TRAIT MINDFULNESS, FACEBOOK USE, LIFE SATISFACTION, AND WELL-BEING

BY

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Abstract

Facebook use is a regular part of the daily lives of many college students. The initial research in this area indicates that social media can be both beneficial and harmful to overall well-being, with some studies indicating that factors such as how social media is used may play an important moderating role between social media use and well-being outcomes. Given the prevalence of Facebook use in daily life, it is important for counseling psychologists to understand the relationship of Facebook use to well-being and life satisfaction. Research indicates that a higher level of dispositional mindfulness might be particularly helpful in fostering positive outcomes of social media use, but no previous studies have directly addressed this question with college students. This study used a correlational design to investigate the relationships among trait mindfulness, Facebook use, life satisfaction, and well-being in college students. Participants were 101 undergraduate students from Kansas and Colorado. Multiple regression analyses were conducted to evaluate the relationships among the variables. Findings indicated no relationship between Facebook use and measures of well-being, and replicated previous findings that level of mindfulness is positively associated with measures of life satisfaction and well-being. Mindfulness did not serve as a moderating variable in predicting well-being and life satisfaction. Implications for practice and research are discussed.

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Chapter 1: Introduction

Significant advances in technology that impact daily life are often met with concerns about their impact on psychological well-being. Research indicates that there is an upward trend in the frequency of use of social media among people of all ages. A recent Pew Charitable Foundation research report on social media use found that in 2015, 65% of American adults used social networking sites, up 7% from 2005 (Perrin, 2015). The spread of social media has impacted the way information is disseminated and has influenced communication patterns around the world (Gottfried & Shearer, 2016; Duggan, Ellison, Lampe, Lenhart, & Madden, 2015; Perrin, 2015). With social media becoming so pervasive in human life and culture, and with the rapid advancement of technology, it has become increasingly important for counseling psychologists to understand the effects of social media use on psychological well-being.

The initial research in this area indicates that social media can be both beneficial *and* harmful. Social media use is associated with positive outcomes such as increased levels of well-being (Kim & Lee, 2011; Liu & Yu, 2013; Valenzuela, Park, & Kee, 2009), life satisfaction (Manago, Taylor, & Greenfield, 2012; Nabi, Prestin, & So, 2013), self-esteem (Valkenburg, Peter, & Schouten, 2006), social support (Liu & Yu, 2013; Nabi et al., 2013), social trust, civic engagement, and political participation (Valenzuela et al., 2009). Conversely, social media use is also related to addictive behaviors (e.g., Facebook addiction; Griffiths, Kuss, & Demtrovics, 2014), impaired academic performance (Kirschner & Karpinkski, 2010), cyberbullying (Walker, Sockman, & Koehn, 2011), increased depression (Moreno et al., 2011), feelings of envy (Tandoc, Ferrucci, & Duffy, 2015) and lower levels of well-being (Sagioglou & Greitemeyer, 2014). Other studies indicate that factors such as *how* social media is used may play an important moderating role between social media use and well-being outcomes (Burke & Kraut, 2016;

Burke, Marlow, & Lento, 2010). For example, primarily observing Facebook content without interacting through comments and messages (i.e., surveillance use) can promote feelings of envy in users as opposed to using the site in a more active manner to connect with close friends through messages and updates (Tandoc, Ferrucci, & Duffy, 2016).

One of the populations most impacted by social media use is college students. As Tess (2013) explains, "The ubiquity of social media is no more apparent than at the university where the technology is transforming the ways students communicate, collaborate, and learn." The Pew Charitable Foundation found that 18-29 year olds are more likely to use social media than any other age group, with 90% of this population utilizing some form of social media. In addition to age, education also seems to predict social media use, as it was discovered that those with at least some higher education are more likely to use social media than those with a high school degree (Perrin, 2015). One of the most popular social media sites to date is Facebook, used by 92% of adult social media users (Perrin, 2015). As of June 2016, Facebook reported 1.13 billion daily users, with a majority of those users being college students (Facebook Newsroom, 2016).

Given the prevalence of Facebook use in daily life, it seems important to investigate ways to mitigate the potentially negative impact of Facebook use on the psychological well-being of college students and increase Facebook use behaviors associated with improved psychological well-being. In order to make informed recommendations to clients, counseling psychologists must first understand the individual factors that impact Facebook use outcomes.

One such factor that is currently of great interest to the psychological community is mindfulness. Mindfulness is generally defined as "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally" (Kabat-Zinn, 1994). To date, very few studies have examined mindfulness as it relates to social media use. Shonin, Van Gordon, and

Griffiths (2014) assert that the attentional strategies one uses while on social media are crucial in determining whether social media use becomes helpful or harmful. While mindful attention shares overlap with measures of attentional control, aspects of meta-awareness and receptivity to ongoing happenings are unique to mindfulness (Quaglia, Brown, Lindsay, Creswell, & Goodman, 2015). This is evidenced by the fact that measures of mindfulness predict outcomes over and above measures of attention (Quaglia, Goodman, & Brown, 2014; Brown, Goodman, & Inzlicht, 2013). Mindfulness has been linked with improvements of factors associated with negative outcomes of Facebook use. For example, more mindful individuals exhibit greater emotional intelligence, positive affect, and autonomy; and lower levels of depression, anxiety, and negative affect (Brown & Ryan, 2003). Based on these substantial benefits that improve psychological well-being it seems that a higher level of dispositional mindfulness might be particularly helpful in fostering positive outcomes of social media use (Brown & Ryan, 2003). Lending support to this notion, Charoensukmonkol (2015) found that mindfulness mediates the effects of social media use at work on burnout, such that using social media during work was associated with greater levels of burnout in employees with low levels of mindfulness, but appeared to reduce burnout in employees with higher levels of trait mindfulness.

The purpose of this paper is to propose a study that investigates the relationships among trait mindfulness, Facebook use, life satisfaction, and well-being in college students. This study adds to the limited amount of research on the topic of social media and mindfulness, and will inform future research in this area. Further, it is hoped that this information will help counseling psychologists in their work to assist college students to utilize Facebook in helpful rather than harmful ways.

Chapter 2: Review of the Literature

Well-being

For much of psychology's history, the medical model guided conceptualizations of health, by emphasizing pathology and the reduction of disease and disability (Snyder, Lopez, & Pedrotti, 2011). Over the past 20 years, a growing interest in the various dimensions of health and well-being beyond those described in the medical model has developed, and the research investigating the promotion of well-being has grown significantly (Donaldson, Dollwet, & Rao, 2015). A number of approaches for measuring well-being have emerged, and to date there continues to be a great deal of disagreement regarding which measure is most useful (Cooke, Melchart, & Connor, 2016).Cooke et al. (2016) critically reviewed 42 different well-being measures and found four categories of well-being conceptualizations: *hedonic* (i.e., emphasis on pleasure and happiness), *eudaimonic* (i.e., flourishing, fulfilling one's potential, living a meaningful life), *quality of life* (a broader conceptualization including physical, psychological, and social aspects of functioning), and *wellness* (very broad conceptualization including holistic lifestyle and multiple areas of health and functioning). The authors concluded that while consensus is lacking, a central component of all four categories was "interest in the positive dimension of human experience and functioning" (p.733). The authors stated that measures of life satisfaction (e.g., Satisfaction With Life Scale; Diener et al., 1985) are useful because they allow the respondents to define the construct for themselves, rather than relying on researcher definitions; however, this makes it difficult to understand what exactly is being measured. Cooke et al. suggest that those hoping to investigate specific aspects of well-being (e.g., psychological, social, physical, etc.) can choose from a number of well-validated measures that address the particular aspect under investigation.

Keyes and Magyar-Moe (2003) argue that there are two primary lines of thinking when it comes to the measurement of well-being within the research literature. The first line emphasizes *emotional well-being* as indicated by perceptions of one's life overall and level of positive affect experienced. The second focuses on various dimensions of *positive functioning* as they relate to psychological and social well-being.

Based upon the findings of Cooke et al. (2016) and the theory of Keyes and Magyar-Moe (2003), this study will use both a measure of life satisfaction (The Satisfaction With Life Scale (SWLS); Diener et al., 1985) and a measure of psychological well-being (Ryff's Scales of Psychological Well-being (RPWB); Ryff, 1989; 1995) in order to obtain a comprehensive picture of well-being in college students. Both the SWLS and RPWB are frequently used within the psychological literature, and both show good reliability (see Measures section for further information; Pavot & Diener, 1993; Diener, Emmons, Larson, & Griffin, 1985; and Keyes & Ryff, 1998).

Life Satisfaction   Within the psychological literature, life satisfaction is described as a subjective measure of personal appraisal of one's life overall. It represents a long-term experience, and requires that one think about his/her quality of life based upon whatever criteria he/she believes to be important. Diener, Emmons, Larsen, and Griffen (1985) stress the importance of the subjective nature of life satisfaction, explaining, "the judgment of how satisfied people are with their present state of affairs is based on a comparison with a standard which each individual sets for him or herself" (p.71). Measuring life satisfaction is useful in helping us to understand the varying factors that contribute to well-being.

