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THE EFFECTS OF SOCIAL MEDIA USE ON THE MENTAL HEALTH AND WELL-BEING OF COLLEGE STUDENTS

BY

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M.P.H., Emory University, 2013
M.S., Georgia State University, 2007
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Abstract

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AND WELL-BEING OF COLLEGE STUDENTS

BY
Rebecca Meador

The advent of social media platforms such as Facebook has drastically changed the online environment in the past decade by allowing users to exchange ideas, feelings, and other media at an unprecedented rate. Consequently, social media has had an increasingly significant influence on multiple facets of modern life beyond online communication. Because this social networking phenomenon is relatively new, few research studies have examined the overall effect of frequent social media use on the mental health and well-being of its users. This limited understanding is particularly concerning in the context of teens and young adult users, as these groups tend to spend the most time socializing online and are therefore at the greatest risk of experiencing potentially negative effects. Recent findings show heavy social media usage rates among teens; these heavy usage rates suggest that a large part of teens' social and emotional development is now happening on the Internet, and this phenomenon may be continuing into young adulthood. There are many conflicting views on the effects of frequent use of social media—some findings suggest positive effects while others suggest negative effects, although most studies suggest *some* type of effect on the mental health of users.

To help address this knowledge gap, a quantitative study was conducted to explore the relationship between social media use and mental health within a college population. A web-based survey gathered retrospective data on students' moods, mental status, and behaviors related to social media use. One-way ANOVA analyses and independent-sample t-tests were used to determine any statistical relationships between variables. Results of an independent-samples t-test indicate that students *do* perceive overuse of social media as detrimental to mental health, and in fact, they may be correct about their beliefs. For students who perceive overuse of social media as problematic, this could be a target area for future intervention. Although, results of one-way ANOVA procedures suggest no relationship between Facebook use—both frequency and amount of time spent—and mental health within the study population. However, due to the limitations of this study, further research is warranted to fully understand this issue.

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List of Abbreviations

ACHA: American College Health Association

DSM-IV: Fourth version of the Diagnostic and Statistical Manual of Mental Disorders

FS: Flourishing Scale

IRB: Institutional Review Board

NCHA: National College Health Assessment

PHQ: Patient Health Questionnaire

CHAPTER I: INTRODUCTION

The advent of social media platforms such as Facebook and Twitter has drastically

changed the online environment in the past decade by allowing users to exchange ideas, feelings,

personal information, pictures, and videos at an unprecedented rate. Further, social media users

have rapidly adopted online social interaction as a fundamental part of daily life, as evidenced by

the growing number of daily users. In fact, Facebook alone reported an estimated 699 million

daily active users in June 2013 (Facebook, 2013).

Consequently, social media has an increasingly significant influence on multiple facets of

modern life beyond online communication—from marketing to politics to education to health to

basic human interaction. In many of these areas, social media presents clear benefits; however,

because this social networking phenomenon is relatively new, few research studies have

examined the overall effect of frequent social media use on the mental health and well-being of

its users. This limited understanding is particularly concerning in the context of teens and young

adult users, as teens and young adults tend to spend the most time socializing online and are

therefore at the greatest risk of experiencing potentially negative effects.

To help address this knowledge gap, a quantitative study was conducted to explore the

relationship between social media use and mental health and well-being within a sample of

college students. This paper provides an overview of the study starting with a summary of the

problem, based on findings from relevant studies to date.

Background of the Problem

A recent poll examining teens' use of social media found that 90% of teens under the age

of 18 have used some form of social media (e.g., Facebook, Twitter, Google+) in their lifetime,

and 75% of all teens have at least one active social networking profile (Common Sense Media,

2012). This overview identified Facebook for the highest level of use among teens with 68% of all teens saying that Facebook was their preferred website. With regard to frequency of use, half of all teens indicate that they visit a social media website daily, and about one fourth of all teens are considered "heavy users," meaning they use multiple types of social media on a daily basis (Common Sense Media, 2012). These heavy usage rates suggest that a large part of teens' social and emotional development is now happening on the Internet, and this phenomenon may be continuing into young adulthood.

While the increase in social media use is indisputable, there are many conflicting views on the effects of frequent use. From a positive perspective, Ito, Horst, and Bittani (2008) suggest that engagement in social media helps teens develop important knowledge and social skills and encourages them to be active citizens who create and share content. This is supported by the assertion that social acceptance—like that provided by social media networks—is an important component of an adolescent's life (Malti, Gummerum, Keller, Chaparro, & Buchmann, 2012). Similarly, Gonzales and Hancock (2011) allege an increase in self-awareness and self-esteem reportedly experienced by users who actively update their social media profiles.

However, others point to emerging evidence that extensive use of these websites may be harmful to one's mental health because an intense connection with the online environment can trigger depression in some adolescents (O'Keeffe, Clarke-Pearson, & Council on Communications Media, 2011), raising the need for greater understanding of how this pervasive social media use affects students' mental health and well-being.

For example, recent findings have led one group of researchers to coin a new term, "Facebook depression"(O'Keeffe, et al., 2011). O'Keefe et al. define Facebook depression as depression that arises when adolescents spend a lot of time on social media websites, such as

Facebook, and then start displaying depressive symptoms (2011). Teens who suffer from Facebook depression may be at risk for social isolation and sometimes begin to exhibit risky, aggressive, or self-destructive behaviors (O'Keeffe, et al., 2011). However, critics question O'Keefe et al.'s conclusions about causation with regard to depression (Grohol, 2011), pointing out that a correlation between the study variables does not mean a causal link exists between social media use and depression. Whether or not O'Keefe et al.'s conclusions are valid, subsequent studies have suggested that excessive time spent viewing social media websites *could* increase one's risk for depression (Jelenchick, Eickhoff, & Moreno, 2013; Pantic et al., 2012; Rajani, Berman, & Rozanski, 2011).

A potential factor contributing to Facebook depression in teens is that social media forums provide a platform for increased co-rumination. Co-rumination involves repetitive, problem-focused conversation among peers, and it is often associated with counterproductive coping strategies such as internalizing problems (Starr & Davila, 2009; Tompkins, Hockett, Abraibesh, & Witt, 2011). Co-rumination is also positively correlated with self-reports of anxiety, depression, and aggressive behavior in adolescents (Tompkins, et al., 2011). Facebook and other social media websites allow adolescents to perpetuate this repetitive, problem-focused dialogue in the virtual environment. This increased time spent focused on a single problem could lead to serious psychological consequences in teens (Starr & Davila, 2009; Tompkins, et al., 2011), namely depressive disorders.

The emerging evidence suggesting a link between social media use and depression is significant because depression is an ongoing public health problem affecting teens and young adults. In 2011, the American College Health Association–National College Health Assessment (ACHA–NCHA), a nationally recognized college health survey that assesses a wide variety of

health topics including students' mental health, found that about 30% of college students reported feeling "so depressed that it was difficult to function" at some time in the previous year (American College Health Association, 2012). This can be quite problematic for college students because depression has been shown to affect academic performance (Eisenberg, Gollust, Golberstein, & Hefner, 2007). Depressed students are also more likely to smoke (Cranford, Eisenberg, & Serras, 2009), abuse alcohol, and engage in risky sexual behavior (Weitzman, 2004). Additionally, depression is a major risk factor for suicide (Garlow et al., 2008), the third leading cause of death for teens and young adults ages 15 to 24 (National Center for Health Statistics, 2012). In 2011, more than 6% of college students reported seriously considering suicide, and about 1% reported attempting suicide in the previous year (American College Health Association, 2012).

Due to the serious nature of depression, its prevalence among teens and young adults, and its potential ties to social media use, further study is needed to explore the relationship between social media use and mental health in student populations.

Statement of the Problem

The current body of literature on social media presents conflicting views about social media's effects on one's mental health and well-being. While most research indicates that social media has *some* effect on one's mental health, contradictory reports indicate both positive and negative effects. Given the prevalence of depression in teens and young adults, as well as the detrimental effects of depression on both those affected and society at large, additional exploration of the potential negative effects of social media use—especially heavy use—on mental health is warranted. This study explores the possibility of a direct relationship between

the *volume* of social media use and overall mental health and well-being in a population of college students.

Purpose of the Study

      Using a quantitative approach, this study examined the association between students' social media use, the independent variable, and the state of their mental health and well-being, the dependent variable. A web-based survey gathered retrospective data on students' moods, mental status, behaviors related to social media use, and perceived level of social support. One-way ANOVA analysis and independent-sample t-tests were used to analyze survey data and determine any statistical relationships between variables.

      The study population consisted of all undergraduate students at Emory University in Atlanta, GA; this population was chosen due to convenience, proximity, and the author's pre-existing relationship with the institution. A random sample of 1220 students was chosen for participation in the study. The sample size was determined using a confidence level of 95%, a confidence interval of 5, an estimated population size of 7600 students (based on enrollment data from the fall of 2012), and an estimated response rate of 30% (based on previous University-wide surveys). This random sample was generated by the Office of the Registrar at Emory University, who provided the email addresses of selected participants which were subsequently used to disseminate the survey tool.

Significance of the Study

      Social media use has been climbing sharply in recent years, especially in younger populations such as college students. Emerging evidence suggests that social media use, particularly heavy use, may be linked to depression in this population; however, there is limited research on this topic and some findings conflict. Additionally, recent findings from a survey of

Emory students indicated that both Internet use and depression were thought to be impeding academic success within this population. To help address this issue, a study was conducted to determine if the two problems are linked in order to potentially provide the Office of Health Promotion with a focus area for future interventions. Because young adults are among the heaviest users of social media, this type of Internet use was the focus of the study.

In 2011, Emory University's Office of Health Promotion administered the ACHA-NCHA survey to a sample of the student population. When asked what type of health information they would like to receive from their school, the majority of Emory students wanted information about depression, anxiety, and stress reduction. Additionally, 17.6% of respondents reported having ever been diagnosed with depression, and 10.6% of respondents reported receiving treatment for depression within the past year (American College Health Association, 2011). While the rate of depression among Emory students was found to be lower than the national average, this remains an area of concern for the university's Office of Health Promotion.

Additionally, in another section of the NCHA survey, respondents were asked about impediments to their academic success (e.g., something that caused a lower grade in a class/exam, dropping or incompletion of a course). Among the top ten academic impediments were: Internet use/computer games, depression, and relationship difficulties (American College Health Association, 2011).

