The Effects of Social Media and Self-Esteem on the Fear of Missing Out (FoMO) and

Delinquent Behavior

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Introduction

Social media and self-esteem are two highly researched topics that continuously have a daily impact on college students' behaviors. For example, students communicate with one another about upcoming events, homework assignments, and the latest news on such media platforms as Facebook messenger, GroupMe, and Snapchat. Self-esteem, too, plays a key role in the college student's experiences, influencing both positive and negative personal outlooks– and subsequent resulting behaviors.

The growing interest in the topic of the Fear of Missing Out (FoMO) has loosely been credited to society's mounting exploitation of social media. It is defined as a sociological concept pertaining to the social elements of a person's feelings of missing out in any particular activity or involvement with other people (Hetz, Dawson, & Cullen, 2015; Vera, 2016). This also includes the feeling associated with wanting something, such as a newly released piece of technology (e.g. iPhone 7), that someone else possesses or displays (Przybylski, Murayama, DeHaan, & Gladwell, 2013). For example, feelings of missing out may be present in the following situations: when a person's friend group is hanging out and said person cannot be there, when a person utilizes an excess amount of time on social media to keep tabs on their peers, or when a person believes their experiences are not as rewarding as someone else's. This overall emotion of feeling left out can impact any person at any given moment. However, college students may be particularly susceptible of FoMO because they are presumed to be easily influenced by their peers.

College students, based on their ages, can also be susceptible to delinquent behaviors. Delinquent behaviors are typically attributed to juveniles, as a delinquent is an adolescent charged with a crime, often status offenses. However, college students are readily able to participate in one of the most common status offenses: drinking underage. As so, linking this behavior with numerous other deviant behaviors that can occur in a college setting, delinquency in this paper will be referenced similarly as deviancy would be. These deviant behaviors may be more or less common on certain college campuses over others, but it is important to examine possible influences to help combat the potential dangers of such behavior.

Overall, it is beneficial to look at analyses on the effects social media and self-esteem may have on the idea of FoMO and of participation of delinquent behaviors. Social media use continues to grow and evolve– and its use will never go away. Knowing the ramifications of social media use on one's self-esteem's ability to influence feelings and behaviors can better address what areas should be targeted to improve one's sense of well-being.

Literature Review

Social media use continues to increase on a yearly basis, escalating from just 7% of the adult population using social sites in 2005 to 65% of adult users in 2015 (Perrin, 2015). Not only does the average user utilize popular websites, such as Facebook and Instagram, to stay connected with friends and strangers alike, but businesses have elected to enhance their marketing strategies by force of the Internet (Yazdanparast, Joseph, & Muniz, 2016). This can be seen through such business networking sites as LinkedIn (FrogDog, 2012). There have been a number of studies examining the impact social media use has across various subjects, including academic performance and motivation, government support, and the consumer market (Alahmar, 2016; Alt, 2015; Mohd Hisham Mohd, Troshani, & Davidson, 2016; Hajli, 2014).

In relation to Fear of Missing Out (FoMO), research proposes that these feelings of missing out on events or opportunities that are derived from social media exploitations can lead to behavioral or time management changes (Abel, Buff, & Burr, 2016). Additional research suggests that Facebook plays the greatest attributing social media factor, with Instagram, Twitter, and Snapchat all having significant contributions as well, to a FoMO behavior (Hetz, Dawson, & Cullen, 2015). All four of the listed social media sites allow users to update their friends and followers on any particular activity, thought, or experience at any given moment by the click of a button. This increased technology thereby makes it easier for people to unconsciously create a ping of desire– or that sense of feeling of missing out– for the viewers to experience either that event or sentiment. Unfortunately, such jealousy and envy are common feelings to have when viewing other people's social media posts. Some people have even admitted one of their main intentions in their posts is to induce jealousy among their friends, peers, and followers (Hetz, Dawson, & Cullen, 2015). This could result from a person's efforts to make themselves feel better about their own situation and life by attempting to push feelings of FoMO unto others who may not have the same opportunities.

According to Pines and Aronson's research (1983), a primary indicator for jealousy is a feeling of exclusion– a familiar feeling for those with low self-esteem. The concept of self-esteem is therefore often associated with social media use. One study conducted by Woods and Scott (2016) found support to associate social media use with not only low self-esteem in teenagers and young adults, but also depression, anxiety, and low sleep quality. The study goes on to discuss that one of the key influential factors was an emotional investment to participant social media use, a common theme found in those with FoMO with their desire to stay connected to the world around them (Woods & Scott, 2016; Hetz, Dawson, & Cullen, 2015). Another study

observed the number of likes a person received on their Facebook profile picture while examining levels of self-esteem, with results suggesting a link with a higher number of likes associating with higher levels of self-esteem (Burrow & Rainone, 2016). This suggests that people attach a part of their self-worth to their social media presence and popularity. A final self-esteem research study compared self-esteem levels to social comparison– which is when a person compares themselves to others, similar to how those with FoMO compare their lives to others in whatever aspect they think they may be missing (e.g. material possessions, experiences, etc.)– and determined that those participants viewing upward comparison profiles (those with high amounts of positive information) tended to have lower levels of self-esteem than those in other conditions (Vogel, Rose, Roberts, & Eckles, 2014). These participants in Vogel, Rose, Roberts, and Eckles' study (2014) would compare their own accomplishments and biography to a fictitious profile's high appeal and decorated accomplishments, with most reporting feelings of either envy or disappointment in themselves as indicators for lower self-esteem levels. This illustrates the notion that people naturally compare themselves to others and that low self-esteem can effect and emit such negative feelings toward oneself or another

Low self-esteem has often been correlated to delinquent behavior as well, especially in adolescents and young adults (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). People of low self-worth may not believe they have any sort of support system or even a reason to abide by the rules of society, not caring what they do because they do not see value in their actions. For example, Trzesniewski et al. (2006) linked low self-esteem to a predisposition for criminal activity in adulthood, along with poor health and financial issues. Some of these individuals had succumbed to their varied struggles and had simply given up on themselves. Boduszek, Adamson, Shevlin, Mallett, and Hyland (2013) found similar results while looking at a

population of recidivistic prisoners on factors of their behavior, determining many of the inmates had extremely low levels of self-esteem. They accepted themselves as criminals and therefore saw themselves as how much of society views hardened delinquents, thereby not caring what happens to them. However, delinquency is not limited to severe criminal behaviors that result in prison time or a lost sense of identity and self-worth. Delinquency and deviancy includes such acts as drinking underage, skipping classes, and speeding in a car. College students are extremely susceptible to the delinquent atmosphere, especially with the readiness of alcohol and drugs on many campuses, evoking dangerous temptations (Presley, Meilman, & Leichliter, 2002). Unfortunately, peer influence can potentially sway a person with low self-esteem to participate in activities that they may not necessarily want to do.