Psychological Well-being   Psychological well-being pertains to the degree of self-development one has achieved. Ryff's Scales of Psychological Well-being (RPWB) measure six

distinct dimensions of psychological well-being: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth, (Ryff 1989; 1995).

      Predictors of Well-being   For the purposes of this review, well-being will refer to a combination of psychological well-being and life satisfaction, because many measures use both constructs to encompass all aspects of well-being. High levels of well-being in college students are associated with greater feelings of self-efficacy and self-esteem, increased hope, social support, academic success, and reduced levels of depression and anxiety. Because of the positive outcomes associated with increased well-being, a primary role of counseling psychologists in university and college settings is to work with students to improve levels of well-being.

Social Media & Facebook

      The term *social media* encompasses a broad array of media types. The Merriam Webster Dictionary defines social media as "forms of electronic communication (such as Web sites) through which people create online communities to share information, ideas, personal messages, etc." The concept of social media as we know it today, developed approximately 25 years ago with the advent of an online journaling community called "Open Diary" (Kaplan & Haenlein, 2010). Around this time, the term *weblog* (eventually shortened to *blog*) appeared as a term to describe the public sharing of personal thoughts, feelings, stories, etc. via the internet (Kaplan & Haenlein, 2010). Eventually, the meaning of the term social media broadened to include other forms of communication beyond blogs, such as email, photo and video sharing websites (e.g., YouTube), instant messaging, chat rooms, and social network sites (e.g., MySpace and Facebook) (Subrahmanyam, Reich, Wachter, and Espinoza, 2008). By the early 2000's, with high-speed internet becoming more widely available, the popularity of social media, particularly social networking sites, boomed (Boyd & Ellison, 2007).

Social network sites (SNSs), a subset of social media, were described in 2007 by Ellison,

Steinfield, and Lampe as public internet services that "allow individuals to present themselves,

articulate their social networks, and establish or maintain connections with others" (pp. 1143).

Boyd and Ellison (2007) argued that SNSs are not simply websites that enable users to meet

strangers, rather, they offer a unique opportunity for users to share and display their social

networks with people they already know allowing for the discovery of mutual relationships. In

order to fully understand and define social media, it is important to understand the term *Web 2*.0.

This term describes a process of internet use whereby web content and applications are

continuously and collaboratively modified over time (Kaplan & Haenlein, 2010). This contrasts

with *Web 1.0* which describes internet content created and published by individual entities. Over

time as new components were added, the primary purposes and uses of SNSs evolved, and in

2013, Ellison and Boyd felt it necessary to redefine the term within the context of Web 2.0:

> A social network site is a *networked communication platform* in which participants 1)
>
> have *uniquely identifiable profiles* that consist of user-supplied content, content provided
>
> by other users, and/or system-level data; 2) can *publicly articulate connections* that can
>
> be viewed and traversed by others; and 3) can consume, produce, and/or interact with
>
> *streams of user-generated content* provided by their connections on the site (p. 158).

The differences between what might be considered social media, but not considered a SNS are

nuanced, and the two terms frequently are used interchangeably within the research literature.

Defining social media and SNSs is challenging because they are in a continual state of change

(Tess, 2013). As social media and SNSs evolve, so too will the descriptions of these

technologies.

The Internet Project, an initiative of the Pew Charitable Foundation Research Center, has studied the use of social media since 2005. The Pew Charitable Foundation Research Center is self-described as a "fact tank that informs the public about the issues, attitudes, and trends shaping America and the world" while maintaining a nonpartisan policy position (Perrin, 2015, p. 1). According to the most recent Pew Charitable Foundation research report on social media, 76% of adult internet users, utilize social networking sites, and most (72%) use Facebook (Perrin, 2015). Coming in a distant second place to Facebook, 25% of adult internet users report using the SNS LinkedIn. Use of SNSs among adults continues to show an upward trend, with 65% percent of *all* American adults (i.e., both those who use the internet and those who do not use the internet) using SNSs in 2015, a 7% increase from 2005 (Perrin, 2015). Age appears to be a significant predictor of social media use, as young adults (ages 18-29) are by far the largest consumer group of social media, with 90% using some form of social media, up 78% from use in 2005 (Perrin, 2015). Level of education seems also to be a predictor, as 70% of adults with at least some college education use social media, compared to only 54% of adults with a high school diploma or less (Perrin, 2015). PEW data from 2009 to 2013 suggested that women were more likely to use SNSs than men, however; more recent polls indicate that this difference is becoming more modest, with 68% of all women using some form of SNS compared to 62% of all men in 2015 (Perrin, 2015). Additionally, racial and ethnic differences do not appear to noticeably impact use of SNSs (Perrin, 2015). Gender differences of SNS use become somewhat more apparent when examining use of specific SNS, with more women reporting use of sites such as Facebook, Pinterest, and Instagram than men (Duggan, Ellison, Lampe, Lenhart, Madden, 2015). Similarly, racial and ethnic differences vary depending on the particular SNS examined. For example, there do not appear to be significant differences of Facebook use based

upon race/ethnicity, however; Hispanic and African American populations use Instagram more than those identifying as white, and Pinterest users are more likely to be white (Duggan, Ellison, Lampe, Lenhart, Madden, 2015).

Facebook   The most pervasive SNS to-date is undoubtedly Facebook. Facebook is a free SNS that enables users to create profiles, participate in online groups, set up events, send messages, and post photos, videos, updates, and links. Facebook has been described as the "face of online social networks," and with approximately 92% of SNS users possessing a Facebook account (more than any other SNS), this designation seems fitting (Tess, 2013, p. A61; Rainie, Smith, & Duggan, 2013). As of June 2016, Facebook had 1.13 billion daily users and 1.71 billion monthly active users (Facebook Newsroom, 2016). PEW polling results from 2013 and 2014 indicate that women are slightly more likely than men to use Facebook with 77% of women reporting use of Facebook compared to 66% of men.

According to Ryan, Chester, Reece, and Zenos (2014), the most commonly reported reasons adults use Facebook are to maintain relationships, as a form of entertainment/way to pass the time, and for companionship. Similarly, for college students, Facebook provides an efficient and immediate method for communication with friends and family, as well as a way to receive the support and approval of others (Urista, Dong, & Day, 2009). Through the online communication platform of Facebook, college students are able to connect with other students in order to organize events such as service-learning projects, and to create shared interest groups (Dalton & Crosby, 2013). Additionally, a 2016 Pew Charitable Foundation report on the use of social media for news consumption, indicates that 66% of adult SNS users use Facebook to stay informed about current events (Gottfired & Shearer).

Psycho-Social Aspects of Facebook Use   The range of activities one can engage in on Facebook has grown significantly since its inception in 2004. The rapid pace of change makes it difficult for researchers to come to a consensus about categories of Facebook activity, and how these activities impact psychological processes. Such categories are important, because they help to guide research questions and refine methods for measuring Facebook use and its impacts on users. Beyond simply categorizing Facebook activities, understanding the thoughts, emotions, motives, and self-conceptions associated with Facebook use is important in helping researchers to formulate a more comprehensive understanding of the site and its impact on psychological well-being. Instruments that attempt to measure the internal processes and behaviors associated with Facebook are rare, and a common issue for researchers interested in measuring Facebook use is the need for reliable and valid measures. Recently, Bodroza and Jovanovic (2016) created a more comprehensive measure that explores the deeper psychological processes associated with Facebook use. They discovered five factors of psychological aspects of Facebook use: *Compensatory use of Facebook, self-presentation on Facebook, socialization and seeking sexual partners on Facebook, Facebook addiction, and Facebook profile as the virtual self.* Compensatory use of Facebook refers to use of Facebook as a way to offset feelings of personal insecurity and feelings of inadequacy. Individuals who score high on this factor find it easier to communicate and find acceptance on Facebook than in their non-virtual life. Self-presentation on Facebook refers to the use of photos and timeline posts to depict oneself in a favorable light. The factor socializing and seeking sexual partners through Facebook measures behaviors used to develop friendships, and/or develop intimate relationships through Facebook and other forms of communication such as phone, Skype, or text messaging. Finally, Facebook profile as the virtual self describes feelings that one's Facebook presentation is an accurate representation of oneself.

College Student Facebook Use & Activities   Approximately 90% of college

students reported using Facebook in 2011 (Dahlstrom, Grunwald,de Boor, & Vockley, 2011). A

more recent poll published in 2015 showed similar findings with 92% of college students

reporting use of Facebook (eMarketer, 2015). It seems that despite an influx of alternate SNSs to

choose from over the past 5 years, and news reports that Facebook's popularity is declining

among young adults, an overwhelming majority of college students still utilize this SNS (Lang,

2015; Dahlstrom et al. 2011). A contributing factor to increased SNS use is the convenience of

access. Now that Facebook can be used from smartphones, students are able to check Facebook

no matter where they are. Over the years, studies have found that the average Facebook user

spends between 20 – 140 minutes on Facebook each day, with college students spending the

most time on the site (Valenzuela, Park, & Kee, 2009; Denti et al., 2012; Junco & Cotton, 2012;

Junco, 2012). According to a study of 5,414 college students by Junco (2012), undergraduates

spend an average of 100 minutes per day on Facebook, and check Facebook on average between

5-6 times each day (Junco, 2012). Students use Facebook from their phones, home computers,

school computers, and tablets. Roberts, Yaya, and Manolis (2014) surveyed 164 college students

and found that they spend an average of 39 minutes using Facebook from their phones each day

(this study did not take into account Facebook use on tablets or computers). The prevalence of

Facebook use among college students has caused researchers to examine potential benefits and

drawbacks associated with its use, resulting in mixed findings.