Considering these results, a survey tool was designed to assess Emory students' overall mental health and wellness (i.e., flourishing), as well as students' use of social media websites, particularly Facebook. While the study will not directly benefit its participants, the study findings will be shared with Emory University's Office of Health Promotion. Findings may influence future programs and student-oriented activities administered by this department.

Additionally, this study will add to the current knowledge regarding social networking and its relationship to mental health in college students.

Research Questions

This study attempts to determine the relationship, if any, between college students' use of social media and their mental health and well-being. The study design employs a quantitative approach to answer the following research questions:

Research Question 1. Does regular use of social media affect the mental health and well-being of college students?

> *Hypothesis*: Students who use social media more frequently have poorer mental health scores than minimal or infrequent users.

> *Null hypothesis*: Social media use has no negative effect on students' mental health scores.

Research Question 2. How do college students perceive their use of social media as it pertains to their mental health and well-being?

> *Hypothesis*: Students believe that obsessive or frequent use of social media websites *is not* detrimental to their mental health and well-being.

> *Null hypothesis*: Students believe that obsessive or frequent use of social media websites *is* detrimental to their mental health and well-being.

Research Question 3. How do students' perceptions about the effects of social media compare with their mental health scores?

> *Hypothesis*: There is a relationship between students' mental health and their perceptions about social media.

Null hypothesis: There is no a relationship between students' mental health and their perceptions about social media.

Research Design

The study participants consisted of a sample of undergraduate students at Emory University in Atlanta, GA. A web-based survey was used to gather data on students' use of social media and their overall mental health. The mental health portion of the survey consisted of two validated instruments, Diener's Flourishing Scale (Diener et al., 2009), and the Patient Health Questionnaire-9 developed by Pfizer (Spitzer, Kroenke, & Williams, 1999). Survey data were gathered by the third-party website Survey Monkey, and additional data analysis was performed using SPSS statistical software.

Assumptions, Limitations, and Scope

This study assumes that study participants answered the survey questions truthfully and accurately based on their personal impressions; however, participants may have under or over reported symptoms or behaviors due to the social desirability bias. Also, the retrospective nature of the survey tool may have resulted in additional bias. Additionally, a low response rate, below the threshold of statistical significance, could have affected the accuracy and reliability of study results.

Limitations and weaknesses of the study include the capability of the survey tool to sufficiently address the research questions. While portions of the survey tool have been validated by others, the tool in its entirety was not pre-tested with the study population prior to data collection.

The scope of the study is very limited, and the study does not take into account other factors that may affect students' overall moods or mental health. Conclusions based on the study

results should be cautiously drawn, and a causal link between the study variables cannot be definitively made. Study findings are limited to the Emory University student population, and it is not possible to generalize study findings to all college populations. However, results may be useful for comparing the study population to a similar student population located within a comparable university setting.

Definition of Terms

The terms listed here are conceptually and operationally defined for better understanding of the readers.

Adolescent/Teen: A person between the ages of 13 and 17 years old.

College Population: Undergraduate students at an institution of higher learning (e.g., college or university), typically between the ages of 18 and 24.

Depression: A state of low mood that can affect a person's thoughts, behavior, feelings and sense of satisfaction with life.

Flourishing: Having a combination of high levels of emotional, psychological, and social well-being or satisfaction.

Mental Health: A level of psychological well-being.

Obsessive Social Media Use: Spending 90 minutes or more on a social media website during one session or logging on to a site more than four times a day.

Social Isolation: A complete or near-complete lack of contact with or withdrawal from society.

Social Media: Electronic communication forums that allow users to share information, ideas, personal messages, and multimedia with other users.

Social Networking: Web-based social connections between people who share interests and/or activities in common; the use of social media websites to connect with others.

Well-being: The state of being happy or having overall satisfaction with one's life or a particular aspect of life (e.g., emotional, mental, or physical).

Wellness: A balance of the mental, physical, and emotional facets of one's life that results in an overall feeling of happiness or satisfaction; similar to well-being.

Young Adult: A person between the ages of 18 and 24 years old.

Summary

The impact of social media use on mental health and well-being is still poorly understood, but the field is gaining interest due to the growing popularity of social media websites among teens and young adults. This document outlines a quantitative study that examined the relationship between college students' use of social media websites and their mental health. The population of interest consisted of undergraduate students at Emory University, a large private research institution located in Atlanta, GA. In this study, a random sampling method was used to administer an online, retrospective survey to study participants. SPSS quantitative analysis software was used to analyze study data and determine any relevant relationships between study variables.

CHAPTER II: LITERATURE REVIEW

With its pervasiveness on college campuses and high rates of usage among young adults in general (Pew Internet, 2013), understanding the consequences of social media use—both positive and negative—in relation to mental health and overall wellness is essential for promoting student health and academic success on college campuses. However, examining the role of social media use on mental health and well-being requires an in-depth understanding of the larger contexts of both Internet use and mental health. This literature review first presents a general discussion about Internet use in terms of college student trends, differences in users, and effects of use, followed by an overview of relevant mental health theories used to inform the study design.

Internet Use

College Student Trends

On average, most college students use the Internet at least once a day (Forston, Scotti, Chen, Malone, & Del Ben, 2007) and spend somewhere between 1.5 and 3.6 hours online during a typical day (Mokhtari, Reichard, & Gardner, 2009; Padilla-Walker, Nelson, Carroll, & Jenen, 2010). Some students spend up to 20% of their free time on the Internet (Rotunda, Kass, Sutton, & Leon, 2003), and many students meet the criteria for Internet dependency and abuse (Forston, et al., 2007).

There are several factors that contribute to increased Internet use among college students, including widespread availability of the Internet and high-speed connections within the university setting, gaining rewards or recognition for Internet use, course requirements for using the Internet, and having access to the Internet at home or in their dorm rooms (Fusilier, Durlabhji, Cucchi, & Collins, 2005).

Differences in Users

Numerous studies have reported that males spend more time on the Internet and are more likely than females to become dependent on the Internet (Anderson, 2001; Gordon, Juang, & Syed, 2007; Jones, Johnson-Yale, Millermaier, & Perez, 2009; Ko et al., 2008; Niemz, Griffiths, & Banyard, 2005). Males are more likely to use the Internet for entertainment, daily news, games, downloading music, and pornography, while females are more likely to use it for email, school, or work (Gordon, et al., 2007; Padilla-Walker, et al., 2010). Moreover, male college students are more likely than female college students to go online at night (Jones, et al., 2009).

In addition to differences in Internet use by gender, there are also racial/ethnic differences in Internet use. One study found that African American college students spent more time on the Internet than students of other ethnicities, but reported using the Internet for school work less often than other races and ethnicities (Padilla-Walker, et al., 2010). Another study found Hispanic college students were less likely than African American and White students to use the Internet to communicate with their professors (Jones, et al., 2009). Differences in Internet use by academic major have also been found, with students who majored in sciences or engineering spending more time online than students who majored in liberal arts such as English or other "soft sciences" (e.g., social sciences, psychology) (Anderson, 2001; Niemz, et al., 2005).

Effects of Use

Prolonged Internet use can result in a number of negative consequences for college students such as difficulty sleeping, eye strain, neck pain, and social isolation or loneliness (Clark, Frith, & Demi, 2004; Kraut et al., 1998; Rotunda, et al., 2003). Additionally, studies have found that increased Internet use may be associated with increased promiscuity, feelings of

hopelessness, and diminished self-esteem (Niemz, et al., 2005; Padilla-Walker, et al., 2010;

Velezmoro, Lacefield, & Roberti, 2010).

     While some students recognize that the Internet causes them to waste time and may lead

to a decline in both the quality and the size of their social circles, many students report no desire

to reduce the amount of time that they spend online (Clark, et al., 2004; Rotunda, et al., 2003).

Further, despite the fact that frequent Internet users often describe their personalities as "bold,

outgoing, open-minded, and assertive," many also report feeling depressed and lonely

(Anderson, 2001; Clark, et al., 2004). College students who are socially isolated and experience

loneliness often spend more time online, and many students report that their relationships with

friends have been affected because of their Internet use (Bonebrake, 2002; Clark, et al., 2004;

Wang, 2001). Given their continued use of the Internet despite recognizing potentially negative

effects suggests that some users may be experiencing the effects of Internet addiction.

     Young and Rogers (1998) were the first to describe extreme and problematic Internet use

as an addictive disorder, noting features such as tolerance, fixation, and the inability to curtail

usage. While not officially acknowledged as a psychological disorder in the fourth version of the

Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), Young and Rogers based their

diagnosis of Internet addiction on the following standards (see Table 1), which were adapted

from the DSM-IV's criteria for pathological gambling, an impulse control disorder considered to

be most similar to Internet addiction (Şenormancı, Konkan, & Sungur, 2012).

Table 1. Young's Criteria for Internet Addiction

1. Do you feel preoccupied with the Internet (think about previous on-line activity or anticipate next on-line session)?

2. Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction?

3. Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use?

4. Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use?

5. Do you stay on-line longer than originally intended?

6. Have you jeopardized or risked the loss of significant relationship, job, educational or career opportunity because of the Internet?

7. Have you lied to family members, therapist, or others to conceal the extent of involvement with the Internet?

8. Do you use the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)?

(Young & Rogers, 1998)

However, while Young and Rogers' perspective supports the assertion that overuse of the Internet may be detrimental to students' overall well-being and mental health, Clark et al. (2004) asserted that regular Internet use may actually play a constructive role in the lives of college students, suggesting frequency of use may be a determining factor in Internet use effects. For example, some students report moderate Internet use contributes to increased social support, improved self-esteem and self-confidence, and increased communication with friends and family (Clark, et al., 2004). Additionally, some college students describe Internet use as a way to escape from reality (Clark, et al., 2004), thereby causing feelings of joy or euphoria.

The conflicting opinions on effects of use might also be due to different types of use, as different types of Internet use are associated with certain behaviors and perceptions. For

example, use of the Internet for school work is associated with lower rates of drug use, higher

perceptions of self-esteem, and positive family relationships (Padilla-Walker, et al., 2010), but

using the Internet for coping purposes is associated with higher levels of depression and social

anxiety. Additionally, using the Internet for pornography is associated with increased drinking

and lower perceptions of social acceptance, and using the Internet for chatting is associated with

lower levels of perceived self-worth (Gordon, et al., 2007; Padilla-Walker, et al., 2010).