Even social media utilization has been shown to influence various types of delinquency. In one meta-analysis, Patton et al. (2014) examined the relationship between social media use and cyberbullying, which often were precursors to future violent criminal behaviors. Additionally, social media use can be linked to criminal activity within the compounds of the web, such as through the organization, discussion, or facilitation of a person or persons' delinquency online (e.g. gangs) (Hoffmeister, 2014). On lesser scales, social media is often utilized on college campuses to spread the word about upcoming or ongoing parties– often a harbor for delinquent behavior. Examples of such behavior include drinking underage, driving under the influence of drugs or alcohol, engaging in devious, sexual behavior, and vandalizing property. Through the use of social media, opportunities can be provided to entice delinquent behaviors.

Not only can social media play a contributing factor to delinquency, but the Fear of Missing Out could also relate to such behavior. Riordan, Flett, Hunter, Scarf, and Conner (2015)

examined FoMO with alcohol use amongst college students, discovering an association between levels of FoMO with higher alcohol consumption rates. The deviant behavior scale created by Sanches, Gouveia-Pereira, Maroco, Gomes, and Roncon (2016) could be altered to provide further testing of this theory. The scale is separated into mild and serious offenses, which allows for the opportunity to categorize delinquency and determine if a correlation exists. Many adolescents, for example, will engage in such deviant behavior as smoking, drinking, and using drugs to fulfill a desire to be accepted by their peers, especially when those peers are the root of the exposure (Onica-Chipea, Săveanu, & Buhaş, 2014). By the same token, they may have that same desire to be in the know and up to date on what is going on with their friends or perceived in-group. For some, deviance is worth the status gained by its association, especially if it helps them stay connected. For example, Gupta, Burns, and Boyd (2016) found significance with the risky behavior of texting and driving to a desire to appease to their peers, meaning that those with friends that engage in that behavior are also likely to text and drive. In fact, 45% of the college students surveyed admitted to texting and driving within the last month, with the majority of that percentage admitting their peers text and drive as well (Gupta, Burns, & Boyd, 2016). This example illustrates how even subtle peer pressure can occur without conscious awareness of the particular correlation.

Previous research has indicated certain characteristics may be correlated to the Fear of Missing Out. For example, one research study suggests that men actually experience higher levels of FoMO in comparison to women (Vaughn, 2012). Statements that men in one study scored higher levels on include "When I see that some of my friends or peers are doing something and I'm not [38% vs. 26%]," "When I see that my friends or peers are buying something that I'm not [26% vs. 13%]," and "When I see that my friends or peers find out about

something before I do [31% vs. 20%]" (Vaughn, 2012). The wording of the questions elicits a competitive, bitterness feeling more often felt by male participants, as if they are not good enough because they were not first to experience the new gadget or hear about the gossip. This would also suggest a higher desire for material possessions over women. On the contrary, another study suggests that there are no significant differences between gender and FoMO (Abel, Buff, & Burr, 2016).

Besides gender, GPA and class year have been linked to levels of FoMO. Prior research suggests significant findings involving a student's GPA and their feelings of missing out (Abel, Buff, & Burr, 2016). Those with higher grade point averages had a tendency to have higher scores on the FoMO scale utilized by Abel, Buff, and Burr (2016). An explanation for this relates to the idea that those with higher grade point averages may prioritize differently, such as perhaps placing a greater emphasis on studying rather than hanging out with their friends. Additionally, they discovered freshmen to have the lowest levels of FoMO (2016). Conceivably this could be explained by colleges' attempt to provide excess programming tailored to the freshmen class to seemingly instill a more connected atmosphere and integrate students into a life away from home (Gearon, 2014). As the undergraduate years pass, colleges typically have less upperclassmen-oriented bonding activities. Many students also begin to spend much of their time away from their friends, such as with internships or other duties preparing for their professional fields. As a result, looming graduation and separation from college friends can also elicit feelings of missing out.

The purpose of this study was to determine if there is a relationship between social media use and self-esteem with both feelings of a fear of missing out and of delinquent behavior. An additional purpose was to determine whether certain characteristics, such as GPA, are found in

those with high levels of FoMO, as well as to determine if a correlation between high levels of FoMO and delinquent behavior exists. Participants completed a survey designed to measure their social media utilization (e.g. "How much time do you estimate that you spend using social media per week?"), level of self-esteem (e.g. "I feel that I am a person of worth, at least on an equal plane with others."), their level of FoMO (e.g. "I fear others have more rewarding experiences than me."), and their intensity of delinquent behavior, both mild and serious (e.g. "During the last month, have you ever drank alcohol under the age of 21? [mild]" and "During the last month, have you driven under the influence of any alcohol or other illegal substances? [serious]"). Also included in the survey were demographic questions to be used as independent or grouping variables.

Based on previous research of social media use relating to lower levels of self-esteem (Woods & Scott, 2016; Burrow & Rainone, 2016; Vogel, Rose, Roberts, & Eckles, 2014), increased feelings relating to the Fear of Missing Out (Abel, Buff, & Burr, 2016), and the influence of delinquency (Patton, 2014), it was hypothesized that those with high social media utilization will continue to have lower levels of self-esteem, as well as high levels of Fear of Missing Out and higher levels of delinquent behavior compared with those with lower rates of social media use. It was hypothesized that a correlation between levels of FoMO and delinquent behavior exist as well based on previous knowledge (Riordan, Flett, Hunter, Scarf, and Conner, 2015). It was also hypothesized that males, upperclassman, those with lower GPA's, and those with a greater number of college activities will have higher levels of FoMO (Abel, Buff, & Burr, 2016).

Method

Participants

The current study was conducted using a sample of undergraduate students (n= 252) from 13 general education courses at a small, private, Methodist college in the Southeast. Table 1 shows the demographic overview of the sample. Based on participant responses to demographic questions, the students came from the following ethnic groups: 85.7% Caucasian, 4.8% African-American, 6.3% Hispanic/Latino, 1.6% Asian, .4% Native American/ American Indian, and 1.2% "Other." About 43.3% of these students who took the survey were first year students, followed by sophomores (20.6%), seniors (18.7%), and juniors (17.5%). The average age of student participants was 19.49 years old, with 18 as a low and 38 as a high. The participant pool was 72.2% female and 27.0% male. Of the participants, 36.1% self-claimed to spend less than 7 hours per week on social media, 52.7% spend between 8 and 21 hours per week, and 11.1% spend more than 22 hours per week on average. With regards to self-esteem, low self-esteem students was comprised of .4% of the group, normal consisted of 18.3%, and 81.3% of participants demonstrated high levels of self-esteem. As for categorizing FoMO scores, the following percentages resulted: No FoMO Likely (8.7%), At Risk for FoMO (51.2%), Medium FoMO (25.4%), and Severe FoMO (14.7%). Finally, only 7.9% of the participants did not commit some type of mild delinquent behavior in the previous month, with the average number of mild behaviors committed being 2.49 (high of 10 out of a possible 11). On the contrary, 58.7% of the same participants did not commit a type of serious delinquent behavior (as classified by this survey) in the previous month, with the average number of serious behaviors committed being .67 (high of 8 out of a possible 11). The average total of delinquent behaviors committed by participants in the previous month was 3.15 (low of 0, high of 17).