Facebook Use & Well-being

Research on the impact of Facebook use on outcomes related to well-being has resulted

in inconsistent findings. Some studies report positive associations between Facebook use and

factors associated with well-being, while others report the opposite. Additionally, a number of

studies indicate that well-being outcomes are influenced by moderating factors. This section

presents a review of the outcome research on Facebook use and factors associated with well-

being.

      Self-Esteem & Social Support   A number of studies on Facebook use and factors

such as self-esteem and social support have found evidence that use of Facebook can contribute

to well-being. The size of one's Facebook friend group is associated with increased perceived

social support (Kim & Lee, 2011; Manago, Taylor, & Greenfield, 2012; and Nabi, Prestin, & So,

2013). Nabi, Prestin and So (2013) asked 401 undergraduate Facebook users to take an online

survey to assess physical illness, perceived stress, stressful life events, Facebook use, social

network size, perceived social support, and life satisfaction. Results indicated that number of

Facebook friends was positively associated with perceptions of social support, which

subsequently, was associated with greater life satisfaction (as measured by the Satisfaction with

Life Scale; Diener, Emmons, Larson, & Griffin; 1985). When interpersonal network size was

controlled for, the effect was minimized. This was not the case, however, for individuals who

reported experiencing more objective life stressors, as number of Facebook friends continued to

predict perceived social support even when interpersonal network size was accounted for. These

findings support the idea that number of Facebook friends can be beneficial to well-being among

individuals experiencing high levels of stress.

      A similar study by Kim and Lee (2011) of 391 college Facebook users found that number

of Facebook friends and projecting a positive self-presentation on Facebook were both positively

associated with subjective well-being (as measured by the Subjective Happiness Scale; Cohen &

Hoberman, 2006). In light of these findings, the authors propose that the positive relationship

between Facebook friends and well-being could be a result of students being visually reminded of friendships when they use Facebook, which would in turn, increase feelings of self-worth.

The number of people a Facebook user expects will view his/her status updates and posts also might contribute to levels of well-being. Manago, Taylor, & Greenfield (2012) found the same positive relationship between number of Facebook friends and life satisfaction as the aforementioned studies; however, they argue that this relationship might be mediated by estimated audience. In their sample of 88 undergraduate Facebook users, those users who estimated higher numbers of Facebook friends reading their status updates showed higher levels of life satisfaction, even after controlling for self-esteem. The authors posit that large Facebook social networks fulfill human psychosocial needs to feel noticed and appreciated. When friends comment on or "like" an individual's post, it validates these psychosocial needs. This theory aligns with the findings of Valkenburg, Peter, and Schouten (2006) that when adolescents receive positive feedback on their Facebook profile, it enhances their self-esteem and well-being.

Another aspect of Facebook that impacts user's well-being is Facebook intensity. Ellison, Steinfield, & Lampe (2007) describe Facebook intensity as a measure of Facebook use that incorporates not only frequency and duration of use, but also emotional connectedness to Facebook and the degree to which Facebook has become a daily part of one's life. Similar to number of Facebook friends, Facebook intensity is associated with positive outcomes such as increased online social support, general social support, and life satisfaction (Liu & Yu, 2013; Valenzuela, Park, & Kee, 2009).

Research indicates that social support plays an important role in maintaining mental and physical health, by reducing feelings of psychological distress (Dean & Lin, 1977; and Albrecht & Adelman, 1984). A study by Liu and Yu (2013) investigated the relationships among

Facebook use, online social support, general social support, and psychological well-being. The researchers surveyed 330 Taiwanese college students using the Facebook Intensity Scale (FBI, Ellison et al., 2007), Interpersonal Support Evaluation List (ISEL, Cohen & Syme, 1985), and Ryff's scales of psychological well-being (Ryff & Keyes, 1995). They found that Facebook use was a significant predictor of online social support, and online social support was a significant predictor of general social support. These findings suggest that using Facebook may help college students to obtain online social support, which is an extension of general social support. Further, results indicated that online social support is not directly related to well-being, rather general social support seems to mediate the relationship between online social support and well-being. Based upon these findings, the authors suggest that college students with difficulty interacting socially may benefit from initiating social interactions with others on Facebook.

Valenzuela, Park, and Kee (2009) surveyed 2,603 college students across the state of Texas and found that intensity of Facebook use was positively associated not only with students' life satisfaction, but also with measures of social trust, civic engagement, and political participation. Gonzales and Hancock (2011) found that college students' self esteem increased after viewing their Facebook profile. Their findings highlight the potential importance of selective self-presentation that accompanies Facebook use. Park, Kee, and Valenzuela (2009) found that using Facebook can help users to successfully bridge online and offline contacts. That is, friendships developed in person (offline) can be maintained by interacting through Facebook (online), and vice versa.

In contrast to the afore-mentioned findings, a number of studies have found that Facebook use is associated with negative outcomes pertaining to self-esteem and social support. De Vries and Kuhne (2015) surveyed a multi-national group (78% Bulgarian, 16% Dutch, 6%

European, Indian, Mexican, and Chinese) of 231 adults between the ages of 18 and 25 and found that Facebook use was related to greater levels of negative social comparison, lower self-perceived social competence, and negative feelings about perceived physical attractiveness.

Kalpidou, Costin, and Morris (2011) provide further evidence of the complex relationship among Facebook use, self-esteem, and social factors. In their study of 70 undergraduate students, they examined Facebook use differences between first-year and upper-class students. They found that higher Facebook use in first-year and upper-class students was related to low self-esteem. Additionally, higher numbers of Facebook friends were associated with lower emotional and academic adjustment among first-year students. Interestingly, outcomes for upper-class students indicated that number of friends was positively related to social adjustment and school attachment. These findings suggest that as students progress in college they may find methods to use Facebook in a more helpful way to connect with others. Additionally, number of Facebook friends predicted college adjustment, but time spent on Facebook did not.

Academic Success & Procrastination   A number of studies show that one of the main reasons college students use Facebook is to procrastinate or avoid doing school work (Quan-Haase & Young, 2010; Papacharissi & Mendelson, 2011; Smock, Ellison, Lampe, & Wohn, 2011). Research suggests that using Facebook to procrastinate can be harmful to the overall well-being of college students (Hinsch & Sheldon, 2013). In a recent study conducted by Meier, Reinecke, & Meltzer (2016) the impact of Facebook procrastination on the well-being and academic stress levels of 699 college students in Germany was examined. Correlational interpretations of the data showed that use of Facebook as a form of procrastination had a significant negative relationship with overall well-being and a positive relationship with increased academic stress, suggesting that college students who use Facebook to avoid academic

work are more likely to experience lower well-being, and increased stress levels. Further

supporting the relationship between social media use and procrastination, a study by Hinsch and

Sheldon (2013), found that college students who decreased their social media use showed lower

levels of procrastination and increased life satisfaction.

The research on Facebook procrastination fits with the finding that Facebook users do not

perform as well academically as non-users. Kirschner & Karpinski (2010) surveyed 219

undergraduate and graduate students on their Facebook use, Grade Point Average (GPA), and

time dedicated to studying each week. They found that although time spent on the internet did

not differ between Facebook users and non-users, Facebook users were significantly more likely

than non users to study fewer hours per week and to have a lower mean GPA. These findings led

the authors to conclude that Facebook users and non-users differ significantly in their study

methods.

Facebook Addiction   The idea that SNS can become addictive is widely debated

(Griffiths, 2013). Within the literature SNS/Internet addiction is described as excessive or

unregulated use of SNS resulting in negative personal outcomes (e.g., damaging personal, family

and/or professional life) (LaRose, Kim & Peng, 2010; Guedes et al., 2016). Although

SNS/Internet addiction is not officially included as a diagnosis in the most recent publication of

The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM-5*; American

Psychiatric Association, 2013), it is included in the "Emerging Measures and Models" section. It

is estimated to impact approximately 5-8% of the population, and some believe these numbers

will increase as social media sites continue to grow in popularity (Shonin, Gordon, Griffiths,

2014).

A review of the literature conducted by Griffiths et al. (2014) examined 17 studies of SNS addiction and found preliminary evidence for a number of symptoms associated with SNS addiction, including withdrawal from daily activities, negative personal consequences related to use, and preoccupation with SNS. However, a number of methodological issues with the studies left the authors to conclude that the existence of addiction to SNSs is still open for debate. While there is a great deal of contention regarding the topic of SNS addiction, one thing appears clear; use of SNSs can be associated with negative outcomes for users (Bolton et al., 2012).