Less is known about the effects of using the Internet for social media purposes, although

socializing with others has become one of the most popular uses of the Internet (Liu & Larose,

2008). A recent poll showed that over 80% of adults age 18 to 29 have used some type of social

media website on a regular basis (Pew Internet, 2013), representing the highest percentage of

users across various age groups (see Figure 1).
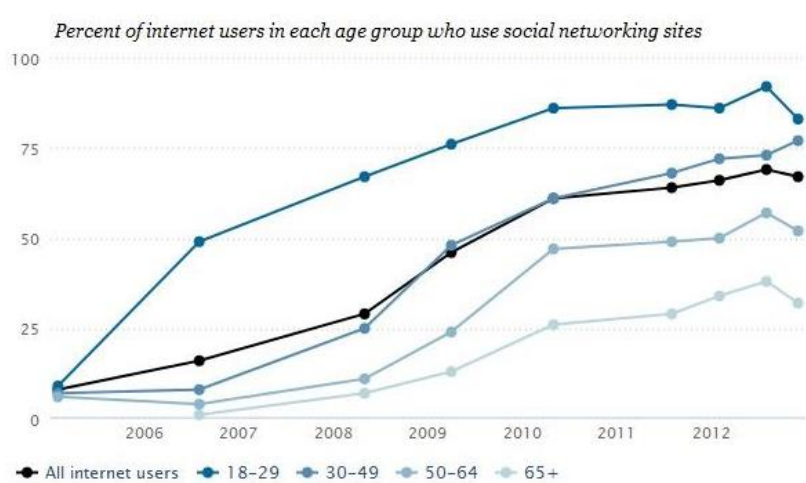
Figure 1. Social Media Use Among Age Groups

Source: Pew Research Center's Internet & American Life Project, 2013

One study examining the impact of Facebook use on people's perceptions of others found

that participants who spent more time on Facebook were more likely to believe that others were

happier and had better lives than they did, and they were also more adamant about this belief

(Chou & Edge, 2012). A potential cause of this misperception is using the availability heuristic

to manage one's social relationships; that is, individuals can only base their judgment of others on examples that they can easily recall (i.e., what people chose to post on their profiles) (Chou & Edge, 2012). Most people portray themselves in the most flattering light possible when developing an online profile, thereby presenting an "ideal self" to the rest of the virtual world (Ellison, Heino, & Gibbs, 2006). Further, by becoming immersed in an online social environment, rather than a real-life physical one, individuals often have a distorted view of the lives of their peers (Chou & Edge, 2012).

In another series of studies examining how college students assess moods, both their own and those of their peers, subjects frequently underestimated how unhappy others were, and as a result, they were more likely to feel unhappy themselves (Jordan et al., 2011). The author of the preceding study discussed his inspiration for the study, saying that he was inspired by his friends' reactions to the social media website Facebook. He observed that his friends felt poorly about themselves after "'logging onto the site and scrolling through others' attractive photos, accomplished bios, and chipper status updates.'" In the same interview, Jordan summed up his friends' attitudes about the social media site and why it made them feel inferior, "'They were convinced that everyone *else* was leading a perfect life,'" (Copeland, 2011). This phenomenon begins to explain why Facebook and other social media websites might contribute to depressed mood, lower self-esteem, and overall poorer mental health in users.

In fact, a majority of recent evidence has indicated that continual, passive engagement with social networking websites may lead users to develop feelings of exhaustion, irritation, and overall annoyance with the websites (Koroleva, Krasnova, & Günther, 2010; Maier, Laumer, Eckhardt, & Weitzel, 2012), which may contribute to feelings of loneliness and isolation. In a formative study on social network use, Burke et al. (2010) uncovered a significant link between

social content consumption and users' perceptions of loneliness; however, the quality of content being consumed most likely affected users' overall experiences of loneliness.

Another reason people may have a distorted view of the lives and happiness of others is the large number of relative strangers in their social network. Chou and Edge found that individuals whose "friends" lists included more people whom they did not personally know had a stronger belief that others had better or more fulfilling lives than they did. The authors attributed this misconception to the fact that "online social networks grow faster than real-life social networks; therefore, it becomes nearly impossible for its users to interact closely with each of their network friends," and this tends to make users "cognitive misers," (i.e., think the worst of themselves) (2012). For example, the average Facebook user has an estimated 217 network members (Acar, 2008), while the average size of a real-life social network is around 125 (Hill & Dunbar, 2003). Both the artificial expanding of one's social network and the selective filtering of online profiles seem to contribute to the misperception that others are always happy and that they lead "better" lives.

Finally, in a recent survey, The National Center on Addiction and Substance Abuse at Columbia University (2011) found that in teens, social media sites may have been encouraging negative behaviors such as procrastination and the use of illicit substances. The survey indicated that teens that used social media websites on a daily basis were five times more likely to use tobacco, three times more likely to use alcohol, and twice as likely to use marijuana as their counterparts who did not visit social media websites. This was attributed to the content that teens were viewing on these social media websites. For instance, 50% of teens who spent any time on social media sites during a typical day had seen pictures of kids drunk and/or drinking, passed out, or using drugs on these sites (The National Center on Addiction and Substance

Abuse, 2011). This subsequent increase in destructive behaviors could also be contributing to the rise in depressive symptoms within this population, thereby causing an overall decline in mental health among adolescents.

Mental Health and Wellness

The following section discusses several theories on mental health that were used to inform the study. The section ends with a brief discussion of behavioral change theory as it relates to addictive Internet use.

Wellness

According to Dr. Bill Hettler (1976) of the National Wellness Institute, wellness is more than just physical fitness or a state of physical health. Instead, the concept of wellness is multidimensional, consisting of the following different dimensions: social, emotional, environmental, intellectual, physical, and spiritual. This interdependent model (see Figure 2) is commonly referred to as the Six Dimensions of Wellness and is used by many comprehensive health promotion programs, such as those administered by Emory University's Office of Health Promotion.

Figure 2. Dimensions of Wellness

Six Dimensions of Wellness Model ©1976 by Bill Hettler, MD

      In terms of college students' mental health and well-being, perhaps the most important

and relevant feature of this model is the social dimension described here:

> The social dimension encourages contributing to one's environment and
>
> community. . . . you'll become more aware of your importance in society as well
>
> as the impact you have on multiple environments. You'll take an active part in
>
> improving our world by . . . initiating better communication with those around
>
> you. You'll . . . discover the power to make willful choices to enhance personal
>
> relationships and important friendships, and build a better living space and
>
> community. (Hettler, 1976)

Positive Psychology

      One relevant field of study related to mental health and wellness is positive psychology.

Positive psychology focuses on the nature and causes of ideal human functioning. The range of

human functioning for health and well-being has been described by Gudmundsdottir (2011) as a

bi-directional scale that ranges from death to optimal wellness (see Figure 3).
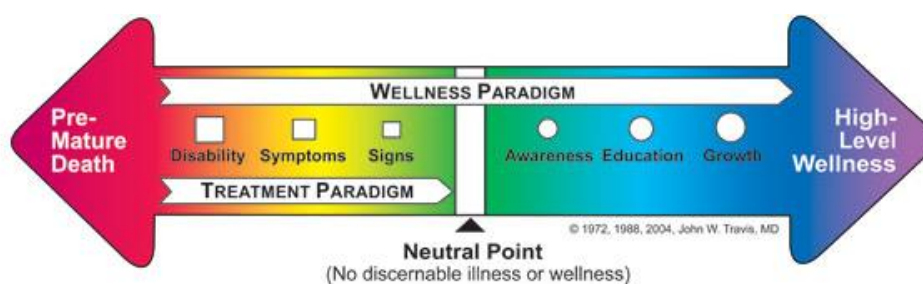
Figure 3. The Illness-Wellness Continuum

      An important component of positive psychology is the idea of flourishing. Flourishing

has been defined as not only the absence of disease, disorder or disability, but rather the focus on

satisfaction in all aspects of life (Keyes, 2012). Flourishing and mental illness are two

components that contribute equally to an individual's complete mental health. As such, an individual can be flourishing while also having mental illness (Keyes, 2010). However, this individual would not have the complete mental health or "optimal wellness" that is endorsed by positive psychologists such as Gudmundsdottir (2011). Flourishing has become a popular measure in positive psychology, allowing researchers and public health practitioners to assess where individuals lie on the illness-wellness continuum (Keyes, 2010).

Based on Keyes' summary, characteristics of flourishing include feeling control over one's life, knowing what one wants from life, learning from adversity or being resilient, and having a strong support system in family and friends (Keyes, 2007). Keyes also found that despite an individual's status of mental illness, people who do not have at least a moderate level of flourishing are less likely to utilize health services, more likely to miss days at work or school, and less likely to be physically healthy (Keyes, 2010). With this in mind, a "Flourishing Scale" was included in this study's survey tool in order to assess students' overall mental health and well-being.

Health Promotion

The main goal of positive psychology is to promote a shift toward "optimal wellness." Health promotion activities are intended to empower individuals to shift beyond being neutral (disease-free) toward reaching a state of optimal wellness (Gudmundsdottir, 2011); this is where the fields of positive psychology and health promotion intersect. In general, health promotion differs from disease prevention in that it primarily emphasizes achieving wellness beyond the onset of disease.

Health promotion activities on college campuses are an important aspect of ensuring students' mental health and wellness. College can be a stressful experience for some students

who are away from home for the first time and who are learning to juggle multiple commitments such as classes, work, social engagements, and other extracurricular activities. While physical health is often emphasized in health promotion, mental health should not be ignored when it comes to students' total wellness.

In order to be effective, health promotion programs should rely on sound theoretical perspectives related to health education and health promotion (Lindsay, 2000). In practice, sound theory generally leads to more worthwhile ideas and provides direction for effective program development. The majority of health behavior and health promotion theories have been adapted from the social and behavioral sciences (Glanz, Rimer, & National Cancer Institute, 2005), and these theories draw upon various fields such as psychology, sociology, anthropology, consumer behavior, and marketing (Glanz, et al., 2005; McLeroy, Bibeau, Steckler, & Glanz, 1988). In health promotion and health education, no single theory is dominant because the problems, behaviors, populations, cultures, and contexts of public health practice are extremely broad and quite diverse (Glanz, et al., 2005; Lindsay, 2000).

