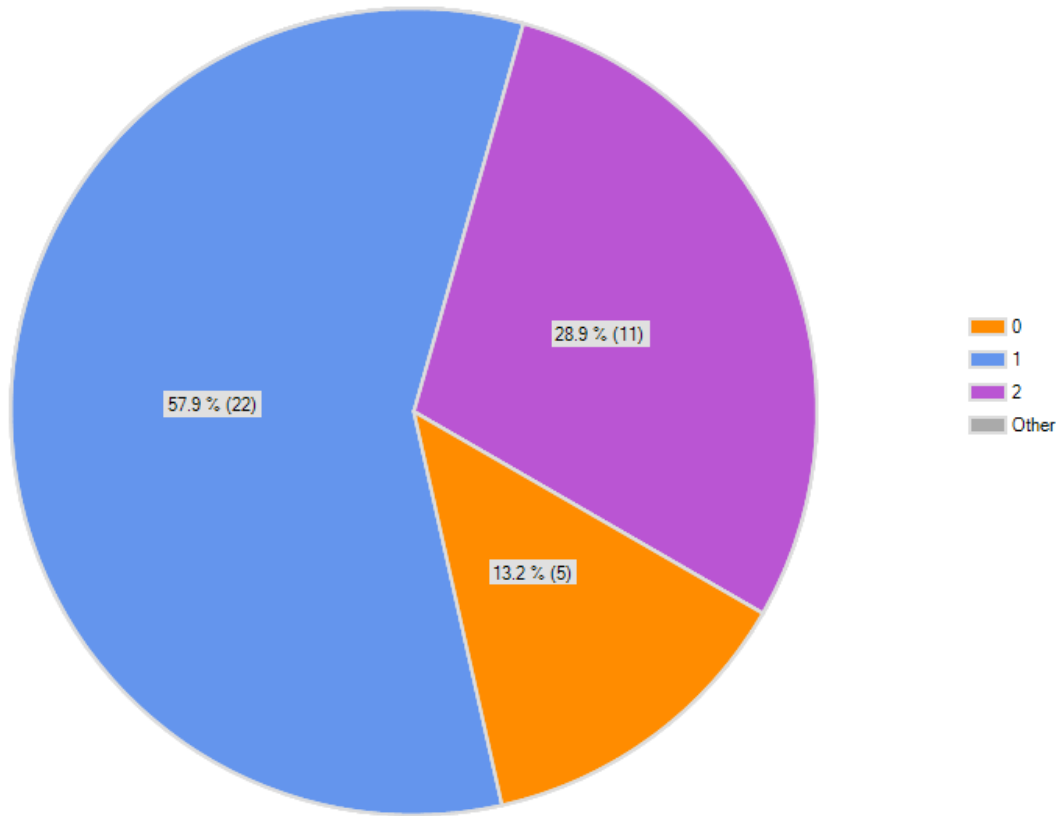


Figure 3

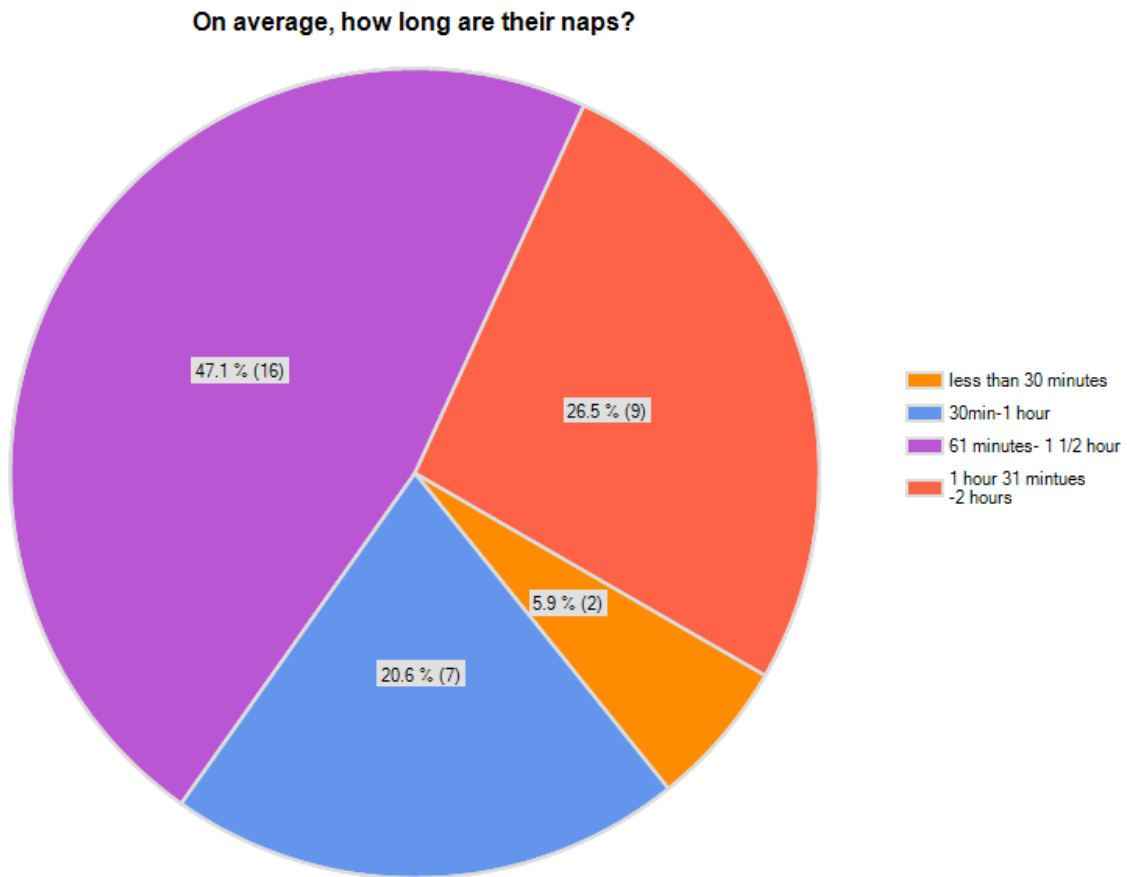


Figure 4

Rate your child from 1 to 5. 