Cyberbullying   Facebook use is also related to cyberbullying, defined by Hinduja and Patchin (2009) as "willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices" (p. 5). Cyberbullying can take a variety of forms including: online fighting/arguing, harassment through the use of sending repeated offensive messages to the target, cyber-stalking, exclusion from online groups, impersonation of the target, sharing private information with the public without the target's permission, etc. (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Over the past decade, the prevalence of cyberbullying has increased, causing society to become more aware of this issue. A number of media reports indicate that cyberbullying at its most extreme can lead to suicide in youth and college students (De Nies, Donaldson, & Netter, 2010; Friedman, 2010, Kingkade, 2014). Studies have found prevalence rates of being cyberbullied ranging from 9-11% of college students to as high as 55% of college students (Kraft & Wang, 2010; Dilmac, 2009). Research indicates that Facebook, is one of the most commonly used platforms for cyberbullying among college students (Walker, Sockman, & Koehn; 2011)

According to the literature, cyberbullying victims and perpetrators are at increased risk for problems related to school and psychological health. Schenk and Fremouw (2012) surveyed

799 college students about cyberbullying and psychological outcomes. They discovered that

students who had experienced cyberbullying scored higher on measures of depression, anxiety,

paranoia, and phobic anxiety than those who had not been cyberbullied. Additionally,

experiencing cyberbullying was associated with greater suicidal ideation, attempts, and planning.

  Depression, Envy, & Loneliness The research on Facebook use and depression has

found questionable associations. Jelenchick, Eickhoff, and Moreno (2013) found no relationship

between Facebook use and depression, but other researchers have found weak statistical

associations (Moreno et al., 2011; Tandoc, Ferrucci, & Duffy, 2015; Wright et al., 2012). It is

possible that the impact of Facebook use on outcomes related to depression might depend on

how Facebook is used. For example, Wright et al. (2012) surveyed 361 college students to

examine various paths leading to depression. They found that Facebook use was positively

correlated with depression, however, they found that face-to-face and Facebook support network

satisfaction mediated the impact of Facebook use on self-reported depression.

  Similarly, Tandoc, Ferrucci, & Duffy (2015) investigated the relationships between

Facebook use, envy, and depression in a group of 736 college students, and discovered that the

impact of surveillance use of Facebook on levels of depression is mediated by feelings of envy.

That is, Facebook users who are envious of the activities and lifestyles of their Facebook friends

are far more likely to endorse feelings of depression. The authors refer to this type of Facebook

use as "surveillance use" meaning that users are browsing the site to see how friends are doing in

comparison to their own lives. Postings about new material wealth, vacations, and happy

relationships are likely to cause envy in surveillance users of Facebook. Results of the study

showed that frequency of Facebook use in and of itself was not related to increased feelings of

depression; however, heavy Facebook use was associated with greater levels of Facebook envy

than light Facebook use. Further, greater levels of Facebook envy predicted higher levels of depression among college students. The authors discovered that Facebook envy appears to be a significant mediator in the relationship between surveillance use of Facebook and depression, such that surveillance use of Facebook can decrease feelings of depression when the use does not create feelings of envy, however; surveillance use of Facebook can lead to increased levels of depression when it promotes Facebook envy. The authors explain that when Facebook is used to stay connected to others, rather than to compare oneself with one's friends, users do not suffer negative effects.

People frequently post images and statements to Facebook that highlight positive occasions in their lives, which can lead to feelings of envy among their friends. Knowing this, Chou and Edge (2012) investigated the way that Facebook use impacts users' perceptions of their Facebook friends' lives. They surveyed 425 undergraduate students with a number of questions including asking the degree to which students agree with the statements "Many of my friends have a better life than me;" "many of my friends are happier than me;" and "life is fair." The authors discovered that the more one looked at postings pertaining to a Facebook friend's personal life (e.g., pictures of their friend with other friends, family, engaging in fun activities; statements the friend makes about activities and events in their life, etc.) the more likely they were to experience envy, such that users who were on Facebook for many years experienced more envy than those who were newer to Facebook. Additionally, people with higher numbers of Facebook friends felt more envious that those with fewer Facebook friends.

Song, et al. (2014) conducted a meta-analysis of 18 studies exploring the relationship between Facebook use and feelings of loneliness. They found a significant positive relationship between the amount of time spent on Facebook and self-reported loneliness. The authors caution,

that these findings could be moderated by the variability of Facebook use and loneliness measures used in the studies.

Sagioglou & Greitemeyer (2014) conducted 3 studies to investigate the relationships between Facebook use and mood. They discovered that people expect to feel good as a result of using Facebook (which could be a motivating factor for use); however, they typically end up feeling worse as a result of the lack of perceived meaningfulness associated with Facebook use. Thus, Facebook use could impair affective well-being because it is perceived as less meaningful, more of a waste of time, and a less useful activity.

Burke and Kraut (2016) conducted a study that did not find a relationship between Facebook use and negative well-being outcomes such as depression. Burke, a researcher employed by Facebook, and Kraut, a professor at Carnegie Mellon University, teamed up to study the relationship between Facebook use and psychological well-being outcomes in a sample of 1,910 Facebook using adults. This study adds considerably to the research because of the unique ability of the researchers to access Facebook activity files for each participant, thus not relying solely on self-report measures of Facebook use. Participants agreed to complete three surveys each month for a period of 3 months and consented to analysis of their Facebook activity during this time. The researchers examined three components of Facebook communication: targeted composed communication (one-on-one text communication between Facebook friends), one-click communication ("likes," and "pokes"), and broadcast communication (reading the newsfeed stories, visiting profiles, and viewing others' photos). Additionally, they examined tie strength (strong or weak) of participants' friends. Psychological well-being was assessed by six measures (Perceived Social Support, Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Satisfaction With Life Scale Diener et al., 2010; Depression, Radloff, 1977; UCLA Loneliness

Scale, Russell, 1996; Positive and Negative Affect Scale, Watson, Clark, & Tellegen, 1988; and

the Perceived Stress Scale, Cohen, Kamarck, & Mermelstein, 1983). In their analyses, the

researchers controlled for major life events including marriage, divorce, loss of a job, and death

of a loved one. They found that receiving targeted composed text from strong ties was associated

with improved levels of well-being over the 3 month study; however, general Facebook

communication was not associated with changes in well-being. These findings suggest that

Facebook users benefit from personalized, effortful communication from people they are close

to; whereas, impersonal communication such as "likes" or "pokes" and communication from

those they are not close to do not impact well-being.

While the findings on the impact of Facebook use is mixed, it seems evident that the way

the content is perceived, attended to, and used plays an important role in whether one

experiences positive or negative outcomes. Perception and attention, appear to be particularly

important to Facebook use outcomes, as evidenced by the previously discussed studies. For

example, attending to the positive life events of one's friends can result in negative outcomes if

the person perceives these as evidence that their own life is lacking in comparison (Burke &

Kraut, 2016). Mindfulness is a unique trait that is closely tied to attention and perception, and

therefore, may play an important role in Facebook use outcomes. Additionally, mindfulness has

been found to decrease many of the negative outcomes associated with Facebook use (e.g.,

addiction and depression) and to contribute to the positive effects (e.g. increased well-being and

life satisfaction).

Mindfulness

The traditional Buddhist exercise of mindfulness has existed for over 2,500 years as a

way for practitioners to connect with the present moment. The incorporation of mindfulness into

the scientific literature is a much more recent development, with the first scientific studies of the relationship between mindfulness and psychological well-being occurring in the late 1970s (Kabat-Zinn, 1982). In the classical Buddhist version of mindfulness, the primary purpose of the exercise is to facilitate spiritual awakening (Mikulas, 2010). In the Western perspective, the primary purpose is typically to decrease negative mental states and improve psychological functioning (Kabat-Zinn, 1994). A single, unified definition of the word *mindfulness* does not exist (Anālayo, 2014). While the Western conceptualization of the term mindfulness restricts the scope of the Pali word, *sati,* used to describe the traditional Buddhist interpretation of mindfulness, both conceptualizations involve an understanding that attention will be held on a particular object or sensation (Gethin, 2016). This paper discusses mindfulness as it is commonly defined by the modern Western psychological literature, "paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally," "the nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise." and "a receptive attention to and awareness of present events and experience" (Kabat-Zinn, 1994, p.4; Baer, 2003, p.125; Brown, Ryan, & Creswell, 2007, p.212).

Over the last three decades, the topic of mindfulness has become more prevalent in the research literature. The research to date has examined mindfulness in a number of forms, including trait or dispositional mindfulness, induced state mindfulness, and formally trained mindfulness. The proposed study will focus on trait mindfulness.

Trait Mindfulness   *Trait mindfulness*, also called *dispositional mindfulness*, refers to an individual's everyday level of mindfulness. This is in contrast to *state mindfulness*, which is typically used to refer to one's immediate level of mindfulness in a particular moment, generally assessed during or after a brief mindfulness practice. Arch and Landy (2016) explain, "all forms

of mindfulness represent variations on the theme of state mindfulness; that is, trait mindfulness

represents the tendency to reside in mindful states over time, whereas trained mindfulness

represents the trained capacity to cultivate and more frequently reside in mindful states." (p.209).