Behavioral Change Theory

The Stages of Change Model was developed by Prochaska and DiClemente (1992) to describe the different stages that occur during the behavior change process. This concept may be applied to beginning a positive behavior such as starting an exercise routine, or to stopping a negative or unhealthy behavior such as smoking. This model's basic principle is that behavior change is *a process*, not an event. As a person tries to change a behavior, he or she moves through five stages: pre-contemplation, contemplation, preparation, action, and maintenance (see Figure 4).
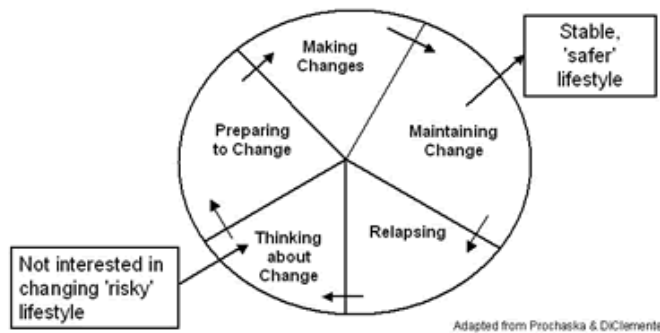
Figure 4. The Process of Change Model

(Prochaska & DiClemente, 1992)

However, it is important to note that in order for behavior change to take place, an individual must recognize that his current behavior is problematic or otherwise detrimental to his health or overall well-being. Additionally, peer pressure may lead an individual to see certain behaviors as problematic if said behaviors have a noticeable negative effect on his social life or popularity. If the behavior is not viewed as problematic by the individual, it is unlikely that a behavior change will occur.

Therefore, in the context of this study, recognizing that social media use is problematic for the user will be more likely to result in an overall behavior change. While this study does not aim to change students' behavior, it does seek to determine if students (a) experience negative effects in terms of their mental health, and (b) perceive their use of social media as problematic.

Summary

This chapter presents an examination of Internet use among college students, including trends in use and differences in users. Within this context, social media use was evaluated as it pertains to possible effects on the mental health of its users, particularly young adults. The final

section of the chapter presents an outline of relevant mental health theories used to inform the

study design, giving readers a more complete view of the study problem.

CHAPTER III: METHODOLOGY

This chapter provides an overview of the study methodology including a description of the population and sample, study design, data collection, instruments, data analysis, data security, and study limitations.

Population and Sample

The population consisted of all Emory University undergraduate students. Emory University is a private university and research institution located in a suburb of Atlanta, Georgia. Emory is divided into nine schools, four of which serve undergraduate and graduate students. In the fall of 2012, Emory University's total enrollment, including both undergraduate and graduate schools, totaled 14,236 students. Undergraduate students made up over 50% of the entire student body, totaling 7,656 (Emory University, 2013); this number was used to calculate the sample size for the study because current enrollment data were unavailable during the study design. Communications with the Registrar's office later revealed that the actual undergraduate enrollment for the Fall 2013 semester totaled 6,648 students (Morgan, 2013), approximately 1,000 less than previously thought.

Since the survey was developed to gather retrospective information on students' moods, their mental status, their behaviors related to social media use, and their perceived level of social support, the sample included 1220 randomly selected Emory undergraduate students. The total undergraduate population count (2012 enrollment data) was used to determine an appropriate sample size with a confidence level of 95% and a margin of error of 5, assuming a 30% response rate. It should be noted, however, that the actual response rate was somewhat lower (24.3%) than expected, and this may have affected the accuracy of the study results.

Study Design and Recruitment

A quantitative approach was utilized to assess associations between students' use of social media and their mental health and well-being. Cross-tabulations of social media usage and mental health were used to determine if any associations existed between these variables.

The random sample of 1220 students was generated by the Office of the Registrar, and those selected for the sample were sent an email inviting them to participate in the survey. An incentive was offered in the form of a random drawing for one of two $50 Visa gift cards. Respondents were given the option to enter the drawing to receive a Visa gift card in the amount of $50 at the conclusion of the survey. Entering the drawing was completely voluntary.

Students who had previously chosen to have their personal information withheld, pursuant to The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99), were not included in the study sample. Additionally, students under the age of 18 were also excluded from the study sample due to concerns about the age of consent for research studies.

Data Collection

An online survey through Survey Monkey was used to capture data on students' overall moods and behaviors related to social media use. An online survey was the chosen method of data collection due to widespread computer and email accessibility within the university. In addition, the method required minimal time and cost to the study respondents. The self-administered survey guided the respondents through the online questionnaire. The estimated time to complete the survey was approximately 15 minutes.

At the conclusion of the survey, respondents wanting to enter the incentive drawing had the opportunity to click on a hyperlink that directed them to a second survey. This survey

contained one question asking for the respondent to input an e-mail address for later contact. The e-mail addresses were not linked to the data of the respondents' first surveys. At the end of data collection, all e-mail addresses were collected, and two addresses were randomly chosen to receive an incentive reward. The two respondents who were chosen were contacted via e-mail to receive instructions on a preferred method of delivery.

Instruments

Survey questions related to Internet and social media use were adapted from the Pew Internet & American Life Survey (Pew Internet, 2013). Questions relating to mental health and well-being were taken directly from the Patient Health Questionnaire and Diener's Flourishing Scale, which are described in detail below.

The Patient Health Questionnaire (PHQ) (Spitzer, et al., 1999), is an instrument for making "criteria-based diagnoses of depressive and other mental disorders" (Spitzer, Williams, Kroenke, Hornyak, & McMurray, 2000). It is a public domain scale that is available in several languages, free of cost. The PHQ is a useful tool because it can be self-administered (Kroenke, Spitzer, & Williams, 2001), and it evaluates eight different areas of diagnoses, including major depressive disorder, as specified by the DSM-VI (Kroenke, et al., 2001; Spitzer, et al., 2000). Further, the diagnostic validity of the PHQ has been established in several large sample studies (Kroenke, et al., 2001; Spitzer, et al., 2000).

Specifically, the survey in this study made use of the PHQ-9, which is the depression module of the PHQ. With only nine items, the PHQ-9 is much shorter than many other depression scales, and it has comparable sensitivity and specificity. Additionally, it consists of the nine criteria for depressive disorders outlined in the DSM-IV. As a severity measure, the total PHQ-9 score can range from 0 to 27, with each individual question having a value between

0 and 3. The PHQ-9 is a useful tool for clinicians because it can establish depressive disorders

as well as evaluate the severity of related depressive symptoms (Kroenke, et al., 2001).

Instructions for its use are available at:

http://www.phqscreeners.com/instructions/instructions.pdf.

Other questions relating to mental health and flourishing were taken from Diener's

Flourishing Scale (2009). The Flourishing Scale consists of eight items describing important

aspects of human functioning ranging from positive relationships, to feelings of competence, to

having meaning and purpose in life. The scale was previously called Psychological Well-being,

but the name was changed to more accurately reflect the content because the scale includes

content that goes beyond psychological well-being narrowly defined (Diener, et al., 2009).

In addition, input from the thesis committee was used to construct questions regarding

Internet and social media use. The survey consisted of 28 questions with topics including

demographics, Internet use, social media use, social support systems, and overall mood or mental

well-being.

Data Analysis

Descriptive statistics were generated to examine quantitative data. Although Survey

Monkey provided summary statistics reports, SPSS was utilized to further analyze quantitative

survey responses, and some variables were re-coded. Quantitative data included variables such

as gender, age, educational level, and living situation. Survey response data were first re-coded

in the SPSS software, then survey responses were aggregated and percentages calculated; these

results were compared to the results from Survey Monkey to validate the study findings. Results

displayed in narrative, table, and graphic formats were included in the final study report (see

Chapter 4). A one-way ANOVA was used to determine if there was a difference between the

means of four different user groups, as categorized by amount/extent of Facebook use, on a continuous dependent variable (e.g. total Flourishing Score and total Depression Score).

Respondents' Privacy and Data Security

On August 20, 2013, a study application was submitted to Emory University's Institutional Review Board (IRB). The study was approved by the IRB on September 23, 2013; see appendix B. The following protocol was used to protect the rights, confidentiality, and privacy of survey respondents.

While completing the online survey, IP addresses were not collected. Names or other personal identifiers were not collected during the administration of the survey. While the survey did not ask respondents for their date of birth, it did ask for approximate age; however this was not considered to be a personal identifier.

All collected data were stored on the Survey Monkey server and exported into a SAV data file for further statistical analysis in SPSS. A unique random identifier was assigned to each respondent's group of answers. The data files were housed on a password-protected computer. Only the principal investigator had access to the data.

Additionally, Survey Monkey has rigorous privacy and security measures in place to protect the privacy and security of survey information. Privacy of information was addressed both at the survey creator level and the survey respondent level. On the security side, areas addressed are user security, physical security, availability, network security, storage security, software, organizational security, and the handling of security breaches. Detailed information on Survey Monkey's privacy and security policies can be reviewed on the company's website: http://www.surveymonkey.com.

Limitations and Delimitations

The study design presented several potential limitations and delimitations that could affect the results of this study:

- **Recall bias:** Some questions required respondents' to answer based on memory, which increases the possibility of under or over reported symptoms and behaviors.

- **Non-response bias:** Differences between respondents and non-respondents are unknown. Therefore, respondents may not necessarily be reflective of the study population, and their responses might not be indicative of the behaviors and moods of the entire population.

- **Low response rates:** A low response rate may have affected the accuracy of results.

- **Lack of generalization:** Study findings are limited to the Emory University student population, and findings may not be useful for comparing the study population to other student populations.

- **Self-reported moods and behaviors:** Respondents may under or over report behaviors or moods due to social acceptability or desirability, introducing another source of bias.

- **Limited scope of the study:** This study is very limited in its scope, and it does not take into account other factors that may affect students' overall moods or mental status. Conclusions based on the study results should be cautiously drawn, and causal links between the study variables cannot be made.

Summary

This study was designed to determine if there is an association between social media usage and students' perceived mental health or well-being. A self-administered survey was utilized to gather retrospective data on students' moods, their mental status, their behaviors

related to social media use, and their perceived level of social support. The opportunity to win

one of two $50 gift cards was used as an incentive to recruit study participants from a random

sampling of the student population. Quantitative data analysis methods were utilized to assess

any possible associations between behaviors and overall mental health, with limitations noted.