1 Being very laid back and 5 being very hyper.

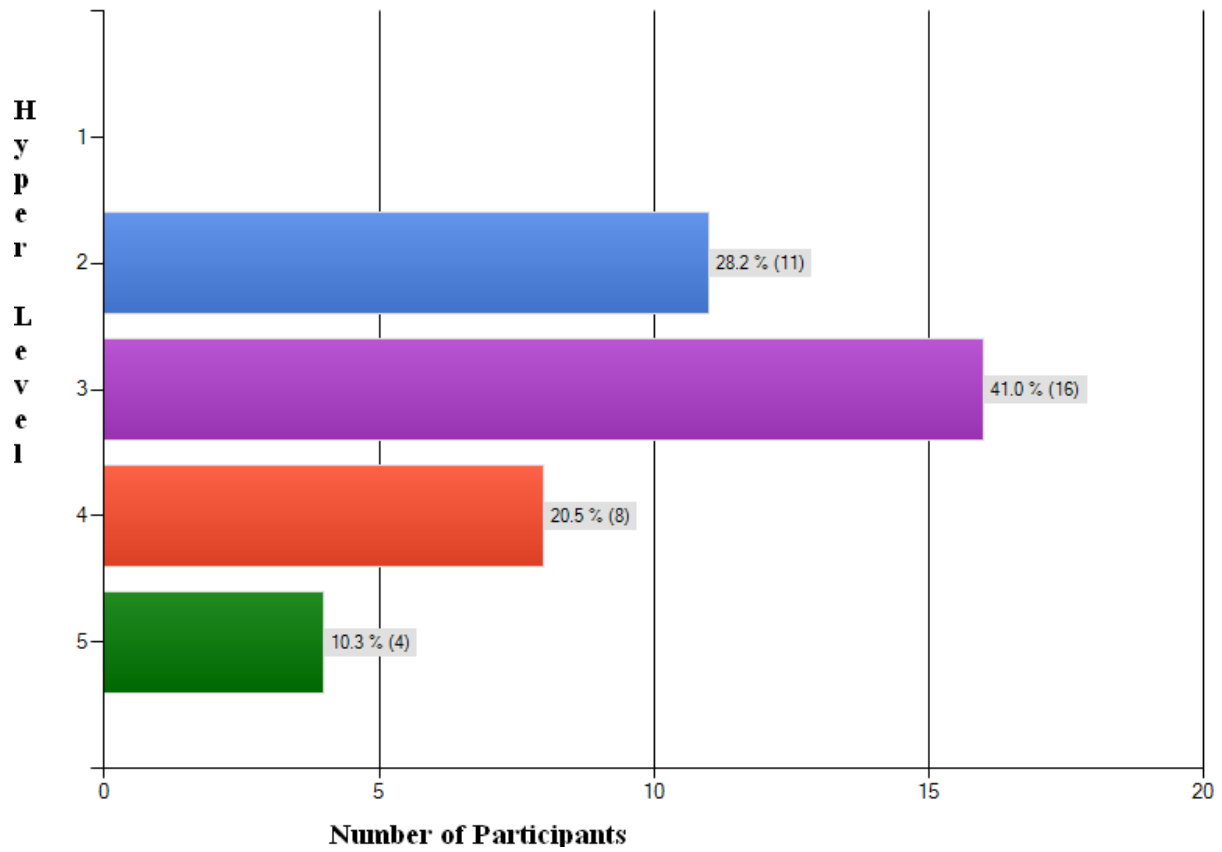


Figure 5

Rate your child from 1 to 5. 1 Being very laid back and 5 being very hyper.