Trait mindfulness is typically stable over time; however, formal mindfulness training has been

shown to increase it (Brown & Ryan, 2003; Carmody, Reed, Kristeller, & Merriman, 2008). In

fact, a study by Carmody, Redd, Kristeller, & Merriman (2008) found that self-reported

mindfulness can be significantly increased (up to 16%) after only 3 or 4 days of mindfulness

meditation training. This suggests that people can experience the benefits of increased

mindfulness level in a very short amount of time.

      Coping & Emotion Regulation   In a study by Weinstein, Brown, and Ryan (2009),

65 undergraduates participated in a single laboratory session investigating the relationship

among mindfulness, stress, and coping. Students first completed a packet of self-report measures

including the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) to measure

trait mindfulness, and baseline levels of stress and anxiety. Participants then engaged in a 3-

minute stress-provoking task, followed by completing self-report measures of levels of anxiety

and stress 5 minutes, and 30 minutes after this task. At the 30-minute time point, participants

were also given an inventory to assess levels of approach and avoidant coping. Participants were

then given 5 minutes to complete a set of mazes in order to assess concentration, creative

thinking, and performance abilities after a stressful task. The researchers found that students

higher in trait mindfulness experienced less stress in response to the stressful activity, and

showed greater stress recovery at the 30-minute point than those lower in trait mindfulness.

Additionally, those higher in trait mindfulness were less likely to use avoidant coping. These

findings suggest that mindful individuals are better able to regulate stress, resulting in lower

anxiety than individuals with lower levels of mindfulness. A follow-up longitudinal study by

Weinstein, Brown, and Ryan (2009) involving 92 undergraduate students further supported these

findings, and indicated that higher mindfulness was associated with greater use of adaptive

coping and higher levels of well-being after a one-month time span.

A study by Brown, Goodman, and Inzlicht (2012) investigated whether differences in

trait mindfulness levels of 46 undergraduate students were related to neural responses to

affective stimuli. Participants completed two measures of trait mindfulness, a measure of

attentional control, a measure of neuroticism, and a measure of negative affectivity. After

completing the battery of self-report measures, students were fitted with an electrode cap for

EEG recording, and were asked to look at a series of images containing unpleasant as well as

pleasant stimuli displayed on a monitor in front of them. They were shown 150 images for 5

seconds each. Scalp recorded event-related potentials (ERPs) were recorded while participants

viewed images. A component of the ERPs called late positive potential (LPP), a neural marker

for emotional arousal, was examined in order to assess emotion regulatory processes of

participants. LPP amplitude is larger for emotionally salient stimuli, so a highly unpleasant

image will register a higher LPP than a neutral image. Researchers found that higher levels of

trait mindfulness were associated with lower LPP amplitude, even after accounting for

attentional control, indicating that more mindful individuals were less reactive to highly

unpleasant or pleasant images. Based upon these findings, the researchers posit that higher levels

of mindfulness might impact neural responses of affective processing, thereby impacting

emotion regulation. In other words, the findings suggest that those with higher levels of

mindfulness are better able to regulate emotion than those with lower levels of mindfulness.

Based upon these findings, it is plausible that trait mindfulness could impact the way a person responds to images displayed on Facebook

   Procrastination & Academic Performance Mindfulness levels could impact whether a person is prone to procrastination. A study conducted by Sirois and Tosti (2012) examined the relationship among procrastination, mindfulness, stress, and perceived health in a sample of 339 college students. They discovered that low levels of trait mindfulness were associated with increased procrastination and stress and lower perceived health. Further support of the relationship between procrastination and mindfulness comes from a pilot study conducted by Dionne et al. (2016). Twenty-one students were involved in three, 90-minute sessions of psychoeducational Acceptance and Commitment Therapy (ACT) with a mindfulness emphasis. Measures of procrastination, mindfulness, and cognitive diffusion were used to measure change over time. The authors found that as mindfulness levels increased, procrastination decreased, suggesting that it is possible to improve study habits with the use of brief mindfulness interventions.

   Mindfulness is also associated with improved academic performance. Rosenstreich and Margalit (2015) examined the relationship among academic performance, mindfulness, and perceived loneliness. They found that students who participated in a 5-session mindfulness workshop showed higher levels of mindfulness and had higher grades at the end of the semester than students who did not participate in the workshops. The authors also found an interaction between mindfulness and loneliness, such that loneliness negatively predicted academic grades for non mindfulness workshop students, but did not impact those in the mindfulness workshop.

   Addiction Preliminary research indicates that lower levels of mindfulness are associated with higher levels of social media addiction. Sriwilai & Charoensukmongkol (2015)

examined the relationship among social media addiction, mindfulness levels, coping strategies, and emotional exhaustion. The authors collected data from 211 employees from varying vocational fields in Thailand and discovered that participants who were highly addicted to social media showed lower levels of mindfulness. The researchers posit that mindfulness levels of people addicted to social media can be impaired due to the distraction caused by cravings or urges to access social media. Such distractions may cause one to be less able to focus on one thing at a time.

A number of mindfulness-based interventions have been successfully used to treat addictive behaviors, however, none to-date have addressed social media addiction (Zgierska et al., 2009; Shonin, Van Gordon, & Griffiths, 2014). Despite the lack of research on this particular topic, it is reasonable to believe that mindfulness interventions used to successfully treat other addictions (e.g., online gambling and substance addictions) could be successful in assisting those with addiction problems pertaining to Facebook and other forms of social media. Mindfulness is associated with decreased addictive behaviors and risk factors pertaining to craving, emotion regulation, avoidance, and expectations, while increasing protective factors such as awareness and acceptance (Bowen, Vieten, Witkiewitz, and Carroll, 2015). One of the first steps in treating addictive behaviors is recognizing them as problematic. Many individuals with addictive behaviors experience a period of denial before they are able to benefit from treatment. Mindfulness is particularly well-suited to address awareness issues of addiction, as a central part of the practice is paying attention and honestly examining internal and external experiences. Those higher in mindfulness have been shown to experience increased metacognitive awareness, which can help individuals to more deeply understand the feelings and situations associated with their addictive behavior (Bowen et al., 2014). This metacognitive awareness seems to be

especially useful in relapse prevention treatments, as evidenced by a study conducted by Bowen et al. (2014). The researchers examined three substance-use relapse prevention treatment methods: mindfulness-based relapse prevention (MBRP), relapse prevention (RP), and treatment as usual (TAU). They discovered that participants in the MBRP group used substances significantly less at a 12-month follow up than those in the RP and TAU groups. The author's findings led them to theorize that the mindfulness intervention showed added treatment benefit by strengthening participants' self-monitoring, and coping abilities.

In order to further understand the mechanisms by which mindfulness-based interventions can be helpful in internet addiction treatment, Shonin, Van Gordon, & Griffiths (2013) conducted a review and assessment of the literature. They discovered that individuals with higher levels of mindfulness are better able to distance themselves from the sensory and cognitive stimuli, and take a non-judgmental, non-reactive approach to habitual mental urges. This essentially results in decreased impulsivity and increased ability to cope with cravings.

Cyberbullying   Although the research to-date has not addressed the relationship between cyberbullying and mindfulness, preliminary evidence suggests that mindfulness may be associated with decreased bullying behaviors as well as increased ability to cope with being bullied. For example, mindfulness has been shown to lower aggression, an emotional state frequently associated with the perpetration of bullying (Heppner et al., 2008; Borders, Earleywine, & Jajodia, 2010; and Singh et al., 2007). Heppner et al. (2008) recruited 175 undergraduate participants, and discovered that students who received an experimentally induced mindfulness-boost prior to experiencing social rejection felt less distress and lowered aggression when compared to students not primed with a mindfulness activity. In addition, Borders et al. (2008) found that highly mindful undergraduate students displayed lower levels of anger,

hostility, and aggression. Lastly, a longitudinal study investigating the effects of a mindfulness intervention for anger management found that participants achieved a significant drop in aggression, and this reduction was maintained at a 4-year follow-up (Singh et al., 2007).

Depression   A number of studies have shown that increased mindfulness is associated with decreases in depression and improved levels of well-being in a variety of populations (Kabat-Zinn, Lipworth, Burney, & Sellers, 1986; Kuyken et al., 2008; Teasdale, Segal, & Williams, 1995).

John Kabat-Zinn conducted one of the first studies on mindfulness therapy interventions in 1982 at The University of Massachusetts Hospital with a group of patients experiencing chronic pain (Kabat-Zinn, Lipworth, Burney, & Sellers, 1986). In his study, patients participated in a 10-week stress reduction and relaxation program (later renamed Mindfulness-Based Stress Reduction; MBSR) where they learned and practiced a variety of mindfulness meditation skills. At the conclusion of the 10-week program, 50% of participants showed a 50% or greater reduction in pain intensity (Kabat-Zinn, Lipworth, Burney, & Sellers, 1986).