CHAPTER IV: RESULTS

This chapter presents the findings of the current study. First, demographic data is presented followed by an overview of social media use among study respondents. Second, data analyses used to answer the primary research questions are presented along with other important research findings. Data were exported from the Survey Monkey website and analyzed using SPSS statistical software.

Demographics

Of the 1220 students who were invited to participate in the study, 24.3% (n=297) responded. The majority of survey respondents (62.8%; n=184) were female. Additionally, 29.0% (n=85) of respondents classified themselves as seniors, which was the largest class group of participants. The ages of participants ranged from approximately 18–24 years, with most participants ranging from 18–21 years old (n=253). However, 2 students were under 18 years of age and 12 students were over 24 years of age. Additional demographic characteristics of study participants are shown in Table 2.

Table 2. Demographic Characteristics of Survey Respondents

(n=297)		
Gender	**%**	**n**
Male	36.9	108
Female	62.8	184
Transgender	0.3	1
Age	**%**	**n**
Under 18	0.7	2
18 - 19	43.0	126
20 - 21	43.3	127
22 – 24	8.9	26

25 and over	4.1	12
Class Status	**%**	**n**
Freshman	22.5	66
Sophomore	22.2	65
Junior	25.9	76
Senior	29.0	85
Grad Student/Other	0.3	1
Race/Ethnicity	**%**	**n**
African American/Black	12.3	36
Asian/Pacific Islander	32.2	94
Hispanic/Latino	3.8	11
Multiracial	3.8	11
White/Caucasian	45.2	132
No response	2.7	8

In terms of living situation, 9.5% (n=28) of students reported that they lived alone, 84.4% (n=248) that they lived with other students, and 2.0% (n=6) that they lived with roommates who are not students. Seven percent (n=21) reported they live with a parent or guardian, and a single respondent reported that he or she lives with a child or children.

Social Media Use

Seven and a half percent (n=20) of respondents said that they did not use any type of social media website. Of all social media users, 61.9% (n=169) indicated that they had a preferred social media website; Facebook was the preferred social media website among users with a designated preference (63.7%; n=116).

When asked if they had ever used Facebook, 95.0% (n=256) of respondents answered yes. Additionally, about half of Facebook users (n=128) admitted to voluntarily taking a break from Facebook for a period of one week or longer. The most common reasons for taking a break from Facebook included the following: too busy (18.0%), wasn't interested (12.5%), and waste of time (14.0%); this study question and pre-determined answer choices were adapted from the

Pew Internet & American Life Survey on social media use (2013). Among Facebook users, 38.8% (n=99) admitted to accessing the website 5 or more times per day; these individuals were classified as obsessive or heavy users. Forty-four percent (n=113) of users stated that they accessed the site between 1 and 4 times a day; these users were designated as moderate or habitual users. When asked how long they typically spent on the website during a given session, 62.5% (n=160) of Facebook users stated that they spent less than 10 minutes on the site at a time, and 31.0% of users (n=81) stated that they typically spent between 11 and 30 minutes on the site at a time. Only 5.5% (n=14) of users spent over 30 minutes on the site during a typical session.

The average number of Facebook friends among users in the study sample was 697; the range was from 13 to over 2,000. Additionally, the average number of Facebook friends that users did not know personally (e.g., friends of friends, someone they have never met in person) was 98.

In terms of the importance users place on Facebook, **Error! Reference source not found.** demonstrates its relative importance to users over the past year. Approximately 15% of users saw Facebook as being more important to them now than it was a year ago.

Thinking about the impact of Facebook on your life overall, would you say that over the last year Facebook has become MORE important to you, LESS important to you, or that it is about as important as it was a year ago?

51.6% n=130
31.4% n=79
1.2% n=3
14.9% n=40

More important
Less important
As important
Using Facebook less than one year
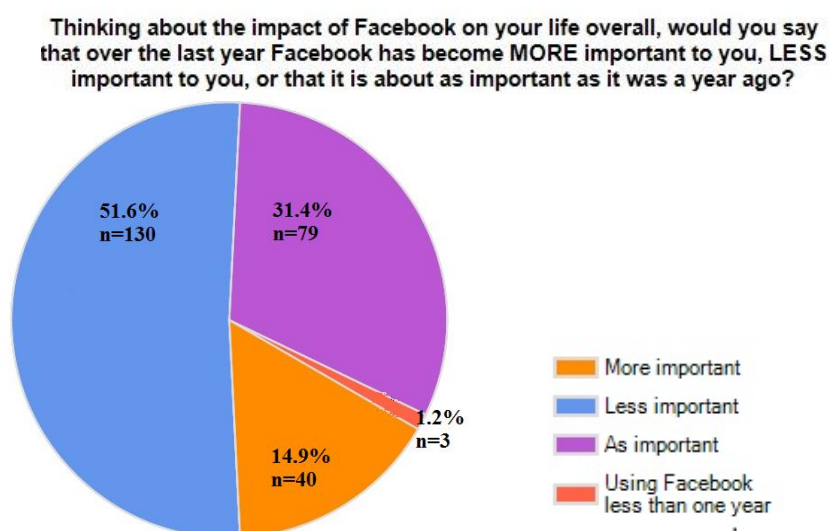
Figure 5. Relative Importance of Facebook Over the Past Year

Further, Figure 6 demonstrates users' perceived rate of use over the past year, which has

decreased for almost half (n=118) of all Facebook users.

And over the last year, would you say that the amount of time you spend using Facebook on a typical day has...
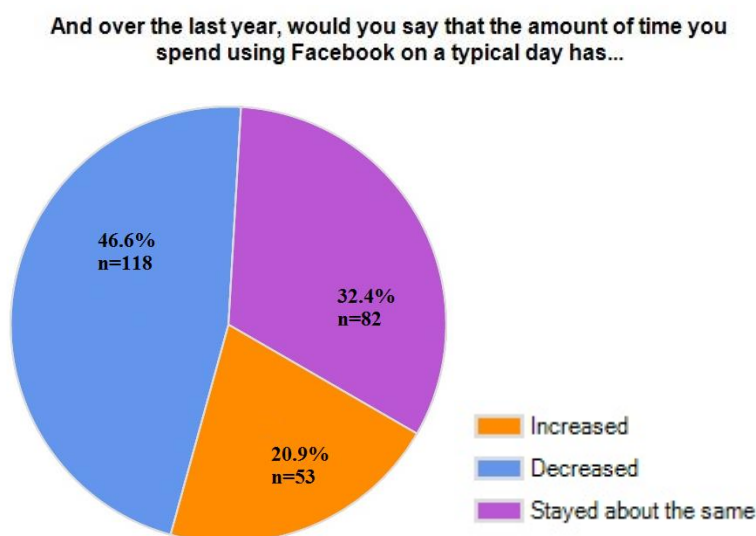
Figure 6. Relative Facebook Use Over the Past Year

Research Questions

      This section addresses the study's three primary research questions separately. The

results of survey questions directly related to each research question are also discussed.

      Question 1. Does regular use of social media affect the mental health and well-being

of college students? In answering this research question, it was necessary to look for any

statistical relationships between the following groups of variables: Facebook frequency and

flourishing, Facebook frequency and depression, amount of use (i.e., time) and flourishing, and

amount of use and depression. Each of these relationships was analyzed independently as

described below.

Facebook Frequency and Flourishing

      Due to the categorical nature of the independent variable (Facebook frequency),

Spearman's correlation was determined to be an inappropriate test for analyzing the possible

relationship between variables. Figure 7 displays the non-monotonic relationship exhibited by these two variables, thus precluding this dataset from Spearman analyses.
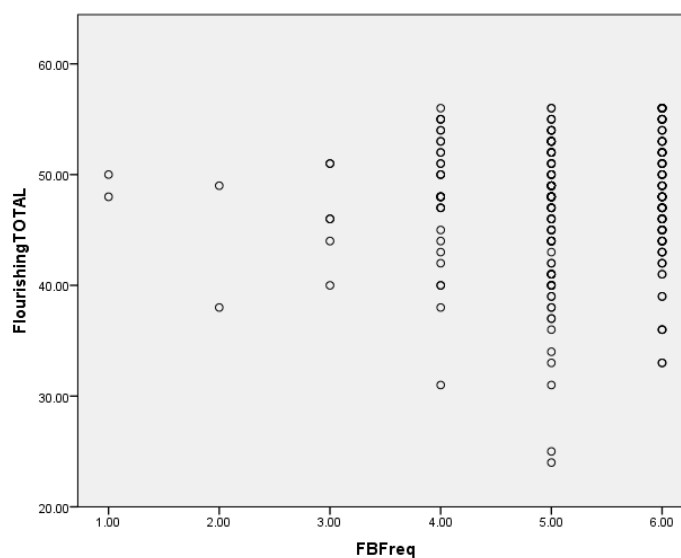
Figure 7. Scatterplot of Flourishing Score and Facebook Frequency

Instead, a one-way ANOVA was conducted to determine if the Flourishing Score (dependent variable) was different for groups with different levels of Facebook use frequency (independent variable). Participants were classified into six groups based on their frequency of Facebook use: group 1 = less than once a month (n=2), group 2 = once or twice a month (n=2), group 3 = once a week (n=6), group 4 = every other day (n=33), group 5 = 1-4 times a day (n=112), and group 6 = 5 or more times a day (n=99). There were eight outliers in the dataset, as assessed by boxplot analysis. Of these outliers, one extreme outlier was removed from the data set, and a new boxplot analysis was performed to retest for outliers. The extreme outlier had a Flourishing Score value of 11 (with 7 being the lowest possible score) and a Facebook Frequency score of 5 (logging in 1- 4 times a day). In comparison, the next lowest Flourishing Score equaled 24, and the highest score equaled 56, which was the highest possible score. Once this extreme outlier was removed and the data re-tested, seven outliers remained in the dataset;

these data points were not removed from the dataset prior to analysis. The mean Flourishing

Score for the sample was 47, with a standard error of 0.37 and a standard deviation of 6.2.

Further analysis revealed that the Flourishing Score was *not* normally distributed, as assessed by

Shapiro-Wilk's test of normality ($p > 0.05$).