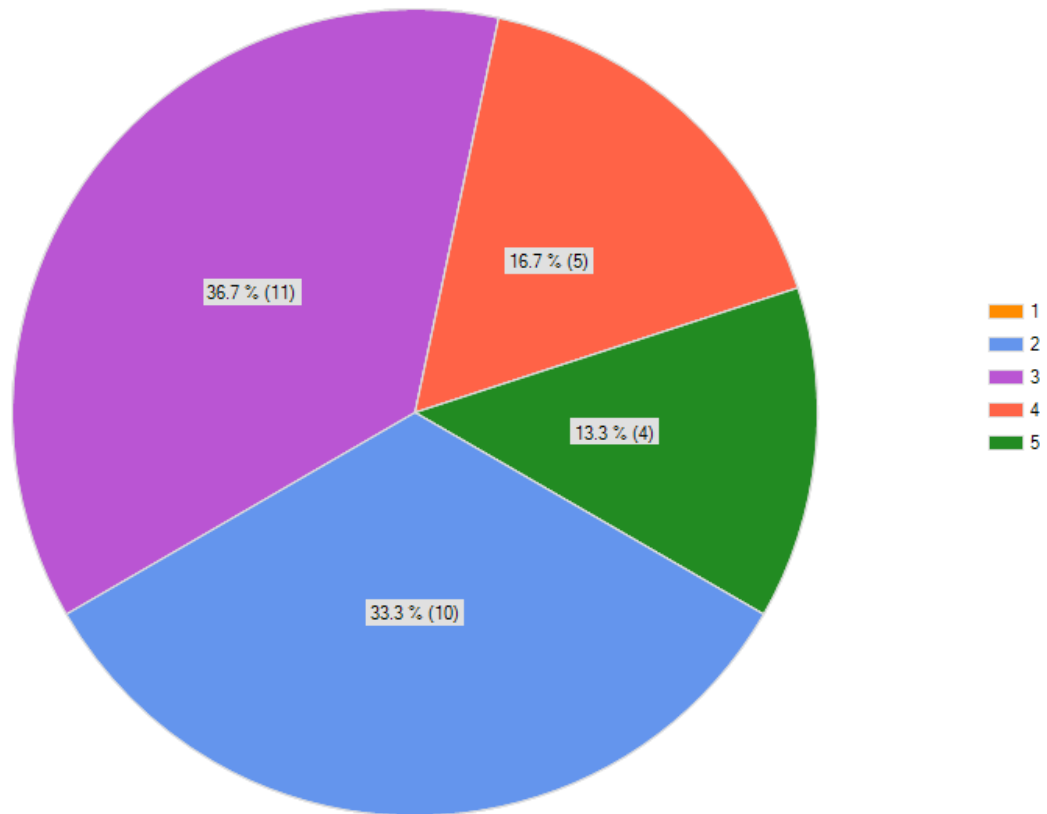


Figure 6

Answer Options	read/look at books	Watch TV/Play	Eat	Sleep	Walk/crawl	Play catch (not full)	Run	Dance	Climb	Ride a Bike
Most favorite	11	3	7	0	1	2	4	5	3	1
2nd favorite	3	4	2	5	6	2	5	5	2	3
3rd favorite	4	10	2	0	3	4	3	3	7	1
4th favorite	3	6	4	1	3	3	5	3	5	3
5th favorite	4	3	3	4	4	3	5	3	1	3
6th favorite	5	0	5	2	7	6	1	4	0	2
7th favorite	3	1	4	4	3	3	3	1	2	3
8th favorite	0	2	1	4	2	3	0	5	5	1
9th favorite	1	4	1	8	2	2	1	3	2	0
10th favorite	0	3	2	7	0	1	0	1	0	5

Appendix A

(Cover Letter)

My name is Jessica Sibley and I am a student at Lindenwood University. I am conducting a survey to analyze and compare the different parenting styles and how each parent records his/her child's activity levels for a class project. I, myself, am a parent and am interested in seeing if there is any relation between the two. This is a 17 question survey that should take approximately 5 to 10 minutes. If you have more than one child in daycare, feel free to take the survey multiple times; once for each child. If you want to take the survey only once, that is completely understandable and acceptable. Then choose one child and answer the questions pertaining to only that child.

The potential risks may be psychological. The results of this study could lead to feelings of guilt, shame, or failure as good parents. It is important to remember that there is no "right" parenting style and that there is no right answer to any questions.

Even if you agree to participate, you may withdraw from the study at any time. If you choose to not participate or stop your participation before the end of the study, you will not be penalized or prejudged in anyway. Also, you may choose to skip any questions in the survey you wish without any penalties.