A study conducted by Teasdale, Williams, and Segal (2000) found that an 8-week MBCT training significantly increased mindfulness levels and reduced relapse/recurrence of major depressive episodes in a population of clinically depressed participants with a history of three or more previous episodes of depression. Similarly, in a randomized controlled trial (RCT) comparing participants on anti-depressant medication with participants receiving MBCT plus support to taper/discontinue antidepressants, Kuyken et al. (2008) found that relapse/recurrence rates were significantly lower in the MBCT group. Additionally, members of the MBCT group experienced fewer residual depressive symptoms and reported a greater improvement in quality of life than those in the anti-depressant medication group.

Mindfulness interventions with college and university level students have shown similar results to those found in patient populations. A study by Collard, Avny, and Boniwell (2008) found that an MBCT intervention with students at the University of East London significantly decreased negative affect and increased mindfulness levels over the course of the 8-week mindfulness training. Similarly, in a pilot study examining, the impact of Meditation Awareness Training (MAT) on psychological well-being in university students in the UK, Van Gordon, Shonin, Sumich, Sundin, and Griffiths (2014) found that students in the MAT group showed significant improvements in measures of psychological well-being and trait mindfulness levels over the course of the 8-week training program, while participants in the control group, did not. Their findings indicate that mindfulness training may help university students to regulate emotions of stress, anxiety, and low mood.

Mindfulness may also impact the coping strategies students use to deal with depressive symptoms. Bravo, Pearson, Stevens, and Henson (2016) investigated psychological well-being, coping strategies, trait mindfulness, and alcohol use behaviors in a sample of 448 college students. They discovered that trait mindfulness moderated the relationship between depressive symptoms and using drinking as a coping mechanism, which in turn, resulted in fewer alcohol-related problems. In other words, students reporting higher trait mindfulness were less likely to use alcohol to cope with depressive symptoms, and in turn, had fewer alcohol-related problems than students with low or average levels of mindfulness.

Well-being   Higher levels of trait mindfulness are related to or predict a variety of psychological well-being indicators. In their review of empirical studies pertaining to mindfulness and psychological health, Keng, Smoski, and Robins (2011) concluded that increased well-being, improved behavioral regulation, and reduced psychological distress and

emotional reactivity are all associated with higher levels of mindfulness. Further, research indicates that many positive well-being outcomes are found in college students with higher levels of mindfulness. For example, in a study conducted by Brown and Ryan (2003), well-being and personality measures were given to 327 university students along with a measure of trait mindfulness. Results showed significant positive correlations between level of trait mindfulness and emotional intelligence, openness to experience, positive affect, competence, autonomy, and self-actualization. Additionally, students high in mindfulness showed greater self-awareness of their well-being than those low in mindfulness, and mindfulness was negatively correlated with measures of depression, anxiety, and negative affect. Similarly, Hollis-Walker and Colosimo (2011) found that adults (41% of which were college students) with high levels of mindfulness showed higher levels of self-compassion and psychological well-being

Statement of the Problem

It is clear that social media use, and in particular, Facebook use is a regular part of the daily lives of many college students. The initial research in this area indicates that social media can be both beneficial and harmful to overall well-being, with some studies indicating that factors such as how social media is used may play an important moderating role between social media use and well-being outcomes. Given the prevalence of Facebook use in daily life, it is important for counseling psychologists to understand the relationship of Facebook use to well-being and life satisfaction. In order to make informed recommendations to clients, counseling psychologists must first understand the individual factors that impact Facebook use outcomes.

One such factor that is currently of great interest to the psychological community is mindfulness. Mindfulness has been associated with improvements of factors associated with negative outcomes of Facebook use. Research indicates that a higher level of dispositional

mindfulness might be particularly helpful in fostering positive outcomes of social media use, but no studies have directly addressed this question with college students. The purpose of this study is to investigate the relationships among trait mindfulness, Facebook use, life satisfaction, and well-being in college students. This study adds to the limited amount of research on the topic of social media and mindfulness, and can inform future research in this area. Further, it is hoped that this information will help counseling psychologists in their work to assist college students to utilize Facebook in helpful rather than harmful ways.

Research Questions

The following research questions guided this study:

Research Question 1: How are trait mindfulness and Facebook intensity related to life satisfaction?

Research Question 2: How are psycho-social aspects of Facebook use (i.e., compensation, self-presentation, socialization, Facebook addiction, and virtual self) related to life satisfaction?

Research Question 3: How are trait mindfulness and Facebook intensity related to well-being?

Research Question 4: How are psycho-social aspects of Facebook use (i.e., compensation, self-presentation, socialization, Facebook addiction, and virtual self) related to well-being?

Research Question 5: Does trait mindfulness moderate the relationship between Facebook intensity and life satisfaction?

Research Question 6: Does trait mindfulness moderate the relationship between Facebook intensity and well-being?

Chapter 3: Method

Design

A correlational design was used to explore the relationship among college students' trait

mindfulness, Facebook use, life satisfaction, and well-being. Participation in the research study

took place entirely online via a single session self-report assessment. The secure

www.qualtrics.com website was chosen for its ease of use and due to its reputation as a quality

research platform. Using the online survey method was beneficial because it allowed respondents

to complete the survey at the time and location of their choosing and enabled easy and

streamlined recruitment. Further, data entered onto the site was transmitted directly to statistical

software, thus eliminating potential data-entry errors.

Participants

Participants for this study were currently enrolled undergraduate students from Kansas

and Colorado, age 18 or older, with active Facebook accounts. No other exclusionary criteria

were used.

Measures

Initially, participants completed a brief demographic questionnaire pertaining to age,

ethnicity, gender, and year in school.

Intensity of Facebook Use   The Facebook Intensity scale (FBI; Ellison, Steinfield, &

Lampe, 2007) was used to assess intensity of Facebook use. The scale was designed to measure

Facebook usage beyond simple measures of frequency and duration. It includes questions that

assess emotional connectedness to the site (e.g., "I would be sorry if Facebook shut down") and

its integration into one's daily life (e.g., "Facebook has become part of my daily routine"). The

scale consists of six questions based on a 5-point Likert-type scale ranging from 1 (*strongly*

disagree) to 5 (*strongly agree*), and two open-ended questions that ask about number of

Facebook friends and average daily usage. An overall mean score is calculated, with higher

numbers indicating greater Facebook intensity. Reliability for the FBI scale was found to have a

Cronbach's alpha level of .83 (Ellison et al., 2007).

Psycho-Social Aspects of Facebook Use   The English version of the Psycho-Social

Aspects of Facebook Use (PSAFU; Bodroza & Jovanovic, 2016) was used to measure

psychological processes and behaviors associated with Facebook use. The scale was developed

to more comprehensively measure internal processes and behaviors related to Facebook use. The

PSAFU was validated using a sample of 445 Serbian Facebook users, and had not previously

been used with an English-speaking population. Items were reviewed with a sample of Facebook

users to address any potential grammatical/spelling changes necessary to make the questions

more relatable to an English-speaking population. Two minor changes were made: first on item

12 the word *got* was changed to *gotten*, so the question read *I have initiated face-to-face contact*

with a person whom I have gotten to know through Facebook; and on item 21, the word

Facebook was added so that the question read *I care about the impressions others form about me*

when they see my Facebook profile. The 26-item short form of the scale was used, as Bodroza

and Jovanovic found it to be more psychometrically sound. Participants were asked to respond to

each statement using a 5-point scale ranging from 1 (*it doesn't refer to me at all*) to 5 (*it*

completely refers to me). Items pertain to five factors: compensatory use (e.g., "I find it easier to

communicate with people on Facebook than in face-to-face settings"), self-presentation (e.g., "I

care about the impressions others form about me when they see my profile"), socializing (e.g.,

"Facebook is a way to meet new and interesting people," and "I like to flirt with people on

Facebook"), Facebook addiction (e.g., "I have tried many times to reduce the time I spend on

Facebook but have never succeeded"), and virtual self (e.g., "When someone opens my

Facebook profile, they can easily get the impression of what kind of person I am").

Initially, 72 items were developed by adapting questions from the Internet Addiction Test

(Young, 1998) and The Facebook Questionnaire (Ross et al., 2009). Remaining items were

developed by the researchers based on the literature and suggestions from a pool of Facebook

users. Exploratory factor analysis resulted in maintaining 43 items pertaining to five factors, and

confirmatory factor analysis showed a better model fit with 26 items ($X^2 = 455.156$, $df = 289$,

$CFI = .930$, $NFI = .831$, $NNFI = .921$, $RMSEA = .40$ $(.033 - .047)$, $SRMR = .049$).

Trait mindfulness   The Mindful Attention Awareness Scale (MAAS; Brown & Ryan,

2003) was used to measure participant's natural level of mindfulness. This measure was designed

for use with the general population and assesses quality of attention, which is widely viewed as

the core feature of mindfulness (Quaglia et al., 2015). While some argue that mindfulness should

be measured as a multi-faceted construct with non-judgment as a separate facet, Brown and Ryan

(2004) assert that nonjudgmental attention is inherent in the receptive attention of mindfulness,

rather than a separate attitude. The MAAS measures mindfulness as a single-factor construct and

assesses one's general tendency to be aware of and attentive to present moment experiences in

daily life; put another way, one's ability to simply notice and watch the events that take place.