Table 1: Demographic Variables of the Effects of Social Media and Self-Esteem on the Fear of Missing Out (FoMO) and Delinquent Behavior

	N	**%**	**Mean**
Gender			
Male	68	27.0	
Female	182	72.2	
Identify			
White	216	85.7	
Non-White	33	13.1	
Age			19.49
Year in School			
Freshman	109	43.3	
Sophomore	52	20.6	
Junior	44	17.5	
Senior	47	18.7	
Social Media Accounts			5.54
Self-Esteem Score (Out of 40)			30.70
Low	1	.4	
Normal	46	18.3	
High	205	81.3	
FoMO Score (Out of 50)			22.44
No FoMO Likely	22	8.7	3.15
At Risk for FoMO	129	51.2	
Medium FoMO	64	25.4	
Severe FoMO	37	14.7	
Delinquent Behaviors (Out of 22)			
Total	**252**		

Materials

Informed Consent Form. The informed consent form for this experiment is shown in Appendix A. During the study, consent forms were collected separately from the surveys to maintain anonymity. Participation was voluntary and was explicitly noted that it could be terminated at any point in time by the participant. The obtained information will be kept for 5 years and will be shredded at that time. However, certain people may need to see the study

records (including IRB officials). By law, anyone who looks at the data records must keep them completely confidential.

Survey. The survey consists of four different sections, comprising of 56 total questions as shown in Appendix B.

The demographic section has 14 independent questions, including gender, race, age, year in school, GPA, number of clubs and organizations, and social media use. Gender used the coding scheme of Male = 0, Female =1, and Prefer not to answer = 9. Race was coded as Caucasian = 0, African American = 1, Hispanic = 2, Asian = 3, Native American/ American Indian = 4, Other = 5 and is partially open ended, and Prefer not to answer = 9. Age was coded as continuous. Year in school was coded as Freshman = 0, Sophomore = 1, Junior = 2, and Senior = 3. GPA was coded similarly, with 2.5 and below = 0, 2.5-2.99 = 1, 3-3.49 = 2, 3.5-3.99 = 3, 4+ = 4, and Prefer not to answer = 9. Students were also asked to report their campus involvement, coded as (0-1) = 0, (2-3) = 1, (4+) = 2 and Prefer not to answer/blank = 9. The social media use questions were coded similarly.

The second section examines the level of self-esteem by the participant. The Rosenberg's 10 question self-esteem scale, developed in 1965, is utilized as the measurement in Questions 15-24 (W.W. Norton & Company, 2016). Scores are distributed in the following manner: "Strongly Agree" 4 points, "Agree" 3 points, "Disagree" 2 points, and "Strongly Disagree" 1 point. Questions 15, 16, 18, 20, and 21 are positively valenced statements (e.g. "On the whole, I am satisfied with myself."). Questions 17, 19, 22, 23, and 24 are negatively valenced statements (e.g. "All in all, I am inclined to feel that I am a failure."), and therefore are reversed scored. Higher scores are an indication of higher self-esteem. Scores from 15-25 are considered normal, with

scores below 15 classified as low. High self-esteem scores are categorized beginning with 26 and up to 40.This has been a consistent, reliable, and valid method of measurement of self-esteem.

The third section utilizes the 10 question fear of missing out scale, which is on a 5 point Likert-scale (Przybylski, Murayama, DeHaan, & Gladwell, 2013). Example statements include "I fear others have more rewarding experiences than me." and "It bothers me when I miss an opportunity to meet up with friends." The 5 point Likert-scale fear of missing out scale was coded as Not at all true of me = 1, Slightly true of me = 2, Moderately true of me = 3, Very true of me = 4, and Extremely true of me = 5. The measurement can be utilized in two different ways. In the first, it is the average taken from all ten questions. Higher averages out of 5 indicate higher levels of FoMO. The measurement can also be examined by sums with the following code: 0 = "No FoMO likely (0-14);" 1 = "At risk for FoMO (15-22);" 2 = "Medium FoMO (23-29);" and 3 = "Severe FoMO (30+)."

The final section includes 22 questions relating to the participant's delinquent behavior in the past month, similarly based on the Deviant Behavior Variety Scale created by Sanches, Gouveia-Pereira, Maroco, Gomes, and Roncon (2016). Eleven of these twenty-two questions relate to mild delinquent behaviors (e.g. drinking under the age of 21, smoking marijuana) and the other eleven question more serious behaviors (e.g. driving under the influence of drugs or alcohol, using cocaine, heroin, or methamphetamines). Scores were dichotomous, coded as 0 for "Yes," 1 for "No," and 9 for "Prefer not to answer." Overall prevalence rates will be examined by this. Additionally, scores will be separately added in both the "mild delinquent behaviors" and the "serious delinquent behavior" categories, as labeled in Appendix B, for analysis.

Surveys were randomly assigned a number for classification purposes, which, in no way, is tied to their identity.

Procedure

This study was designed to test the significance of the relationship between levels of self-esteem and social media use with both a fear of missing out (FoMO) in peer activities and of delinquent behavior. The measurements of certain characteristics, such as GPA, were also ascertained to relate to levels of FoMO. Additionally, a final purpose was to examine if higher levels of FoMO could be linked to delinquent behavior.

Informed consents and surveys were given to 13 classes at a private college in the Southeast among general education courses. Participants were given the following instructions:

"I am asking you to participate in a survey on an examination of college students' attitudes and experiences relating to your own social experiences during your college career. The survey is anonymous and I will not be able to determine your individual answers based off your participation or lack thereof. Participation is voluntary; declining to participate will not have a negative effect on your grade in class. You may skip any question or stop taking the survey at any time. Please read over the informed consent form. Raise your hand after signing and I will be around to collect it before we get started."