No information that identifies you personally will be collected; thus your responses are anonymous and fully confidential. Meaning no one, including the primary investigator, will know each participant's individual answers; the IP addresses of respondents will not be collected.

Please feel free to ask the researcher if you have any questions. If you do have questions, comments, or concerns after participating today, you may contact the researcher at 314-853-23469 or the researcher's supervisor Dr. Michiko Nohara-LeClair at 636-949-4371

(Consent statement)

*

1. Based on the information on the previous page, please select the YES button if you consent to take part in this survey as a respondent who is informed of the nature of the study, and the NO button if you do not agree to give consent to taking part in this survey after reading the information about the study on the previous page. Again, please note that you can choose to stop the survey at any time by selecting the X at the top of the screen.

Yes, I give consent to participate in the study

No, I do not give consent to participate in the study

(Survey)

If you have multiple children in daycare, please choose one child and answer pertaining to that child only. You may take the survey multiple times, once for each child.

2. What is your child's age by years? If under 1 year, state how many months.

- 1
- 2
- 3
- 4
- 5

Other (please specify)

3. What is your child's gender?

Female

Male

4. What is your age in years?

5. How many full meals a day does your child eat? If your child only drinks formula, state how many bottles and ounces per bottle.

6. How many snacks a day does your child eat?

- 1
- 2
- 3
- 4
- 5

Other (please specify)

7. What is your child's weight percentile? If you do not know the percentile please just indicate their weight

8. What is your child's height percentile? If you do not know their percentile, please indicate their height.

9. How many hours does your child sleep a night on average?

less than 5

5-8

9-12

more than 12

10. How many naps does your child take a day?

- 0
- 1
- 2
- 3

Other (please specify)

11. On average, how long are their naps?

less than 30 minutes

30min-1 hour

61 minutes- 1 1/2 hour

1 hour 31 minutes -2 hours

Other (please specify)

12. Rate your child from 1 to 5. 1 Being very laid back and 5 being very hyper.

1

2

3

4

5

13. Which of the following parenting styles would you say you practice? This question allows multiple answers.

Authoritative (demanding and responsive. Meaning you are very demanding of your child's expectations but are still very understanding of their feelings. You allow the child to be independent but yet you still set limits and controls of their actions)

Authoritarian (demanding but not responsive. Meaning you are very demanding of what you expect from your child but with little explanation and are less responsive to your child's needs; also known as strict parenting)

Indulgent (not demanding but responsive. Meaning you do not set expectations of your children but you are very involved. In a way cater to your child's needs allowing them to become what some may consider "spoiled")

Neglectful parenting (not demanding or non-responsive. Meaning you are not involved. You do not set expectations nor are you emotionally involved)

Other (please specify)

14. If there is anyone highly involved in your child's life that practices a different parenting style with your child, indicate which one. This question allows multiple answers.

Authoritative

Authoritarian

Indulgent

Neglectful

N/A

Other (please specify)

15. Have you always practiced this parenting style? If no, then state which one you practiced previously.

yes

no,

16. At what age did your child first learn to crawl? If not crawling yet, please put NA**17. At what age did your child first learn to walk (in months) ? If not walking yet, please put NA**

18. Rate each of the activities below from your child's least favorite to most favorite. If your child is not capable of an activity below, simply leave it blank. Note, some may contain multiple activities due to different children's capabilities.

	Watch read/look at books	TV/Play video games	Eat	Sleep	Walk/crawl	full (not sport)/ roll a ball	Run	Dance	Climb	Ride a Bike
--	--------------------------------	---------------------------	-----	-------	------------	---	-----	-------	-------	----------------

Most favorite
2nd favorite
3rd favorite
4th favorite
5th favorite
6th favorite
7th favorite
8th favorite
9th favorite
10th favorite

19. Has your child been diagnosed with hyperactivity/ADHD or other disorders that may influence your responses

yes
No

(Information Letter)

I would like to thank you for completing this important survey I am completing for a course at Lindenwood University. My hypothesis is that those parents who practice the indulgent parenting style will report their children as being more active than those who report practicing any of the other parenting styles. It is very much appreciated that you took the time to contribute to this research. Again, remember that no matter the results of this study, there are many acceptable parenting styles and no answer you submitted is incorrect.

If you would like to see the final report to this study, after May of 2013, the researcher will be posting a new link on the same website pages as well as the same daycares where participants were recruited from that will direct you to the posting of the final report. Again, thank you so much for your time and effort!

Feel free to contact me at any time.

Primary investigator,

Jessica Sibley
314-853-2346
Jls758@lionmail.lindenwood.edu

Supervisor
Dr. Michiko Nohara-LeClair
636-949-4371
Mnohara-leclair@lindenwood.edu

Appendix B

Letter Requesting for Permission to Recruit from Daycare

(Name of daycare)
 (Address of daycare)
 (Date)

Dear _____; Director of _____ Daycare,

My name is Jessica Sibley, and I am a student at Lindenwood University. I am conducting a survey for a class project to see the relationship between parenting styles and how parents report their child activity level.