Analysis also revealed that the data had a skewness score of -1 and a kurtosis score of

1.3. Skewness < 0 indicates a left skewed distribution in which most values are concentrated on

the right of the mean, with extreme values to the left. A kurtosis score of < 3 indicates a

platykurtic distribution, which is marked by a flatter than normal distribution with a wider peak;

the probability for extreme values is less than for a normal distribution, and the values are wider

spread around the mean. Due to these findings, a simple one-way ANOVA was determined to be

inadequate for analyzing the full data set. Further analysis of the independent variable, recoded

as Facebook Frequency, revealed that three of the user groups contained only six or fewer data

points, causing the dataset to be highly skewed and irregular. The independent variable,

Facebook Frequency, was coded as indicated in the previous paragraph. Of these groups, 1 and

2 contained only two data points each, and 3 contained only six data points. Therefore, these 10

data records were selectively filtered out before one-way ANOVA was performed on the

following groups: 4 (occasional users), 5 (moderate users), and 6 (obsessive users).

The assumption of homogeneity of variances was tested for using Levene's Test of

Equality of Variances, which is found in **Error! Reference source not found.**.

Table 3. Test of Homogeneity of Variances: Flourishing

Flourishing Total			
Levene Statistic	**df1**	**df2**	**Sig.**
0.306	2	241	0.73

This test is one way of determining whether the variances between groups for the dependent variable are equal. Analysis showed that there was homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance ($p = 0.737 > 0.05$). With this condition being met, the ANOVA results were then analyzed for possible significance of differences between groups. The analysis indicated that there were no statistically significant differences in Flourishing Score between the different Facebook user groups (obsessive, moderate, and occasional), $F (2, 241)^{df} = 1.743$, $p = 0.177$ (see Table 4).

Table 4. ANOVA Results: Flourishing Total

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	115.191	2	57.596	1.743	0.177
Within Groups	7961.661	241	33.036		
Total	8076.852	243			

p = 0.177 > 0.05

Due to the lack of normality in the data, sensitivity analysis was performed using the Kruskal-Wallis test. This test is the non-parametric alternative to the one-way ANOVA and is used to determine whether there are any statistically significant differences between the distributions of three or more independent groups. The hypotheses for this test were as follows:

H_0: The distributions of scores in each group are the same

H_A: At least two of the groups differ with respect to location (median)

Results of the Kruskal-Wallis test showed that there were no significant differences in Flourishing Score between the different Facebook user groups, p (two-tailed) $= .602$. The results of both one-way ANOVA and Kruskal-Wallis tests indicate that the null hypothesis must be retained (i.e., there is no difference in the groups).

Facebook Frequency and Depression

A one-way ANOVA was also conducted to determine if the Depression Score was different for groups with different levels of Facebook use. There were 10 outliers, as assessed by boxplot, and one extreme outlier was removed from the dataset. The single outlier had a Depression Score value of 36, which was the highest possible value for this variable, and a Facebook Frequency score of 4 (i.e., logging on about every other day). Once this outlier was removed, the data were reassessed for outliers, and nine outliers remained. The mean Depression Score for the sample was 15, with a standard deviation of 4.73. Depression Scores ranged from 9 (the lowest possible score) to 33. The distribution was found to have a skewness score of 1.3 (SE = 0.15) and a kurtosis score of 1.93 (SE = 0.3). Data were not normally distributed for each group, as assessed by the Shapiro-Wilk test ($p < 0.05$). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = 0.901 > 0.05$).

As with the previous ANOVA analysis, participants were classified into six groups based on frequency of Facebook use (see previous section for a description); additionally, as before, groups 1–3 were removed from analysis due to the scarcity of data points within these groups. For the remaining groups of Facebook users, the mean Depression Score increased from group 4 (*M* = 14.55, *SD* = 4.19), to group 5 (*M* = 14.64, *SD* = 4.31), to group 6 (*M* = 15.2, *SD* = 4.63), in that order, but the differences between these Facebook user groups were not statistically significant, $F_{(2, 233)}^{df} = 0.504$, $p = 0.605$. The results of the one-way ANOVA are shown in Table 5.

Table 5. ANOVA Results: Depression Among Different User Groups

DepressionTOTAL

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	19.769	2	9.884	0.504	0.605
Within Groups	4574.040	233	19.631		
Total	4593.809	235			

p = 0.605 > 0.05

As with the analysis of Flourishing Score and Facebook frequency, sensitivity analysis was performed using the Kruskal-Wallis test to determine whether there were any statistically significant differences in Depression Score between the Facebook user groups. The hypotheses for this test were as follows:

H_0: The distributions of scores in each group are the same

H_A: At least two of the groups differ with respect to location (median)

Results of the test showed that there were no significant differences in Depression Score between the different groups, p (two-tailed) = 0.829. Again, the results of both the one-way ANOVA and Kruskal-Wallis tests indicate that the null hypothesis (i.e., there is no difference in the groups) must be retained.

Amount of Facebook Use and Flourishing

To assess this relationship, question 16, which asks participants about how long their typical Facebook session lasts, was renamed Facebook time and recoded as follows: group 1 = 1–30 minutes, group 2 = 31–60 minutes, group 3 = 61–90 minutes, and group 4 => 90 minutes. It should be noted that there were no data points in group 3, and only 4 data points in group 4.

After variable recoding, a one-way ANOVA was conducted to determine if the Flourishing Score was different for groups with different amounts of Facebook use (i.e., amount

of time spent using the site). For this procedure, the following hypotheses were formed:

H_0: All group means are equal

H_A: At least one group mean is different

There were eight outliers, as assessed by boxplot analysis; none of these outliers was considered extreme, so all data records were used for subsequent analysis. Data were not normally distributed for all groups, as assessed by Shapiro-Wilk test ($p = 0.000 < 0.05$ for group 1). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = 0.896$). With this condition being met, the ANOVA results were analyzed for possible significance of differences between groups. The analysis indicated that there were no statistically significant differences in Flourishing Score between the different Facebook user groups, $F (2, 252)^{df} = 1.315$, $p = 0.270$. Because there was no statistically significant difference between means ($p > 0.05$), the null hypothesis was retained. Results of sensitivity analysis using the Kruskal-Wallis test were as follows: p (two-tailed) $= 0.238 > 0.05$, which also indicated that the null hypothesis should be retained.

Amount of Facebook Use and Depression

The recoded variable Facebook time, mentioned in the previous section, was used in the following analysis. A one-way ANOVA was conducted to determine if the Depression Score was different for groups with different amounts of Facebook use. For this procedure, the following hypotheses were formed:

H_0: All group means are equal

H_A: At least one group mean is different

There were 11 outliers, as assessed by boxplot analysis. In attempt to normalize the data, the four most extreme outliers, which were clustered together, were removed, and the data were

reassessed for outliers. These extreme values were as follows: Depression Score = 36, 33, 33,

and 32 respectively; these data points were excluded from the ANOVA analysis. Data were not

normally distributed for all groups, as assessed by Shapiro-Wilk test ($p = 0.000 < 0.05$ for group

1). There was homogeneity of variances, as assessed by Levene's test of homogeneity of

variances ($p = 0.687$). With this condition being met, the ANOVA results were analyzed for

possible significance of differences between groups. The analysis indicated that there were no

statistically significant differences in Flourishing Score between the different user groups, $F(2,$

$242)^{df} = 0.670$, $p = 0.513$. Because there was no statistically significant difference between

means ($p > 0.05$), the null hypothesis was retained. Sensitivity analysis using the Kruskal-Wallis

test were as follows: p (two-tailed) $= 0.610 > 0.05$, which also indicated that the null hypothesis

should be retained.

Question 2. How do college students perceive their use of social media as it pertains

to their mental health and well-being? To determine students' perceptions of how social

media affects their mental health, study participants were asked the following question: Do you

feel that the amount of time you spend on social media websites has negatively affected your

mental well-being? Twenty three percent (n=57) of students answered yes to this question,

indicating that they did believe social media had a negative effect on their mental health.

Participants who answered in the affirmative were asked to briefly explain their answer; 36

respondents provided a brief explanation of their answer choice. This open-ended question

allowed the investigator to utilize both quantitative and qualitative data in answering the relevant

research questions.

In analyzing the qualitative data, the most common themes that arose were feelings of

depression or sadness after using social media, competition or comparison with others, and

feelings of guilt or regret over wasting time or not being sufficiently "productive." Additional themes that emerged included feeling a sense of "social disconnect" that left users feeling "left out" or "separate" from their friends, as well not getting enough sleep or not having adequate study time due to their extensive use of social media websites.

Question 3. How do students' perceptions about the effects of social media compare with their mental health scores? To address this question, participants were grouped based on their beliefs about whether social media had a negative effect on their mental health and well-being. Those who answered "yes" to question 28 (i.e., Do you feel that the amount of time you spend on social media websites has negatively affected your mental health?) were placed in group 1, and those who answered "no" were placed in group 2. The groups were then analyzed for differences in Flourishing Scores and Depression Scores. An independent-samples t-test was determined to be the most appropriate analysis for this question. The hypotheses for this test were as follows:

H_0: The population means of the two groups are equal (i.e., $\mu_1 = \mu_2$)

H_A: The population means of the two groups are not equal (i.e., $\mu_1 \neq \mu_2$)

An independent-samples t-test was run to determine if there were differences in Flourishing Score between groups 1 and 2. There were eight outliers in the data, as assessed by inspection of a boxplot; these outliers were not removed from the dataset prior to analysis because they were not extreme. Flourishing Scores for each group were not normally distributed, as assessed by Shapiro-Wilk test ($p < 0.05$), and there was homogeneity of variances, as assessed by Levene's Test for Equality of Variances ($p = 0.086$). The mean Flourishing Score was lower for group 1 (i.e., those who believed social media *did* have a negative effect on their mental well-being) ($M = 45.5$, $SD = 7.3$) than group 2 ($M = 47.6$, $SD = 5.6$), which was a statistically

significant difference ($M = 2.1$, 95% CI [0.3, 3.9], $t(241) = 2.3$, $p = 0.02$). Because there was a statistically significant difference between means ($p < 0.05$), the null hypothesis was rejected and the alternative hypothesis was accepted (i.e. the population means of the two groups were not equal). An identical t-test addressing participants' belief about social media and their Depression Scores was also performed, but it did not yield a statistically significant difference in Depression Scores between the two groups (p = 0.07).

Other Findings

The following section describes other study findings that do not directly address the research questions but are considered interesting or relevant.

Social Media and Physical Health

Among respondents who perceived social media as being detrimental to their mental health, 40.0% also believed that social media had a negative effect on their physical health. In comparison, only 11.0% of all study respondents believed that social media had a negative effect on their physical health. When asked to explain this belief, the most common themes that emerged were: not getting enough sleep, not exercising, and feeling stressed due to inadequate time management.