After all of the informed consents were collected, the surveys were distributed. The study involves 2 focal independent variables (social media use; self-esteem) and 2 focal dependent variables (fear of missing out; delinquent behavior). For the purpose of this study, the questionnaire was divided into four parts as previously discussed: demographics, self-esteem, fear of missing out, and delinquent behavior sections. Upon completion, surveys were collected and placed in a folder until final analysis.
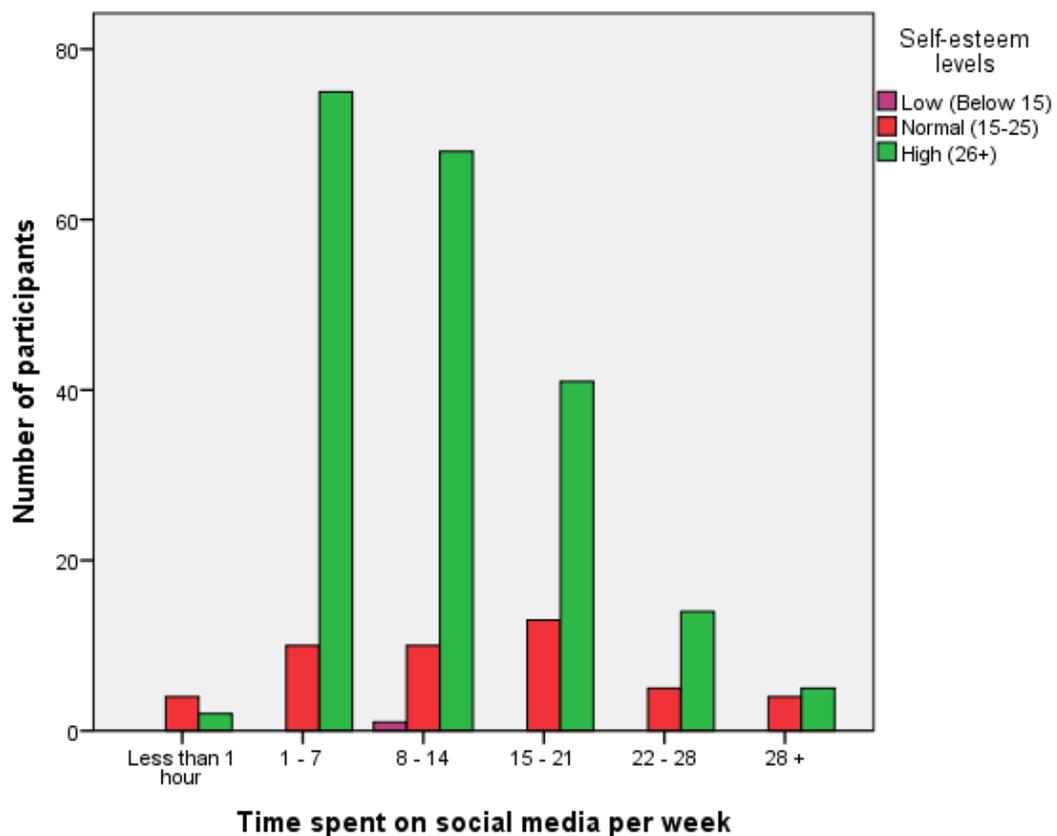
Results

The data from 252 surveys were analyzed by a series of tests, including Chi-square, correlation, independent samples t-tests, multiple regressions, and one-way ANOVAs in order to determine significance amongst a combination of comparisons between social media, self-esteem, FoMO, and delinquent behaviors between a number of factors, including gender, year in school, GPA, and number of clubs and organizations.

Several Chi-square tests were conducted to determine if there was a significant relationship between weekly social media use (less than 1 hour, 1-7, 8-14, 15-21, 22-28, and 28+) and either self-esteem (low, normal, and high) or fear of missing out (No FoMO likely, At risk for FoMO, Medium FoMO, and Severe FoMO).
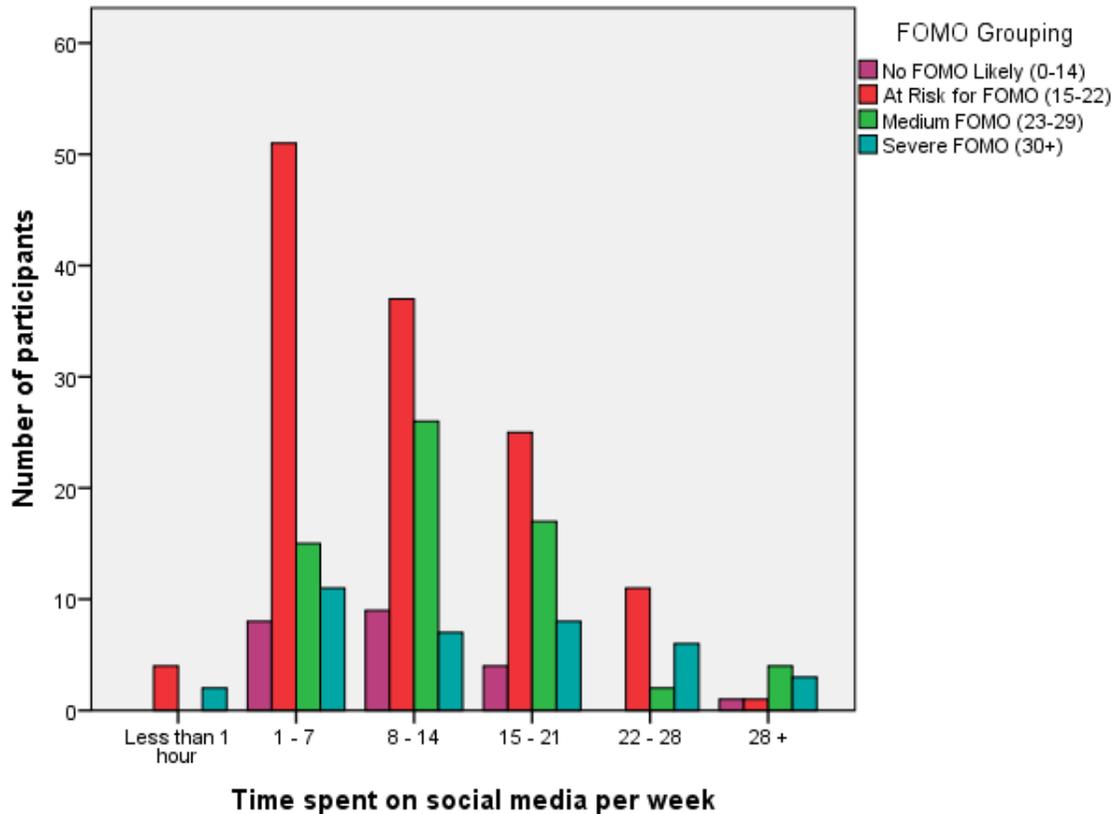
There is a statistical significance between people with low, normal, and high self-esteem in their weekly social media use, $x^2(10, 252) = 21.752$, $p < .05$. Figure 1 depicts the distribution of time spent on social media per week and self-esteem levels.

Figure 1:Number of participants as a function of time spent on social media per week and self-esteem levels

There is also a statistical significance between people's FoMO scores and their weekly social media use, $x^2(15, 252) = 26.407$, $p < .05$. Figure 2 depicts the distribution of time spent on social media per week and FoMO levels.