Participants will visit a website called Survey Monkey to take a 17 question survey on their parenting styles, their children's activity levels, sleeping habits, and eating habits. The survey will take approximately 5 to 10 minutes and will be fully confidential and anonymous.

You will not be required to participate in this study in any way or advertise about this study yourself, but I would greatly appreciate it if you would be willing to allow me to post a flyer to help recruit individuals willing to take part in the survey.

Please sign this form if you agree to grant me permission to post flyers on your premises to recruit participants as well as a flyer in May after the study is done with the location of the final report for those who would like to see the final report. If you have any questions regarding this study, please feel free to contact me using the contact information shown below.

Your signature

Date

Primary Investigators signature

Thank you for your time,

XXX

Supervisor

Dr. Michiko Nohara-LeClair

636-949-4371

Mnohara-leclair@lindenwood.edu

Appendix C

Parents:

**WANT INSIGHT ABOUT
YOUR PARENTING STYLE?**

**THERE IS A SURVEY BEING
CONDUCTED TO DETERMINE IF
PARENTING STYLES HAVE ANY
RELATION TO A CHILD'S ACTIVITY**

LEVEL
Feel free to help with research by
visiting

**[https://www.surveymonkey.com/s/Y
SN386L](https://www.surveymonkey.com/s/Y
SN386L)**

**and taking the survey yourself! Also, feel
free to contact the researcher, Jessica, at
314-853-2346 with any questions!**

Does the Difference between Handwriting and Typing Influence Memory Ability?

Ai Shinohara¹¹

Technology has had a great impact on education today. Computer skills are necessary in order to complete many school assignments, and typing on the computer has become a main writing method for younger generations (Burnhart & Goldinger, 2010). Many college students bring their computers in the classroom, and more and more students have started to take notes by typing on their computer instead of handwriting their notes. The question to this convenient society is whether the new writing method, typing, affects students' memory abilities in a classroom situation. The current study was conducted to determine if handwriting or typing was the better method of writing in order to memorize unfamiliar English words. Twenty-eight students were recruited from the Lindenwood Participant Pool (the LPP) for this study. The participants were asked to complete two sets of conditions; one to remember and type five unfamiliar words (meaning words that you may not encounter very often), to solve the Sudoku puzzle, and then to recall the words which they learned earlier; another condition to write down five different English words on the piece of the paper instead of typing. The paired sample t-test was used to examine the mean score of the test difference between the handwriting and the typing condition. The findings show that there was no significant difference between handwriting and typing for remembering the new words.

The human brain is highly developed compared to other animals, and it allows us to do many complicated tasks such as speaking, writing, thinking and making decisions. However, human memory is limited. Because people cannot remember all information surrounding them, they select what they need to remember and what they have to forget. According to the Atkinson and Schiffrin model, there are three types of memory: sensory memory, short-term memory, and long-term memory (as cited in Scott, 2009). Sensory memory is the first stage of memory storage in which all information is stored for less than one second. People receive new information through their senses, and the information goes into sensory memory, but if people do not pay attention to it, it quickly disappears. However, if people decide to pay attention to particular

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information, the information will be placed into the Short-term memory where the selected information is held and remembered for 15-30 seconds. If people want to hold the information for a long period of time, that is, store the information into the Long-term memory, rehearsal is needed (Atkinson & Schiffrin, as cited in Scott, 2009).

Semantic memory, one type of the Long-term memory, refers to the information people learn and acquire as knowledge (Atkinson & Schiffrin, as cited in Scott, 2009). Thus, information which is learned in the classroom is considered semantic memory if the information enters a learner's Long-term memory. In addition to requiring repetitive activities, such as writing information down again and again, one of the best ways to hold semantic memory in long-term memory is elaborative rehearsal. Elaborative rehearsal is a technique in which people make a connection between the new information and their own knowledge (Atkinson & Schiffrin, as cited in Scott, 2009). For example, when people learn a new word, it is better for them to learn the definition of the word and know an example of how to use the word in a sentence, rather than to remember only the word itself.

The traditional rehearsal method for word recollection is writing it down on a piece of paper or notebook again and again. Today, however, typing on the computer has become a main writing method for younger generations (Burnhart & Goldinger, 2010). Many students, including younger children, have easy access to computer products. Schools also rely on computers to teach students fast typing skills, and this reduces the time in which students are actually involved in handwriting (Burnhart & Goldinger, 2010). The question for this convenience in society then becomes whether the difference in writing methods affects memory ability in a classroom situation.