Other Social Media Websites

While the survey in this study was primarily focused on Facebook use, several questions addressed participants' use of other popular social media websites. Among those listed in the survey, the other most commonly used social media websites were: Twitter (54.5% had ever used), Instagram (52.1 % had ever used), and Google+ (48.1% had ever used). Further, 24.9% of respondents had ever used another social media website not mentioned in the survey; these

websites included reddit, Renren, and Vine, which were the three most frequent answers. These findings are discussed further in Chapter 5.

Interaction on Facebook—Groups

With regard to the groups of people that study participants reported interacting with on Facebook, the most commonly identified groups were: close friends (n=234), classmates (n=153), family (n=125), and casual friends (n=122). Conversely, few participants were found to be interacting with professors/teachers (n=6), co-workers (n=16), or supervisors/bosses (n=3). Interestingly, while the average number of relative strangers (i.e., people users don't know personally) in participants' Facebook networks was 98, very few participants were interacting with these individuals on a regular basis (n=7).

Summary

In order to quantify the relationship—if any—between social media use and mental health in the study population, data were obtained from a random sample of students via an online survey that addressed students' frequency of use, amount of use, and their perceived mental health and well-being. Data were exported from the Survey Monkey website and analyzed using SPSS statistical software. One-way ANOVA found no statistical relationship between Facebook use and mental health. However, an independent-sample t-test did determine a statistical relationship between participants' perceptions of their mental health and self-reported Flourishing Score. Other relevant findings were also discussed.

CHAPTER V: DISCUSSION

This chapter presents the conclusions drawn from survey findings, interpretations and discussion of quantitative and qualitative analyses, and subsequent recommendations for future health promotion activities at Emory. The findings of this survey highlight the importance of regular examination and assessment of students' needs when planning health promotion activities in a college population.

Interpretation and Discussion

Using SPSS statistical software, analyses were performed to identify any significant relationships between study variables. The interpretation of those test results is presented here.

Statistical Results—Facebook Use and Mental Health

An independent-samples t-test found a statistically significant difference ($p < 0.05$) between the mean Flourishing Scores of participants who believed social media is harmful to their mental health compared to individuals who did not believe social media is harmful to their mental health (for a full description of this grouping variable, see page 62, item 2828. These results suggest that students *may* perceive overuse of social media as detrimental to their mental health, and in fact, they may be correct about their beliefs; however, study limitations require caution with generalizing results to all students. For students who perceive overuse of social media as problematic, this could be a target area for future intervention by the Office of Health Promotion.

Conversely, results of several one-way ANOVA procedures suggest that, within the study sample, there is no relationship between Facebook use—both frequency and amount of time spent—and mental health (i.e., flourishing and depression). However, due to the categorical

rather than continuous nature of the independent variables—Facebook frequency and amount of Facebook use—correlation coefficients could not be calculated.

A Pearson correlation is most often used to discover the relationship between two variables. In this type of study design, there are two measured variables that are paired observations, and statistical analysis allows one to determine the strength of the linear relationship between these two paired variables, as was indicated by the original research questions. In calculating a Pearson correlation coefficient, it is assumed that (1) there is a linear relationship between the two variables, (2) there are no significant outliers, and (3) for statistical hypothesis testing, the data satisfies the assumption of bivariate normality. As presented in Chapter 4, study data did not appear to have a normal distribution, therefore the Pearson correlation might have been an inappropriate analysis.

Study results also suggest that Facebook use may be declining in this population. As previously mentioned, 51.6% (n=130) of Facebook users said that Facebook is less important to them now than it was a year ago. Similarly, 46.6% of users (n=118) said that their use of Facebook had decreased over the past year. However, due to study limitations, namely an insufficient sample size, it is not possible to extrapolate this data to the study population or to external populations.

Other Social Media Sites

Results from the study suggest that other social media websites, particularly Instagram and Twitter, may be gaining popularity among college students. These websites are more specialized for sharing certain types of media in the online social environment. On the company's website, Instagram is described as "a fun and quirky way to share your life with friends through a series of pictures. . . . [allowing users] to experience moments in your friends'

lives through pictures as they happen. We imagine a world more connected through photos"
(2013). Instagram allows users to apply a "filter" to their photos to enhance or otherwise alter
their photos before sharing them. Picture sharing seems to be growing in popularity, and this
may be an area for further studies on social media use in teens and young adults.

More similar to Facebook, "Twitter is a real-time information network that connects you
to the latest stories, ideas, opinions and news about what you find interesting…You can see
photos, videos and conversations directly in Tweets to get the whole story at a glance, and all in
one place" (Twitter, 2013a). The service has rapidly gained worldwide popularity since its
creation in 2006, with 500 million registered users in 2012, who posted 340 million tweets per
day (Lunden, 2012; Twitter, 2012). Twitter's growing popularity among teens and young adults
suggests that it too may play a role in the social and psychological development of these groups.

In terms of newer social media websites or applications, study results suggest that college
students may be expanding their use of social media even more by adopting new services such as
Vine. "Vine is a mobile service that lets you create and share short looping videos. Videos you
post to Vine will appear on your Vine profile and the timelines of your Vine followers. Posts
can also be shared to Twitter or Facebook" (Twitter, 2013b). So, it appears that multiple social
media websites and applications have become inextricably linked by creating multiple accounts
that can be linked together and used to share media (e.g., videos, pictures) to multiple sites
simultaneously. This will undoubtedly create difficulties in studying the phenomenon of social
media use as it relates to the mental health and well-being of users.

Another website mentioned by several study participants was Renren. This website has
been dubbed "The Chinese Facebook," and participants who identified this website as their
preferred social media site also identified themselves as Asian/Pacific Islander. It is unlikely that

this site will gain widespread popularity in the U.S., except perhaps among individuals who are native speakers of Chinese.

Among the websites identified by study participants, perhaps the most dissimilar to other social media sites is reddit. This website is a social news and entertainment website where registered users submit content in the form of either a link or a text post. Other users then vote the submission "up" or "down," which is used to rank the post and determine its position on the site's pages and front page. Content entries are organized by areas of interest called "subreddits" (reddit, 2013). The voting aspect of this site could possibly affect users' moods, and ultimately their mental health, based on the feedback—negative or positive—they receive from other users.

Lessons Learned

Following analysis of the study data, it is apparent that a continuous independent variable is more appropriate for answering the study's primary research questions. This might be accomplished by asking the same question in an open-ended manner or by designating a numerical response or dropdown menu within the survey (e.g., On average, how often do you log in to Facebook?). However, this type of question and answer structure would become problematic for capturing data on participants who login to Facebook more infrequently (e.g., less than once a day). In attempt to keep the attention of the study population and gather as many completed responses as possible, the survey tool was kept to a minimum in terms of the scope and the number of questions it contained. Further, respondents were not required to answer any of the survey questions, thus resulting in a number of incomplete records. Also, due to the small sample size, low response rate, possibility of recall bias, and lack of generalization, conclusions cannot be drawn regarding the study population.

Given the low response rate for this study, future studies might aim to include one or more of the following in their study design: a larger sample size, a longer time frame for data collection, a more extensive advertising campaign, and more—or more enticing—rewards and/or incentives. A larger scale study might be more feasible for an organization such as Office of Health Promotion, which has multiple resources, while the current study was self-funded by the investigator. Despite limitations such as small sample size, low response rate, recall bias, and lack of generalization, it is believed that this study has some merit and may be useful to the Office of Health Promotion at Emory. Students have identified social media overuse as a potential problem that negatively influences their mental health, and this issue should be further explored.

Conclusions and Recommendations

The goal of this study was to gain a better understanding of the role that social media plays in shaping the mental health and well-being of college students. Periodic evaluation of students' self-identified barriers to success (e.g., internet use, depression), as identified by the ACHA-NCHA, is an important part of health promotion at the university level. The leading principles of the Office of Health Promotion's programs address the holistic health and wellness needs of Emory's students in a variety of contexts. Accordingly, instituting a university-wide, comprehensive health promotion program is best accomplished by effectively evaluating the needs of the target population and instituting clear goals for the program. An effective promotion strategy is also essential, as the most exceptional or innovative health programs are useless without the active engagement of the target population (i.e., students).

It is recommended that the Office of Health Promotion continue to conduct periodic studies which assess the changing needs of the student population. As previously discussed, the

emergence of new technologies may lead to a change in students' level of online engagement or other behaviors, thus necessitating further assessment of this important issue.

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20 U.S.C. § 1232g; 34 CFR Part 99

Appendix A. Social Media Use and Mental Health Survey

BEGIN SURVEY

Demographic Questions

1. **What is your current age?**

   o Under 18
   o 18-19
   o 20-21
   o 22-24
   o 25 and above

2. **What is your gender?**

   o Female
   o Male
   o Transgender
   o Prefer not to respond

3. **What is your class status?**

   o Freshman
   o Sophomore
   o Junior
   o Senior
   o Graduate/Professional student
   o Other

4. **Which race or ethnicity do you most identify with?**

   o African American/Black
   o Asian/Pacific Islander
   o Hispanic/Latino
   o Multiracial
   o Native American/American Indian
   o White/Caucasian
   o Other/Not Listed (please specify)_____
   o Prefer not to respond

5. **Which of the following are applicable to your living situation? (Check all that apply)**

   o I live alone
   o I live with other students
   o I live with roommates who are not students

- o   I live with parents(s), relative(s), or guardian(s)
- o   I live with a husband/wife/domestic partner/significant other
- o   I live with my child/children.

Mental Health and Flourishing

The Flourishing Scale consists of eight items describing important aspects of human functioning ranging from positive relationships, to feelings of competence, to having meaning and purpose in life. The scale was called Psychological Well-being in an earlier publication, but the name was changed to more accurately reflect the content because the scale includes content that goes beyond psychological well-being narrowly defined.

FLOURISHING SCALE (Diener, et al., 2009)

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6. **Below are 8 statements (a-h) with which you may agree or disagree. Using the options below, indicate your agreement with each item by indicating that response for each statement.**

   Options: 7-Strongly Agree; 6-Agree; 5-Slightly Agree; 4-Neither Agree nor Disagree;

   3-Slightly Disagree; 2-Disagree; 1-Strongly Disagree

a. I lead a purposeful and meaningful life_____

b. My social relationships are supportive and rewarding_____

c. I am engaged and interested in my daily activities_____

d. I actively contribute to the happiness and well-being of others_____

e. I am competent and capable in the activities that are important to me_____

f. I am a good person and live a good life_____

g. I am optimistic about my future_____

h. People respect me_____

Scoring: Add the responses, varying from 1 to 7, for all eight items. The possible range of scores is from 8 (lowest possible) to 56 (highest PWB possible). A high score represents a person with many psychological resources and strengths.