The MAAS is a 15-item scale with items scored on a 6-point Likert-type scale from 1 (*almost*

always) to 6 (*almost never*). Respondents are asked to indicate how frequently they currently

have experiences such as "I rush through activities without being really attentive to them," "I do

jobs or tasks automatically, without being aware of what I'm doing," and "I find myself listening

to someone with one ear, doing something else at the same time." The measure takes

approximately 5 minutes to complete. A mean score is calculated, with higher scores indicating

greater levels of mindfulness. The measure has been used with undergraduates, community adult

samples, experienced meditators, and in clinical settings. Factor analyses have confirmed a

single factor scale structure. The measure has good internal consistency (Cronbach's alphas

range from .80 - .90), good discriminant and convergent validity, and it displayed good test-retest

reliability (r = .81) when administered to students over a 4-week period (Brown & Ryan, 2003;

Carlson & Brown, 2005).

Life satisfaction   The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larson,

& Griffin, 1985) was used to measure participant's perceived level of personal well-being. The

SWLS is a 5-item, widely used measure in psychology used to assess global life satisfaction.

Items are rated on a 7-point Likert-type scale with scores ranging from 1 (*strongly disagree)* to 7

(*strongly agree*) and respondents are asked to indicate their agreement with items such as "In

most ways my life is close to my ideal" and "If I could live my life over, I would change almost

nothing." The measure demonstrates good internal consistency with alpha coefficients of .80 or

greater and good test-retest reliability over a 2-month time interval (r=.82) (Pavot & Diener,

1993; Diener et al., 1985). Additionally, the SWLS shows expected correlations with measures

of emotional and psychological well-being.

Psychological Well-being   Ryff's Scales of Psychological Well-being (RPWB; 1989;

1995) was used to assess psychological well-being. The scale is based on six dimensions of

psychological well-being including self-acceptance, positive relations with others,

autonomy, environmental mastery, purpose in life, and personal growth. The original 120-

item scale contained 20 items per subscale, and subsequent shortened versions have been

developed, including an 84-item measure with 14 items per subscale, a 54-item measure

with 9 items per subscale (currently in use in the Wisconsin Longitudinal Study), a 42-item

measure with 7 items per subscale, and an 18-item measure with 3 items per subscale.

According to the instructions provided with the Ryff scales, the 3-item scales have shown

low internal consistency and scale developers do not recommend using them for high

quality assessment of well-being. In a recent review of the research conducted with varying

forms of the Ryff scales, Ryff recommends use of any of the versions using 42 items and

greater (2014). The 54-item measure was used for the purpose of this study in order to

conserve reliability and validity while also reducing the number of total survey items in

order to decrease participant burden. Participants are asked to rate how they feel about

themselves and their lives using a 6-point Likert-type scale ranging from 1 (Strongly

Disagree) to 6 (*Strongly Agree*). Items include "In general I feel I am in charge of the

situation I live," "I enjoy personal and mutual conversations with family members and

friends," "My decisions are not usually influenced by what everyone else is doing," and "I

sometimes feel as if I've done all there is to do in life." Responses to the negatively scored

items are reversed in the final scoring process. High scores are indicative of high self-

rating. Higher levels of psychological well-being are associated with higher overall scores

on the scales. When the scales are summed to form a total scale of overall well-being,

internal reliabilities are very good (.80 or higher; Keyes & Ryff, 1998).

Procedure

The survey was submitted to the Human Subjects Committee at the University of Kansas,

(KU) Lawrence for Internal Review Board (IRB) approval. Participants were recruited via the

KU SONA system, an online program that allows undergraduate and graduate students to view

research study opportunities, and via Facebook. Participants clicked on a link either through

SONA or on Facebook to access the full survey. Before beginning the survey, participants were

instructed to read an information statement detailing the purpose of the study, informed consent,

confidentiality details, and contact information for the primary researcher. In order to continue

on to the survey, participants had to check a box confirming that they were enrolled in

undergraduate courses and had an active Facebook account. Following this, participants

completed a brief demographic questionnaire, the Mindful Attention Awareness Scale (MAAS),

the Facebook Intensity Scale (FBI), the Psycho-Social Aspects of Facebook Use Scale (PSAFU),

the Satisfaction with Life Scale (SWLS), and the Ryff Scales of Psychological Well-being

(RPWB). Upon completion of these measures, participants reached a screen thanking them for

their participation in the online survey and informing them that their participation credit was

assigned via the SONA system. Those who accessed the survey through Facebook did not

receive any compensation or reward for their participation.

Chapter 4: Results

Preliminary Analyses

A-priori power analysis was conducted to determine an adequate sample size (Faul,

Erdfelder, Buchner, & Lang, 2009). With a medium anticipated effect size of 0.15, a desired

statistical power level of 0.8, a probability level of p =.05, and three predictors, the results of the

power analysis indicated a minimum sample size of 77 participants. The data collection effort,

with 77 as the minimum, took place over a 3-month time period. Data collection stopped at a

point of N=101.

Data Cleaning   In order to exclude unfit data, demographic variables related to

enrollment status and Facebook use were reviewed and exclusionary criteria were applied.

Subsequently, one case was removed because the participant reported not currently being

enrolled as an undergraduate student.

SPSS Version 24.0 was used in all analyses, with the exception of the use of M plus for

confirmatory factor analyses (CFA) of the English version of the PSAFU measure. Diagnostic

analyses were performed to ensure the assumptions of multiple regression tests were met. Visual

inspection of normal probability plots, histograms, and scatterplots of standardized predicted

values indicated normal distribution of the data for all key variables, except the Ryff Self

Acceptance sub scale, and the MeanMAAS. Further exploration of the Ryff sub scale revealed

one significant outlier (Z score = -4.54), which was subsequently removed from calculations.

Results indicated one outlier among the MeanMAAS (Z score = 3.58), which was also removed

from calculations.

Internal Consistency Reliability   The internal consistency of each continuous scale

was estimated using Cronbach's alpha values (See Table 1). Nearly all scales displayed adequate

internal consistency (alpha values above .70) and values were consistent with those found in

similar research. The FBI measure had a Cronbach's alpha value of .69, which is an inadequate

value of internal consistency reliability. Analyses showed that removal of question #7

(*Approximately how many total Facebook friends do you have?*) resulted in an adequate

Cronbach's alpha value of .78, therefore, FBI question #7 was removed from all further analyses.

Table 1 Descriptive Characteristics of Participants and Scale Reliability Coefficients

Variable	n	M	SD	Sample Range	Possible Range	Cronbach's α
Mindfulness	99	4.05	.79	2.47 – 6	1 – 6	.90
Facebook Intensity	100	3.14	.61	1.5 – 4.5	1 – 5	.78
Facebook Self Presentation	100	3.27	.99	1-5	1-5	.88
Overall Well-being	99	4.48	.52	3 – 5.78	1-6	.83
Satisfaction with Life	100	26.14	4.95	13 – 35	5 – 35	.80

Note: Sample sizes (*n*) vary from 99 to 100 due to removal of outliers.

To confirm the latent structure of the PSAFU scale (a measure never before used with an English speaking population) confirmatory factor analysis was conducted. Confirmatory factor analysis, rather than exploratory factor analysis was used, because a theorized and validated model already existed for the measure. According to Harrington (2009) 100 participants is considered a small/medium sample size, which is acceptable for less complex models. Analyses checked the five-factor solution previously found by Bodroza and Jovanovic (2016), but results showed that this model did not fit for the responses from the sample of the current study. Kline's (2005) guidelines were used to determine fit. When individual factors were examined, only one, Facebook self-presentation, showed a good fit (CFI = .99, TLI = .98, RMSEA = .050, SRMR = .049). See Table 2 for results for the full model and all five factors. Based upon these results, it was decided that only the Facebook self-presentation scores would be used in further analyses. Compensatory use of Facebook, socializing and seeking sexual partners through Facebook, Facebook addiction, and Facebook profile as the virtual self were excluded.

Table 2 CFA Results Summary for the PSAFU

Model	Cronbach's α	X^2	df	CFI	TLI	RMSEA	RMSEA CI$_{90}$	SRMR
Full Model		786.259**	289	.634	.588	.131	.120-.142	.164
Compensatory Use of FB	.855	81.604**	20	.770	.678	.176	.137-.216	.086
FB Addiction	.686	11.548*	2	.836	.507	.218	.108-.348	.068
Self Present.	.880	11.262	9	.986	.976	.050	.000-.129	.049
Socialization	.802	36.239**	5	.883	.767	.250	.177-.329	.102
Virtual ID	.541	.000**	0	1.000	1.000	.000	.000-.000	.000

*$p < .05$, ** $p < .0001$
Note: CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, RMSEA = Root-Mean Square Error of Approximation,
SRMR = Standardized Root Mean Square Residual

Table 3. Demographics by Variable (*n* = 100)

Variable	Total
Age *M* (*SD*)	23 (6.603)
Gender (%)	
Female	79
Male	20
Transgender	1
Race/Ethnicity (%)	
White	90
Black	3
Native American	1
Asian	2
Hispanic/Latino	4
Years of Education *M* (*SD*)	13.72 (1.287)
Range	13 – 18

Descriptive Analyses   Demographic information and descriptive statistics for the

sample population are presented in Table 3. Seventy-nine percent (*n* = 79) of the subjects were

female, 20% (n =20) male, and 1% (*n* = 1) identified as other (Transgender). Participant age

ranged from 18-59, with a mean age of 23. They identified as white (90%), Hispanic/Latino

(4%), black (3%), Asian (2%), and Native American/American Indian (1%).