According to Cunningham and Stanovich (1990), the difference in words produced between handwriting and typing is that handwriting is a type of graphomotorical activity while typing is not. When people write words down by hand, they have to produce shapes of each letter of the word. Although it takes time to write a letter by hand, people who prefer to handwriting access to kinesthetic movements while producing the letters, and their hands remember the shape of the letters. However, typing basically is void of graphomotorical activities as the letters are already present on the keyboard. Thus, when people try to memorize a new word, typing would be more difficult to recall it because people cannot access to their kinesthetic abilities during the rehearsal phase.

Longcamp et al. (2008) found that the brain activities were different when people wrote with their hand and when they typed on the screen. In his experiment, functional magnetic resonance imaging, fMRI, showed that the Broca's area, which is a particular brain area in the left frontal lobe for language production, was more active when the participants wrote down letters on the piece of paper, than when people typed the letters on the a computer. Thus, it could be concluded that the connection between handwriting and the Broca's area might play an important role in word recollection.

The idea of the motor-perceptual interactions also explains why handwriting affects memory ability as well. The motor-perceptual interaction is an idea that the combination of body movement and perceptions are highly efficient at recalling the particular object or a target item (Longcamp, Zerbato-Poudou, & Velay, 2005). Handwriting involves complicated motor-perceptual interaction as people move their hands, wrists, and arms, while perceiving visual stimuli. On the other hand, typing also involves moving people's fingers, but they cannot look at the screen and the keyboard at the same time. Therefore, from this perspective, because typing

does not involve motor-perceptual interaction, handwriting would be better to recall information than typing.

The present experiment was conducted to determine if handwriting or typing is a better method of writing in order to memorize unfamiliar English words. Based on the study of cognitive activities and neural activity in the brain, the hypothesis of this experiment was that people would be able to recall more words accurately when they write down the words than when typing the words.

Method

Participants

The Lindenwood Participant Pool (LPP) was used to obtain the participants for the study. The LPP is considered a convenience sampling technique, and it is an ethical way of recruiting participants at Lindenwood University. Students, who registered for at least one of the classes which were selected by LPP with an agreement with the professors during the spring semester of 2013, voluntarily signed up on the recruiting time sheets on the LPP bulletin board. Twenty-eight undergraduate students at Lindenwood University, 12 men, 16 women (mean age= 19.5), received extra course credits as compensation for their participation in the study.

The breakdown of participants' year of school showed that 12 freshmen, 6 sophomores, 9 juniors, and 2 seniors participated in the study. Eighteen students spoke English as their first language, and other students spoke different languages, including in Spanish and French, as their first languages.

Materials

The basic materials, such as informed consent forms, the debriefing statement, and the extra credit slip were provided to all participants who came in to take the experiment. Ten

English words, which were considered important for those students who plan to pursue graduate-level education, were randomly selected from <http://www.grevocabulary.org/gre-word-list-1.html>. Two sets of word learning packets were created, each with five sheets. One learning work packet was for the typing condition, so that the packet was created in the excel sheets. Each sheet had a word, its definition, and the example of how to use the word in the sentence. There were six blank boxes to ask participants to type the word, definition, the example once, and type only the word three times. Another word learning packet was for the handwriting condition, so that participants were given five word sheets (see Appendix A for an example of word learning packets). Corresponding to the word learning packets, two sets of word tests, word test 1 and 2, were created through a Microsoft PowerPoint slideshow (see Appendix B for examples of word tests). The word definitions and sentence examples appeared on the screen one at a time, and the participants were asked to identify the proper word and spell it out verbally. Their responses were recorded on the answer sheet (see Appendix C). The participant's responses were scored using two different scoring systems. The spelling score was when participants were able to recall spellings of the word correctly and matched the correct definitions of the word. Another score was if the participants remembered the word which matched the definition of the word, but they could not recall the spelling correctly. Both scores were out of 5.

In order to have a 1 min and 30s, interval time between the learning phase and the testing phase, two sets of Sudoku puzzles (from <http://www.sudokukingdom.com/very-easy-sudoku.php>) were given to the participants (see Appendix D). Sudoku is a logic puzzle consisting of a 9x9 grid, subdivided into nine smaller grids. Each smaller grid contains nine cells, and the objective of the puzzle is to fill each cell with an individual digit (from 1-9) so that each column row and smaller grid contain all of the numbers from 1-9.

A demographic survey consisted of five questions to gain the participants' general information (see Appendix E). Those questions on the demographic survey were participants' age, gender, year of college, first language, and if the participants were familiar with any of the words which appeared in the experiment. The participants were informed that they did not have to answer any questions if they did not want to answer.

Also, participants were able to read the instructions for each task through a Microsoft PowerPoint slideshows in addition to explaining the instructions verbally by the experimenter (see Appendix F).