Patient Health Questionnaire-9 (PHQ9)
(Young & Rogers, 1998)

7. Over the *last 2 weeks*, how often have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
a. Little interest or pleasure in doing things	1	2	3	4
b. Feeling down, depressed, or hopeless	1	2	3	4
c. Trouble falling or staying asleep, or sleeping too much	1	2	3	4
d. Feeling tired or having little energy	1	2	3	4
e. Poor appetite or overeating	1	2	3	4
f. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	1	2	3	4
g. Trouble concentrating on things, such as reading the newspaper or watching television	1	2	3	4
h. Moving or speaking so slowly that other people could have noticed? Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual	1	2	3	4
i. Thoughts of hurting yourself in some way	1	2	3	4

FOR OFFICE CODING   *0* + _____ + _____ + _____
=*Total Score: _____

*Scoring: Add the responses, varying from 1 to 4, for all nine items. The possible range of scores is from 9 (lowest possible) to 36 (highest possible). A high score represents a person who <u>may</u> be suffering from depression.*Clinical diagnosis is necessary for this determination.*

8. If you checked off *any* of the problems mentioned in the previous question (7a-i), how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

Internet & Social Media Use (ISM)

(some questions _adapted_ from (Rajani, et al., 2011)

9. **Do you use the Internet, at least once a week?**

   o   Yes
   o   No (if no, skip to end of survey)

10. **Do you send or receive email, at least once a week?**

   o   Yes
   o   No

11. **Do you access the Internet on a cell phone, tablet or other mobile handheld device, at least once a week?**

   o   Yes
   o   No

12. **Do you ever use Facebook?**

   o   Yes
   o   No (If no, skip to question 24)

13. **Have you ever voluntarily taken a break from using Facebook for a period of one week or more?**
   o   Yes
   o   No (if no, skip to question 15)

14. **If answered yes to question 15, which statement best describes your reason from taking a break from Facebook?**

   o   Was too busy / Didn't have time for it
   o   Just wasn't interested / Just didn't like it
   o   Waste of time/content was not relevant
   o   Too much drama/gossip/negativity/conflict
   o   Was spending way too much time using the site
   o   Only intermittent or infrequent user
   o   Went on vacation/trip/deployment
   o   Just got tired/bored with it
   o   No real reason/just because
   o   Concerns about privacy/security/ads/spam
   o   Did not have computer/Internet access
   o   Prefer other ways to communicate/Facebook is not "real life"

o   Health or age issues
o   Took a break for religious reasons
o   Didn't like posting all the time / Didn't want to share
o   Other (Please explain briefly)_____

15. On average, how often do you login to/use Facebook?

o   5 or more times a day
o   1-4 times a day
o   Every other day
o   Once a week
o   Once or twice a month
o   Less than once a month

16. When you use Facebook, about how long do you *typically* spend on the site?

o   Less than 5 minutes
o   5-10 minutes
o   11-30 minutes
o   31-60 minutes
o   61-90 minutes
o   Over 90 minutes

17. When you use Facebook, about how long do you spend *actively* chatting, posting, or otherwise interacting on the site?

o   Less than 5 minutes
o   5-10 minutes
o   11-30 minutes
o   31-60 minutes
o   61-90 minutes
o   Over 90 minutes

18. When you use Facebook, about how many people do you *typically* interact with on the site (through chatting, posting, messaging, etc.) during a given session?
_____

19. When you use Facebook, who are you interacting with? (Choose all that apply)

o   Close friends
o   Casual friends
o   Classmates
o   Boyfriend or Girlfriend/Spouse/Significant other
o   Family

o   Other Acquaintances
o   Coworkers
o   Professors/teachers
o   Boss/supervisor
o   People I only know through Facebook (i.e. never met in person)

20. Looking at your Facebook profile, how many Facebook friends do you have? _____

21. About how many of your Facebook friends do you NOT know personally (e.g. friends of friends, someone you have never met in person, etc.)?_____

22. Thinking about the impact of Facebook on your life overall, would you say that over the last year Facebook has become MORE important to you, LESS important to you, or that it is about as important as it was a year ago?

o   More important
o   Less important
o   As important
o   Using Facebook less than one year

23. And over the last year, would you say that the amount of time you spend using Facebook on a typical day has

o   Increased
o   Decreased
o   stayed about the same

24. Please tell me if you ever use the Internet to do any of the following things. Do you ever…

	Ever Done This	Did Yesterday	Did in the past 7 days	Did in the past 30 days	Have Not Done This	Don't Know/Refuse
a. Use LinkedIn?						
b. Use Google+?						
c. Use Twitter?						
d. Use Tumblr?						
e. Use Flickr?						
f. Use Instagram?						
g. Use Pinterest?						

25. If you use one or more social networking websites, do you have a preferred website?

- o   Yes
- o   No (if no, skip to end of survey)

26. If you answered "yes" to the previous question, what is your preferred social media website?

- o   Facebook
- o   Google+
- o   LinkedIn
- o   Twitter
- o   Tumblr
- o   Flickr
- o   Instagram
- o   Pinterest
- o   Other (please specify) _____

27. Do you feel that the amount of time you spend on social media websites has negatively affected your physical health?

- o   N
- o   Y; Please explain.

28. Do you feel that the amount of time you spend on social media websites has negatively affected your mental well-being?

- o   N
- o   Y; Please explain.

END OF SURVEY

Appendix B. IRB Approval Letter

EMORY
UNIVERSITY | Institutional Review Board

TO: Rebecca Meador

        Principal Investigator
        Biology

DATE: September 23, 2013

RE: **Expedited Approval**
        IRB00069049
        THE EFFECTS OF SOCIAL MEDIA USE ON THE MENTAL HEALTH AND
        WELL-BEING OF COLLEGE STUDENTS

Thank you for submitting a new application for this protocol. This research is eligible for
expedited review under 45 CFR.46.110 and/or 21 CFR 56.110 because it poses minimal risk
and fits the regulatory category F7 as set forth in the Federal Register. The Emory IRB
reviewed it by expedited process on 9/19/2013 and granted approval effective from
9/19/2013 through **9/18/2014**. Thereafter, continuation of human subjects research activities
requires the submission of a renewal application, which must be reviewed and approved by the
IRB prior to the expiration date noted above.

The following documents were included in this review:

- Protocol, version date 8/23/2013
- Survey, version date 9/4/2013
- Recruitment email, version date 9/4/2013

Any reportable events (e.g., unanticipated problems involving risk to subjects or others,
noncompliance, breaches of confidentiality, HIPAA violations, protocol deviations) must be
reported to the IRB according to our Policies & Procedures at www.irb.emory.edu,
immediately, promptly, or periodically. Be sure to check the reporting guidance and contact us
if you have questions. Terms and conditions of sponsors, if any, also apply to reporting.

Before implementing any change to this protocol (including but not limited to sample size,
informed consent, study design), you must submit an amendment request and secure IRB
approval.

In future correspondence about this matter, please refer to the IRB file ID, name of the
Principal Investigator, and study title. Thank you.

Martha C. Patterson
Research Protocol Analyst
This letter has been digitally signed

CC: There are no items to display

            There are no items to display

Appendix C. Recruitment Email

Dear Student,

You have been selected to participate in an online survey about social media use and mental health. This is part of an MPH thesis project that is being supervised by Daniel C. Rutz and Dr. Iris Smith.

Participation in this survey is completely voluntary.   To ensure confidentiality, codes will be assigned to your answers and will be used on study records wherever possible. Emory will keep any research records that result from this study private to the extent we are required to do so by law. Your name and other facts that might point to you will not appear when we present this study or publish its results.

Completing the survey is estimated to take you about 15-20 minutes. After completing the survey, you will be eligible to enter a drawing to win 1 of 2 $50 Visa gift cards. (Winners will be notified via email by October 18 if they chose to participate in the drawing.)

You do not have to respond if you are not interested in this study. If you do not respond, no one will contact you, but you may receive another email which you can simply disregard.
By clicking on the following link, you are indicating your willingness to participate in this survey:

<div align="center">

https://www.surveymonkey.com/s/SocialMedia_Survey_Emory

</div>

If you choose to participate, we would appreciate a reply by October 3, 2013. You may receive one reminder email before the return deadline. If you have any queries please do not hesitate to contact me.

> Rebecca Meador
> MPH Student in Prevention Science
> Rollins School of Public Health
> Tel: 404-727-2294
> Email: rschlis@emory.edu

In anticipation, I wish you sincere thanks for your valued response.

Sincerely,

Rebecca Meador

Appendix D. Reminder Recruitment Email

Dear Student,

This is a **reminder email** that you have been selected to participate in an online survey about social media use and mental health. This is part of an MPH thesis project that is being supervised by Daniel C. Rutz and Dr. Iris Smith. **If you have already responded to this survey, thank you for your participation.** You do not need to do anything further.

Completing the survey is estimated to take you about 15 - 20 minutes. After completing the survey, you will be eligible to enter a drawing to win 1 of 2 $50 Visa gift cards. (Winners will be notified via email by October 18 if they chose to participate in the drawing.)

Participation in this survey is completely voluntary.   To ensure confidentiality, codes will be assigned to your answers and will be used on study records wherever possible. Emory will keep any research records that result from this study private to the extent we are required to do so by law. Your name and other facts that might point to you will not appear when we present this study or publish its results.

You do not have to respond if you are not interested in this study. If you do not respond, no one will contact you. You may receive another reminder email which you can simply disregard.

By clicking on the following link, you are indicating your willingness to participate in this survey:

https://www.surveymonkey.com/s/SocialMedia_Survey_Emory

If you choose to participate, we would appreciate a reply by October 3, 2013. If you have any queries please do not hesitate to contact me.

    Rebecca Meador
    MPH Student in Prevention Science
    Rollins School of Public Health
    Tel: 404-727-2294
    Email: rschlis@emory.edu

In anticipation, I wish you sincere thanks for your valued response.

Sincerely,

Rebecca Meador