Figure 2: Number of participants as a function of time spent on social media per week and FoMO levels
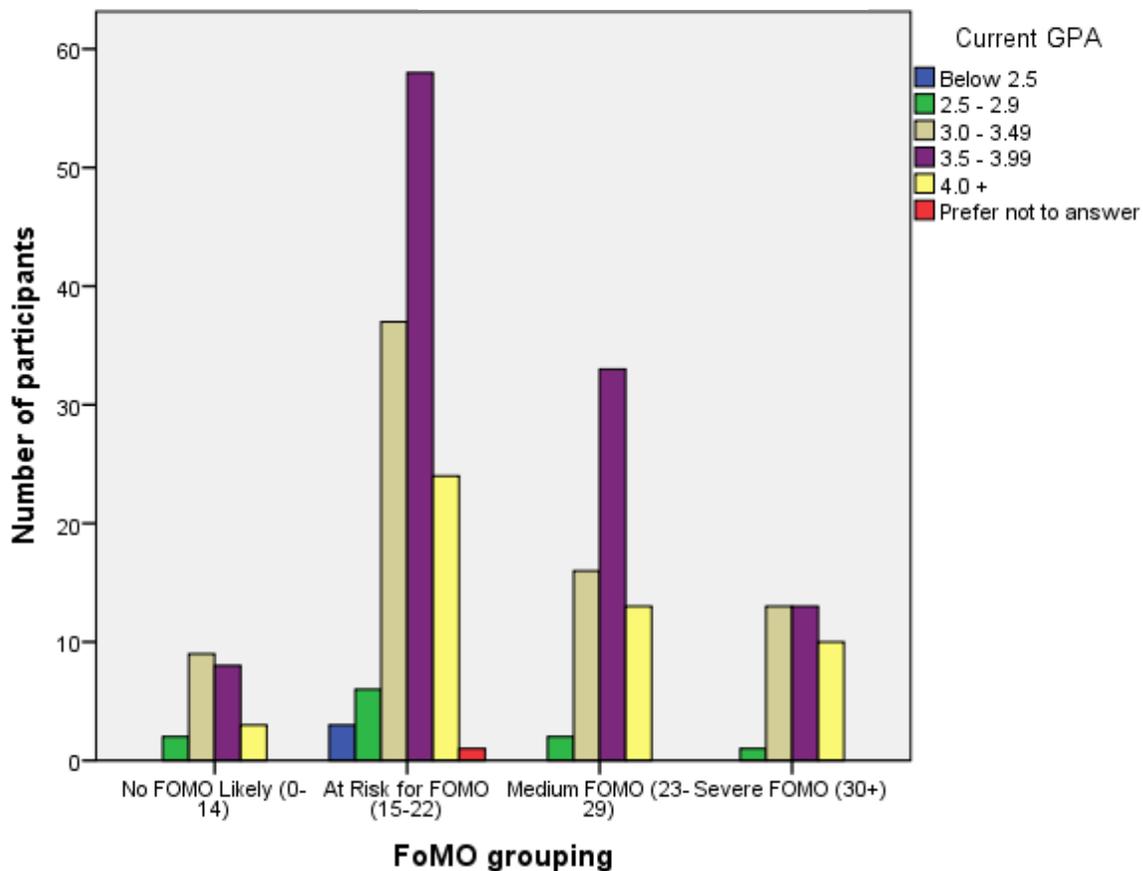

Multiple independent samples t-tests were computed to determine if there was a significant relationship between gender as a grouping variable (males, females) and either self-esteem scores or fear of missing out scores as the dependent measures. There was insufficient evidence to conclude that gender was related to self-esteem scores; however there was sufficient evidence to suggest an approaching relation, $t(248) = 1.92$, $p = .056$. Male participants on average had higher self-esteem scores ($M = 31.87$, $SD = 5.77$) in comparison to their female counterparts ($M = 30.35$, $SD = 5.48$). There was sufficient evidence to conclude that gender was

related to fear of missing out levels, $t(248) = -2.12$, $p < .05$. Male participants on average had lower fear of missing out scores ($M = 20.94$, $SD = 6.81$) in comparison to their female counterparts ($M = 23.03$, $SD = 6.96$).

Several Chi-square tests were produced to determine if there was a significant relationship between year in school (freshman, sophomore, junior, senior) and either self-esteem (low, normal, high) or feelings of missing out (No FoMO likely, At risk for FoMO, Medium FoMO, and Severe FoMO). There was insufficient evidence to suggest a statistical significance between year in school and self-esteem, x^2 (6, 252) = 7.654, $p = .265$. Additionally, a Pearson product-moment correlation was run to further examine the relationship between age and self-esteem scores, which was not significant, ($r = .086$, $n = 252$, $p = .175$). There was insufficient evidence to suggest a statistical significance between year in school and FoMO, x^2 (9, 252) = 5.257, $p = .811$. However, a Pearson product-moment correlation was run to determine the relationship between age and FoMO scores. There was a weak, negative correlation between age and FoMO scores, which was statistically significant, ($r = -.158$, $n = 252$, $p = .012$).

Additional Chi-square tests were run to determine if there was a significant relationship between GPA (below 2.5, 2.5 to 2.9, 3.0 to 3.49, 3.5 to 3.99, and 4.0 +) and either self-esteem (low, normal, high) or feelings of missing out (No FoMO likely, At risk for FoMO, Medium FoMO, and Severe FoMO). There was insufficient evidence to suggest a statistical significance between GPA and self-esteem, x^2 (10, 252) = 3.093, p = .979. There was also insufficient evidence to suggest a statistical significance between GPA and levels of FoMO, x^2 (15, 252) = 10.518, p = .786. Figure 3 depicts number of participants as a function of FoMO grouping and current GPA.

Figure 3 : Number of participants as a function of FoMO grouping and current GPA

Several Pearson product-moment correlation were conducted to determine the relationship between number of clubs and organizations and either self-esteem or FoMO scores. Number of clubs and organizations and self-esteem scores do not have a statistically significant linear relationship ($p = .279$). However, number of clubs and organizations and FoMO scores do have a statistically significant relationship ($p < .01$). There was a weak, positive correlation, ($r = .208$, $n = 252$, $p = .001$).

A number of multiple regression models were run to predict self-esteem scores, fear of missing out scores, and delinquent behaviors. Table 2 displays the results of a multiple regression model that was run to predict self-esteem scores from number of clubs and organizations, age, and gender. These variables statistically significantly predicted self-esteem scores, $F(3, 246) = 2.849$, $p < .05$, $R^2 = .034$. Age added statistical significance to the prediction, $p < .05$.

Table 2: Effects of Demographic Variables on Self-Esteem Scores

Independent Variable	b	β	SE
Age	.493	.128*	.246
Gender	-1.162	-.093	.804
# of clubs/organizations	-.247	-.067	.236
Constant	22.518		4.888
N			249
F			2.849*
Nagelkerke R²			.034

Note: *p < .05 **p <.01

Table 3 portrays the results of another multiple regression model, which was run to predict FoMO scores from time spent on social media per week, age, total sum of delinquent behaviors, and self-esteem scores, $F(4, 247) = 12.149$, $p < .001$, $R^2 = .164$. Both age ($p < .05$) and self-esteem scores ($p < .001$) added statistical significance to the prediction.