Procedures

Students from LPP voluntarily signed up for the experiment on the LPP bulletin board. There was an experiment description form and the sign-up sheet on the board, so that students were able to read the description and briefly understand the process of the study. The study was conducted at Lindenwood University in one of the psychology labs where there was a computer (Young Hall 105), and the participants were tested individually. Once they arrived at the appointed time, they were asked to read and sign the informed consent form if they agreed to partake in the experiment.

After the participants signed the informed consent form, they were given a word learning packet for handwriting and asked to remember 5 words, the definitions, and the examples of the words for 20 s. After 20s., they were asked to write down each word, definition, and sentence example once and to write down only the word three more times on the work sheet. They were then asked to try to solve a Sudoku puzzle for 1 min and 30s., as an interval period between the learning phase and the testing phase. After the Sudoku task, they were tested to recall the words which they learned earlier in the experiment. When they saw the definition of the word, they

were asked to speak aloud the spelling of the word. They saw the definition of the word on a piece of the paper one at a time. The experimenter wrote down the spellings participants said aloud.

The participants then were asked to remember another 5 words and the definition of the words from the leaning work packet for typing on the computer screen. This time, they were asked to type each word, definition, and sentence example once and type only the word three more times on the computer screen. Then they tried to solve Sudoku puzzle for 1 min and 30s. Three minutes after they tried the Sudoku puzzle, they were tested to recall the words which they learned in the second trial. Once again they saw the definition of the word, and they were asked to speak aloud the spelling of the word. They saw the definitions of the words on the screen one at a time. The experimenter wrote down the spellings that the participants said aloud.

Because it was a within-participant design, the order of the two conditions: handwriting and typing was counterbalanced as well as the 5 words associated with each condition. Thus, 15 participants started with typing task with word learning packet 1 and word test 1, and 13 participants started the handwriting task with word learning packet 2 and word test 2.

After both tasks were completed, the participants were asked to take a demographic survey. At the completion of the session, the participants were told about the purpose of the study, were given the feedback letter, and were given the participant receipt in order to get their course credits through the LPP office.

Results

The research question of this experiment was how writing methods, either handwriting or typing, affected an individual's memory ability. From the last question in the demographic survey in which the participants were asked if they already knew any words before the

experiment or not, 25% of the participants knew a word “zenith” from word test 1, and 54% of them knew a word “exonerate” from word test 2. These two words from test 1 and test 2 were excluded the data analysis to keep the amount of the participants for this study. Thus, the score was ended up out of 4 points for each test. Moreover, to prevent skewed data in the result, people who were able to identify at least one of the words except “zenith” and “exonerate” on the word learning packets before taking the experiment were excluded the data analysis. To compare the mean scores of word tests (spelling accuracy and word retention) between the handwriting condition and the typing condition, the paired sample t-test was used. The mean scores of the spelling accuracy of the handwriting condition and the typing condition were 1.57 (SD= .28), and 1.8 (SD=.25), respectively. The mean scores of the word retention of hand writing and typing were 1.71 (SD=1.27), and 1.90 (SD=1.09), respectively. The results show that there are no significant difference between handwriting and typing, $t(20)=-.631, p>.05$ (spelling accuracy), and $t(20)=-.525, p>.05$ (word retention). They also suggest that there are no score differences between spelling accuracy and word retention.

Discussion

The prediction of the experiment was that handwriting would be better to recall the words than typing, which would be interpreted that handwriting would be easier to access to Long-term Memory than typing. However, the results show that there is no significant score difference between handwriting and typing. The procedures were thoroughly followed the concept of the memory; the elaborative rehearsal was used to maximize the participants’ memory ability. Before the participants started to practice the words, they had 20s., to understand the meaning of the word and how to used the word by reading the example. Even though the elaborative method was used for rehearsal, the mean scores of the word tests of both handwriting and typing were

very low. Thus, it would be said that memory ability for word recalling is not affected by writing methods. However, there are some possible explanations why the results did not support the hypothesis.

One of the biggest problems of this study was that the number of the participants was relatively small. A Total of 28 participants were recruited of this study, and 7 were excluded from data analysis due to having knowledge of at least one of the words on the learning phases. In order to get an accurate result, at least 30 sets of data were needed. Because of the small amount of the data collection, the possibility of getting the Type-II error increased. Thus, using unfamiliar English words was not good idea because some data were discarded and thus, only 21 sets of data were used for the analysis. Moreover, not many people signed up for the study because it took 30 min to complete the experiment due to the within-participant design. Other studies from the LPP were mostly 10 -15 min experiments, so the students might avoid signing up for the longer studies. The within-participant design is more powerful than the between-participant design because it reduces the individual differences of each condition. However, it takes longer to complete the session because the participants have two conditions to complete.

Another possible explanation is that this procedure of the experiment did not reflect the class room situation for college students. Although word retention and spellings of the word are very important for children, understanding the information quickly in the class is more important for college students. Thus, if the participants were college students, the research questions should have been how writing methods, either handwriting or typing in class, influence the understanding of the materials.