Table 3: Effects of Demographic Variables on FoMO Scores

Independent Variable	b	β	SE
Time spent on social media per week	.628	.101	.365
Age	-.469	-.125*	.220
Total sum of delinquent behaviors	.118	.042	.167
Self-esteem scores	-.424	-.341**	.073
Constant	42.916		4.842
N			251
F			12.149**
Nagelkerke R²			.164

Note: *p < .05 **p <.01

A third multiple regression model, depicted in Table 4, was run to predict total delinquent behaviors from number of social media accounts, gender, age, and number of clubs and organizations, $F(4, 245) = 4.929$, $p < .01$, $R^2 = .074$. Number of social media accounts ($p < .05$), gender ($p < .01$), and number of clubs and organizations ($p < .05$) all added statistical significance to the prediction.

Table 4: Effects of Demographic Variables on Delinquent Behaviors

Independent Variable	b	β	SE
Number of social media accounts	.257	.157*	.102
Gender	-.944	-.172**	.345
Age	.098	.058	.106
Number of clubs and organizations	-.204	-.126*	.102
Constant	.933		2.198
N			249
F			4.929**
Nagelkerke R²			.074

Note: *p < .05 **p <.01

Several Pearson product-moment correlations were computed to determine the relationship between self-esteem scores, FoMO scores, and total delinquent behaviors. There was a weak, negative correlation between self-esteem and FoMO scores, which was statistically significant, ($r = -.158$, $n = 252$, $p = .012$). However, there were no statistically significant results between either self-esteem scores and delinquent behaviors ($p = .110$) or FoMO scores and delinquent behaviors ($p = .195$).
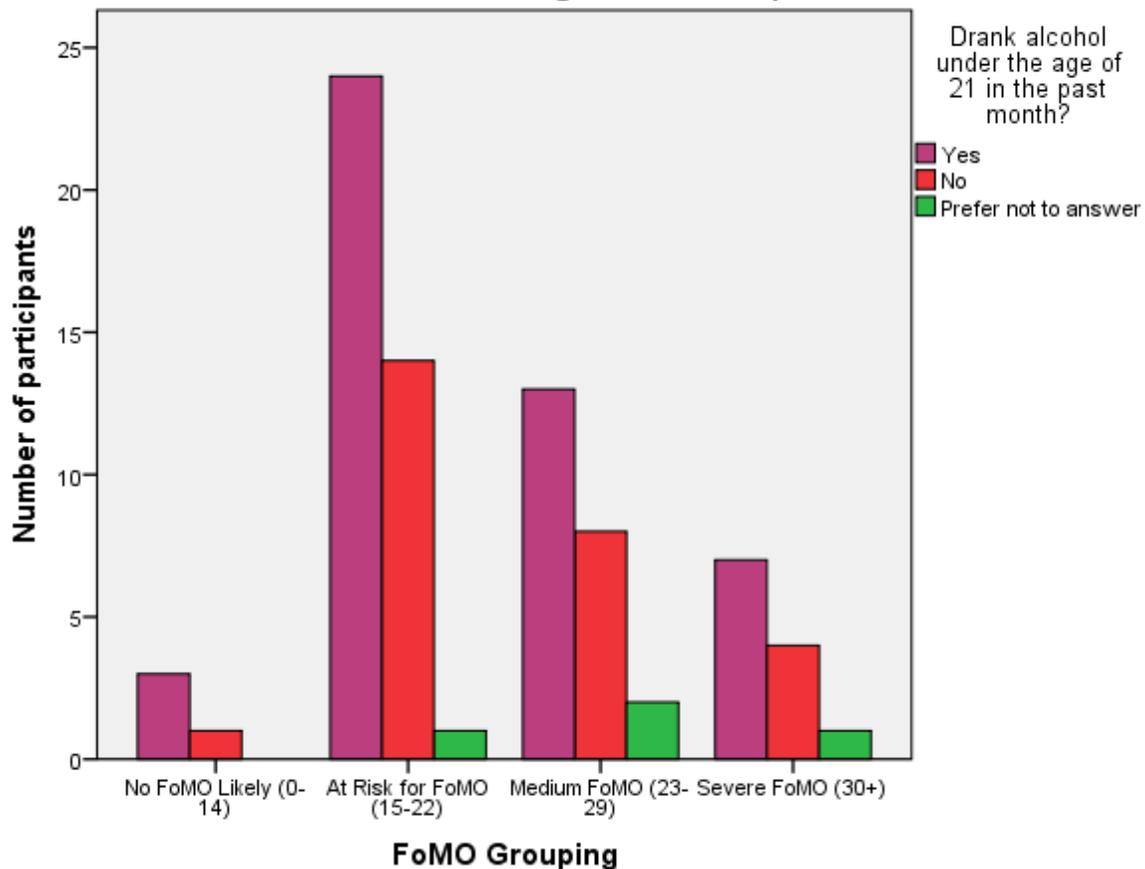
Two Pearson product-moment correlations between both mild and serious behaviors with FoMO scores that were run suggested there is no statistically significant linear relationship between either mild (p = .122) or serious (p = .401) behavior with feelings of missing out. However, further tests of one way ANOVAs with gender (males, females) as the between-subjects factor were conducted. There was sufficient evidence to conclude that the number of serious delinquent behaviors acknowledged is related to the gender of participants, F (2,49) = 10.12, p < .001. The male mean number of serious delinquent behaviors (M = 1.18, SD = 1.46) was significantly higher than the female mean number of serious delinquent behaviors (M = .48, SD = .89). The difference in gender with the number of mild delinquent behaviors approached significance, F (2, 249) = 2.93, p = .055, with the male mean number of mild delinquent behaviors (M = 2.78, SD = 1.89) higher than the female mean number of mild delinquent behaviors (M = 2.40, SD = 1.49).

Further chi-square tests were conducted to determine if there was a significant relationship between either self-esteem (low, normal, high) or fear of missing out (No FoMO likely, At risk for FoMO, Medium FoMO, and Severe FoMO) and either marijuana use within the past month (yes, no) or drinking underage within the past month (yes, no).

Examination of results do not suggest a statistically significant relationship amongst people's level of self-esteem and their marijuana use, x^2 (4, 251) = 1.648, p = .800. Additionally, there does not appear to be a statistically significant relationship amongst people's level of self-esteem and their underage drinking use (only accounting for those participants whose ages were below 21), x^2 (4, 78) = 4.847, p = .303.

There is also not a significant relationship between both people's FoMO scores and marijuana use, x^2 (6, 251) = 2.040, p = .916; and their underage drinking use (again, only accounting for those participants under the age of 21), x^2 (6, 78) = 1.863, p = .932. Figure 4 portrays the number of participants as a function of FoMO grouping and drinking alcohol under the age of 21 in the past month. Despite its insignificance, it is included to demonstrate both the relative comparative percentages amongst each category, as well as to highlight the number of students who have indeed drank underage in the past month– despite 1) being underage and 2) being at a dry campus.

Figure 4: Number of participants as a function of FoMO grouping and drinking alcohol under the age of 21 in the past month

Additional analyses of delinquent behaviors by use of a multiple regression model, shown in Table 5, were conducted to predict FoMO scores from underage drinking within the past month, smoking marijuana within the past month, having sex with more than 1 person within the past month, and current GPA, $F(4, 246) = 2.566$, $p < .05$, $R^2 = .040$. Having sex with more than 1 person ($p < .05$) added statistical significance to the dataset.

Table 5: Effects of Delinquent and Demographic Variables on FoMO Scores

Independent Variable	b	β	SE
Drank alcohol under 21	.246	.053	.325
Smoked marijuana	-.474	-.090	..376
Had sex with more than 1 person	-1.091	-.146*	.487
Current GPA	.691	.093	.465
Constant	21.865		1.457
N			250
F			2.566*
Nagelkerke R²			.040

Note: *p < .05

Discussion

The purpose of this study was to examine potential relationships and interactions between the topics of social media, self-esteem, Fear of Missing Out, and delinquent behaviors. It was hypothesized that data collection and analyses would support existing research of a relationship between social media use and feelings of a fear of missing out in that higher social media utilization would be related to higher levels of FoMO, along with a further proposition that lower self-esteem would be related to higher levels of FoMO and higher levels of delinquent behavior

as well. Additionally, it was hypothesized that males, those with lower GPA's, those in upper-class standings, and those with a greater number of college activities will have higher levels of FoMO. The results had an interesting range of support of these hypothesis from full support to no support across the focus areas.

Support of the hypotheses was found in several instances. For example, chi-square tests indicated statistically significant relationships between weekly social media use and both self-esteem and FoMO scores. An examination of the bar graphs suggests support for higher social media use tied to lower levels of self-esteem, as well as those with low FoMO scores typically spending less time per week on social media websites. There was also a positive relationship between the number of clubs and activities one participated in with their FoMO score. Additionally, the correlation between age and FoMO scores suggests that as age increases, FoMO decreases.

At the same time though, some of the hypotheses/prior research were not supported by the data. For example, the independent samples t-test that was conducted between gender and fear of missing out scores indicated a significant relationship between the grouping variable and dependent measure; however, not in the way that was hypothesized. Rather than males, as previous research suggests, it was instead females that had higher levels of FoMO. Their average was deemed to be in the "Medium FoMO" range, whereas the male average was categorized as "At risk for FoMO." Gender and self-esteem scores approached significance, with males, rather than females, having higher self-esteem levels– although both averaged in the "high self-esteem" category. Additionally, bivariate correlation tests between both mild and serious delinquent behavior with levels of FoMO indicated no statistically significant linear relationship existed. As a result, the hypothesis that FoMO levels and delinquent behavior may have a relationship was

refuted. Furthermore, neither of the chi-square tests examining year in school and GPA with either self-esteem or FoMO predicted any significant results. The age significance from earlier also suggests that the older one gets, the less their FoMO score would be– providing evidence in and of itself that the freshmen in this study were not the ones with the lowest collective scores as previous research suggested.

Unfortunately, there were a number of limitations faced with this study. While the sample size itself was favorable considering the targeted population of a small college, the size within each examined category were not as satisfactory. For example, within the category of self-esteem, only one participant fell under the category of low self-esteem from the participant pool. While this may be great for the reputation of the students at this particular college, it does not provide for an advantageous sample examination. Additionally, only 14 of the 252 participants had a GPA of less than 3.0– which made it difficult to seek significance when GPA-related categories were further analyzed (e.g. in relation to FoMO). Another limitation was in relation to the delinquent behavior questions, which asked participants to note delinquent behavior they had participated in the past month– which may be too short of a time frame for accurate depiction of, especially, serious criminal acts. Additionally, students at a private institution typically appear to participate in a fewer array of criminal activities than either their public or their non-college counterparts.

The problem of appropriate sample sizes could have been solved by the collection of data from other universities. For example, a public university may have garnered both a higher participant count, as well as greater variability in results as compared to the type of students private universities may attract. To account for a focus of delinquent behaviors, this assessment could be provided to those in a juvenile detention center.

It is crucial to study emerging concepts that directly relate to society today to stay updated on potential current, behavioral influences. Fear of Missing Out is a relatively new focus area with limited current research. Previous research has related FoMO to social media, but it is important to expand on already established research. Since many studies have related social media use with self-esteem, it was another realm of expanding research to see if self-esteem and FoMO could also be related. The addition of examining delinquent behaviors was an attempt to see if there would be any evidence there could be a relationship between the two categories, as the sociological concept of FoMO could have logically made sense to explain participation of delinquent behaviors by those who felt a need to belong and follow the behavior of the crowd they desire to belong with– even if delinquent. Despite not having any evidence to support this hypothesis, it still contributed to the research field by providing the lack of evidence that such a relationship exists– suggesting that FoMO may influence behavior in other, further researchable, facets.

From this study could also stem the particular research of self-esteem on the students of Florida Southern College. As only one student out of two hundred and fifty-two was deemed to have low self-esteem, a great research topic would be to analyze the notion "Does Florida Southern College attract students of high self-esteem levels or does Florida Southern College mold students into increasing their levels of self-esteem" as a longitudinal pre-test post-test examination of FSC students over the course of several years. For instance, freshmen can be given the Rosenburg 10 question self-esteem scale to take and then re-take the same scale shortly before graduation (or after their first year for a shorter examination period). Data could also be collected from another local college, such as Polk State, Southeastern, USF, or UCF for further comparisons.

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Appendix A
Informed Consent to Participate in Research
Information to Consider Before Taking Part in this Research Study

Project Title: A study of college students' attitudes and experiences
Principal Investigator: Destiny Zunic
Faculty Advisor: Lisa Carter
PURPOSE OF THE STUDY:
You are being asked to participate in a study involving an examination of participant attitudes and experiences relating to one's college history.
STUDY PROCEDURES:
As part of this study, you will be asked to complete a brief survey containing demographic questions and questions concerning student attitudes and experiences over a variety of components of campus and social life.
RISKS AND DISCOMFORTS:
There is no more than minimal risk associated with this study.
POTENTIAL BENEFITS:
You will not directly benefit from participating in this study; however the results may contribute to new and current research regarding student attitudes and experiences.
CONSENT:
By signing this consent form, you agree that you understand the procedures and any risks and benefits involved in this research**.**
CONFIDENTIALITY:
We must keep your study records confidential. Your privacy will be protected because you will not be identified by name as a participant in this project. Your data will be assigned a number code and will be kept in a locked cabinet. No records will be kept with your name on them. The obtained information will be kept for 5 years and will be shredded at that time. However, certain people may need to see your study records (including IRB officials). By law, anyone who looks at your records must keep them completely confidential.
VOLUNTARY PARTICIPATION / WITHDRAWAL:
Your participation is completely voluntary and you are free to refuse to participate or to withdraw your consent to participate in this research at any time without penalty or prejudice.
QUESTIONS, CONCERNS, OR COMPLAINTS:
If you have any questions, concerns, or complaints about this study, please contact the IRB chair at 863-680-6205 or the Provost and Vice President for Academic Affairs at 863-680-4124. You can also contact the advisor of the study, Dr. Carter, at lcarter@flsouthern.edu or 863-680-4307.