In order to gain the participants more effectively and meet the need of the college students, the procedures and materials should be revised for future study. Instead of

remembering words, it would be better to recall the contents of the materials after the participants engage in either typing a short paragraph on the computer screen or writing the passage on a piece of paper. Thus, individual differences in initial knowledge base would not factor in if the passage itself is unfamiliar to the participants. Also, recalling of the content of a passage is more analogous to the classroom setting for college students, so it would be better to use this new idea to examine if writing methods, either writing down on the notebooks or typing on the computer during the lecture, affect their test scores. Although the between-participant design has some problems, such as individual differences, using this design would be better to get more participants from the LPP.

References

- Cunningham, A. E., & Stanovich, K. E. (1990). Early spelling acquisition: Writing beats the computer. *American Psychological Association, 82*(1), 159-162.
- Burnhart, A. S., & Goldinger, S. D. (2010). Interpreting chicken-scratch: Lexical access for handwritten words. *American Psychological Association, 36*(4), 906-923.
- Longcamp, M., Boucard, C. I., Gilhodes, J. C., Anton, J. L., Roth, M., & Naarian, B. (2008). Learning through hand- or typewriting influences visual recognition of new graphic shapes: Behavioral and functional imaging evidence. *Journal of Cognitive Neuroscience, 20*(5), 802-815.
- Longcamp, M., Zerbato-Poudou, M. T., & Velay, J. T. (2005). The influence of writing practice on letter recognition in preschool children: A comparison between handwriting and typing. *Acta Psychologica, 119*(1), 67-79.
- Scott, W.T. (2009). *Leaning and Memory*. New York, Pearson Education Inc.

Appendix A

Word Learning Packet

Word	Lexicon
Definition	A dictionary
Example	I used the lexicon to discover definitions of terms I did not know.
Word	
Definition	
Example	
Practice 1	
Practice 2	
Practice 3	

	A	B
1		
2	Word	Lexicon
3	Definition	A dictionary
4	Example	I used the lexicon to discover definitions of terms I did not know.
5		
6	Word	lexicon
7	Definition	A dictionary
8	Example	I used the lexicon to discover definitions of terms I did not know.
9	Practice 1	lexicon
10	Practice 2	lexicon
11	Practice 3	lexicon

Appendix B

Word Test

You will be now tested to recall on the words which you learned earlier. You will see the definitions and examples of each word on the screen one at a time.

Please try to recall the corresponding word and speak aloud the spelling of the word to the best of your ability.

A point directly overhead in the sky

I noticed that the balloon was _____.

Example

A dictionary

I used the _____ to discover definitions of terms I did not know.

Extended forceful speech

My mother gave me a _____ over how I need to clean my room more often.

example

“L - E - X - I - C - O - N”

Extremely agitated

Feeling _____ does not put me in a good mood.

Appendix C

Answer Sheet

Answer sheet (1)

Subject No: _____

Points (Spells) _____

Points (Word similarity) _____

1. Answer: Z e n i t h

Response:

2. Answer: T i r a d e

Response:

3. Answer: O v e r w r o u g h t

Response:

4. Answer: S a t o r i

Response:

5. Answer: O b d u r a c y

Appendix D

Sudoku Puzzle 1 &2

		4		2	1	6	5	
	9				6	1	7	4
1	6	8	5	4				
8			1		4		6	9
	5	6	7			4		1
4		9		6	2		3	
6	8	1	2				4	7
3				1			9	2
	2		4	7	3	8		

		7	2		9	8		1
		6	4			2	9	5
5	9	2	8		6			
	7	5		3		9		2
9	6			4			1	8
		8	1	9	5		7	
2	5			6			8	
6	8			2	4	7		
7			5		1	6	2	9

Appendix E

Instruction (Writing first)

<p style="text-align: center;">Instruction</p>	<p style="text-align: center;">Learning phase</p> <p>You will be asked to remember 5 English words which are graduate student level and their definitions of the words.</p> <p>You will give 20 seconds to remember each word and its definition. After 20 seconds, you will be asked to write down each word, definition, and the exampe of the word on a piece of paper.</p>
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<p style="text-align: center;">Sudoku</p> <p>Sudoku is a logic puzzle consisting of a 9x9 grid, subdivided into 9 smaller grids. Each smaller grid contains 9 cells, and the objective of the puzzle is to fill each cell with an individual digit (from 1-9) so that each column row and smaller grid contain all of the numbers from 1-9.</p>	<p style="text-align: center;">Learning phase</p> <p>You will be asked to remember 5 English words which are graduate student level and their definitions of the words.</p> <p>You will give 20 seconds to remember each word and its definition. After 20 seconds, you will be asked to type each word, definition and example of the word on the screen.</p>
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