Consent to Take Part in this Research Study
It is up to you to decide whether you want to take part in this study. If you want to take part, please sign the form, if the following statements are true.
I understand the study described above and have been given a copy of the description as outlined above.
I am 18 years of age or older and I agree to participate.
I freely give my consent to take part in this study. I understand that by signing this form I am agreeing to take part in research.

_____   _____
Signature of Person Taking Part in Study   Date

_____
Printed Name of Person Taking Part in Study

Appendix B

This survey is anonymous. **You may choose to stop taking the survey at any time. Please note: you do not have to answer all questions if you do not choose to do so.**

Please complete each of the following demographic questions to the best of your knowledge.

1. With which of the following genders do you identify?
        Male
        Female
        Prefer not to answer

2. With which of the following races do you identify?
        Caucasian
        African-American
        Hispanic/Latino
        Asian
        Native American/American Indian
        Other _____
        Prefer not to answer

3. What is your age in years? _____

4. What is your year in school?
        Freshman
        Sophomore
        Junior
        Senior

5. What is your college major(s)? _____

6. What is your current GPA? If you are a first year, what was your high school GPA at graduation?

        Below 2.5

        2.5-2.9

        3.0-3.49

        3.5-3.99

        4.0 +

        Prefer not to answer

7. How many siblings do you have?

        0

        1-2

        3-4

        5+

8. Please list below the clubs and organizations that you belong to on campus.

9. Of which of the following do you have an account for?

        Facebook

        Snapchat

        Instagram

        Twitter

        Linked In

        Foursquare

        Whats App

        Group Me

        YouTube

        Google Plus

        Other (Please list all that may apply)

        _____

10. How much time do you estimate that you spend using social media per week?

      Less than 1 hour

      1-7

      8-14

      15-21

      22-28

      28 +

11. How much time do you estimate that you spend with your friends per week?

      Less than 1 hour

      1-10

      11-20

      21-30

      31-40

      40+

12. If applicable, estimate the number of friends that you have on Facebook.

13. If applicable, estimate the number of followers that you have on Instagram.

14. Which of the following statements do you most agree with?

      I would prefer to have one or two close friends rather than large groups of friends.

      I would prefer to have large groups of friends rather than one or two close friends.

      I would prefer to be alone.

      Prefer not to answer.

Listed below are statements concerning your everyday feelings. Please mark your response with how true each statement is of your general feelings. Please appropriately respond by what really reflects your feelings rather than what you think your feelings should be. Please address each statement independently from the other statements.

	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
15.	I feel that I am a person of worth, at least on an equal plane with others.				
16.	I feel that I have a number of good qualities.				
17.	All in all, I am inclined to feel that I am a failure.				
18.	I am able to do things as well as most other people.				
19.	I feel I do not have much to be proud of.				
20.	I take a positive attitude toward myself.				
21.	On the whole, I am satisfied with myself.				
22.	I wish I could have more respect for myself.				
23.	I certainly feel useless at times.				
24.	At times I think I am no good at all.				

Listed below are statements concerning your everyday experience. Please mark your response with how true each statement is of your general experiences. Please appropriately respond by what really reflects your experiences rather than what you think your experiences should be. Please address each statement independently from the other statements.

	Statement	Not at all true of me	Slightly true of me	Moderately true of me	Very true of me	Extremely true of me
25.	I fear others have more rewarding experiences than me.					
26.	I fear my friends have more rewarding experiences than me.					
27.	I get worried when I find out my friends are having fun without me.					
28.	I get anxious when I don't know what my friends are up to.					
29.	It is important that I understand my friends "in jokes."					
30.	Sometimes, I wonder if I spend too much time keeping up with what is going on.					
31.	It bothers me when I miss an opportunity to meet up with friends.					
32.	When I have a good time it is important for me to share the details online (e.g. updating status).					
33.	When I miss out on a planned get-together, it bothers me.					
34.	When I go on vacation, I continue to keep tabs on what my friends are doing.					

Listed below are questions concerning your behavior in the last <u>month</u>. As a reminder, your answers will be kept confidential and your responses are anonymous. Mark the most suitable response to answer the question to the best of your memory. Address each statement independently from the other statements.

During the last <u>month</u>, have you ever…*

35. Skipped class at least once?

       Yes

       No

       Prefer not to answer

36. Skipped class more than 5 times?

       Yes

       No

       Prefer not to answer

37. Drank alcohol under the age of 21?

       Yes

       No

       Prefer not to answer

38. Smoked marijuana?

       Yes

       No

       Prefer not to answer

39. Verbally attacked an authority figure (e.g. parent, professor, campus safety, etc.)?

       Yes

       No

       Prefer not to answer

40. Physically hit somebody (e.g. friend, family, significant other, etc.) with either your bare hands or a weapon?

       Yes

       No

       Prefer not to answer

41. Damaged public property (e.g. traffic signs, park benches, etc.)?

       Yes

       No

       Prefer not to answer

42. Damaged private property (e.g. cars, home windows, etc.)?

        Yes

        No

        Prefer not to answer

43. Stolen something worth less than $20?

        Yes

        No

        Prefer not to answer

44. Stolen something worth more than $20?

        Yes

        No

        Prefer not to answer

45. Sold or shared drugs to strangers?

        Yes

        No

        Prefer not to answer

46. Sold or shared drugs to friends?

        Yes

        No

        Prefer not to answer

47. Used cocaine, heroin, or methamphetamines?

        Yes

        No

        Prefer not to answer

48. Carried a weapon (e.g. gun, knife, etc.) without a permit?

        Yes

        No

        Prefer not to answer

49. Done graffiti on buildings or other locations?

        Yes

        No

        Prefer not to answer

50. Driven under the influence of any alcohol or other illegal substances?

        Yes

        No

        Prefer not to answer

51. Had sex with more than one person?

       Yes

       No

       Prefer not to answer

52. Had sex with more than five persons?

       Yes

       No

       Prefer not to answer

53. Drove more than 10 miles over the speed limit?

       Yes

       No

       Prefer not to answer

54. Drove more than 25 miles over the speed limit?

       Yes

       No

       Prefer not to answer

55. Cyberbullied somebody?

       Yes

       No

       Prefer not to answer

56. Cyberbullied more than one person?

       Yes

       No

       Prefer not to answer