Table 1 provides a summary of descriptive statistics for measures of mindfulness,

Facebook Use, Facebook self-presentation, satisfaction with life, and well-being. According to

responses on the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003) the college

students that participated in this study tended to perceive themselves as being able to notice and

attend to daily life in the moment. Participants showed a mean MAAS score of 4.05 (SD = .79)

on a six-point scale with higher scores indicating greater levels of mindfulness.

Participant responses on the Facebook Intensity Scale (FBI, Ellison, Steinfield, & Lampe, 2007) indicate that the majority (79%) of participants consider Facebook a part of their daily routine; although most (79%) report spending less than 30 minutes on the social networking site each day, and a little over half (57%) report using the site for less than 15 minutes each day.

The sample's mean scale score ($M = 3.27$, $SD = .99$) on the Self-presentation subscale of the Psycho-Social Aspects of Facebook (PSAFU, Bodroza & Jovanovic, 2016), suggest that the students in this sample are more likely to try to make a positive impression on others through the Facebook content they post than the sample of 445 Serbian adults ($M = 2.42$, $SD = .94$) the measure was normed on. The majority of respondents in this study (71%) indicated that they try to present themselves positively on their Facebook profile especially for people who do not know them well. Although the other subscales were not validated, exploration of the item content on some of these scales resulted in several observations of note. First, most of the sample (69%) do not use Facebook to meet new people. Students (81%) also are unlikely to use Facebook as a means to flirt with romantic interests. Most students (91%) denied having more fun socializing on Facebook than socializing offline, and 86% denied finding it easier to communicate with people on Facebook than in face-to-face settings. The majority (55%) indicated that others can easily get an impression of the type of person they are by looking at their Facebook profile. Most respondents (76%) indicated that they feel some pressure to be what others want them to be while on Facebook. Most students (74%) also reported that they are unlikely to lose sleep due to time spent on Facebook, although 16% reported this did describe them. Only 14% of respondents endorsed having tried many times to reduce their time on Facebook without success, while 72% reported this did not describe them.

On the Satisfaction with Life Scale, (Diener, Emmons, Larson, & Griffin, 1985), respondents reported feeling satisfied with life ($M = 26.14$, $SD = 4.95$), where scores range from 5 to 35 with higher scores reflecting greater life satisfaction. The majority (57%,) of participants scored in the *satisfied* to *extremely satisfied* range.

Scale scores on the Ryff Subjective Well-being Scales ranged from 2 to 6 with higher scores indicated greater levels of well-being. The mean scale score for overall well-being was 4.48 ($SD = .52$), which is consistent with the findings of a study of 224 college students from a large, mid-Atlantic public university ($M = 4.42$, $SD = .65$). Mean scale scores for the Ryff subscales all fell between 4-5, indicating that most of the sample experience high levels of well-being across all six of the domains (i.e., autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self acceptance).

Correlations & Potential Covariates   In order to test the null hypothesis that Facebook intensity and psycho-social aspects of Facebook use were not related to well-being and life satisfaction, analysis of Pearson correlations was conducted to examine the relationships among all variables. As shown in Table 4, significant positive correlations were found between the demographic variable, ethnicity and predictor variable mindfulness, and between the demographic variable of gender and PSAFU Self-presentation. As a result, these demographic variables were further explored to examine whether they should be included in the regression models as covariates. Independent groups *t* tests examined the dichotomous variable of gender, and exploratory regressions examined the categorical variable ethnicity. Additionally, a regression model including PSAFU Self-presentation was run to see if this subscale contributed to the overall model. Results were not statistically significant, suggesting that ethnicity, gender, and the PSAFU Self-presentation subscale were not linearly associated with the criterion

variables. As a result of these analyses, a statistical decision was made to exclude all

demographic variables and the PSAFU Self-presentation subscale from further analyses.

Table 4 Correlations Between Key Variables

Variable	1	2	3	4	5	6	7
1 Gender							
2 Ethnicity	-.11						
3 Age	-.09	.13					
4 Facebook Intensity	.12	-.10	-.13				
5 Mindfulness	-.19	.23*	.08	-.15			
6 Satisfaction with Life	-.17	-.04	-.09	-.15	.24*		
7 Well-being	-.13	.03	.05	-.08	.31**	.60**	
8 Facebook Self-presentation	.20*	-.17	.11	.34**	-.29**	-.14	-.06

Note: Facebook Intensity is a seven-item scale; higher scores indicate greater Facebook Intensity. Mindfulness is a 15-item scale (MAAS); higher scores indicate greater mindfulness. Satisfaction with Life is a five-item scale (SWLS); higher scores indicate greater life satisfaction. Well-being is a 54-item scale (SWBS); higher scores indicate greater well-being. Facebook Self-presentation is a six-item subscale of the PSAFU; higher scores indicate greater use of Facebook for self-presentation.

* $p < .05$; ** $p < .01$

Main Analyses

Research Question 1: How are trait mindfulness and Facebook intensity related to life satisfaction?

In order to answer research question 1, a multiple regression analysis was conducted with SWL as the criterion variable and MASS and FBI were entered as the predictors to test the null hypothesis that there were no relationships among trait mindfulness, Facebook intensity and life satisfaction. Results showed that the overall model was significant $F(2,96) = 3.51$, $p < .05$, with an R^2 of .07, accounting for 7% of the variance. MAAS significantly contributed to the model, ($\beta = .22$, $p < .05$), but FBI did not. These results indicate that increased mindfulness predicts greater satisfaction with life, while Facebook Intensity is not significantly related to satisfaction with life. Partial regression coefficients are reported in Table 5.

Table 5. Coefficients: FBI and MAAS as Predictors of SWL

Variable	*b*	SE B	B
Constant	23.57	3.88	
FBI	-.94	.81	-.12
MAAS	1.37	.63	.218*

*$p < .05$

Research Question 2: How are psycho-social aspects of Facebook use (i.e., compensation, self-presentation, socialization, Facebook addiction, and virtual self) related to satisfaction with life?

Based upon the results of the CFA conducted on the PSAFU noted previously and detailed in Table 2, analysis of the relationship between satisfaction with life and four (compensation, socialization, Facebook addiction, and virtual self) of the five subscales were excluded from analyses. Therefore, only the null hypothesis that there was no relationship

between Facebook self-presentation and life satisfaction was examined. These analyses (see

Table 4) showed no significant relationship between Facebook self-presentation and satisfaction

with life.

Research Question 3: How are trait mindfulness and Facebook intensity related to well-

being?

In order to answer research question 3, a multiple regression analysis was conducted with

WB as the criterion variable and MAAS and FBI as the predictors to test the null hypothesis that

there was no relationship among trait mindfulness, Facebook intensity, and well-being. Results

showed that the overall model was significant $F(2,96) = 4.99$, $p < .05$, with an R^2 of .09,

accounting for 9% of the variance. MAAS significantly contributed to the model, ($\beta = .30$, $p <$

.05), but FBI did not. These results indicate that increased mindfulness predicts greater well-

being, while Facebook Intensity is not significantly related to well-being. Partial regression

coefficients are reported in Table 6.

Table 6. Coefficients: FBI and MAAS as Predictors of WB

Variable	b	SE B	B
Constant	3.76	.40	
FBI	-.03	.08	-.03
MAAS	.20	.07	.30*

*$p < .05$

Research Question 4: How are psycho-social aspects of Facebook use (i.e.,

compensation, self-presentation, socialization, Facebook addiction, and virtual self) related to

satisfaction with life?

Based upon the results of the CFA conducted on the PSAFU noted previously and

detailed in Table 2 analysis of the relationship between well-being and four (compensation,

socialization, Facebook addiction, and virtual self) of the five subscales were excluded from

analyses. Analyses were performed to test the null hypothesis that there was no relationship

between Facebook self-presentation and satisfaction with life. These analyses (see Table 4)

showed no relationship between Facebook self-presentation and satisfaction with life.

Research Question 5: Does trait mindfulness moderate the relationship between

Facebook intensity and life satisfaction?

FBI did not significantly impact life satisfaction, thus, further analysis of the interaction

between FBI and MAAS and its potential impact on life satisfaction was not pursued.

Research Question 6: Does trait mindfulness moderate the relationship between

Facebook intensity and well-being?

FBI did not significantly impact well-being, thus, further analysis of the interaction

between FBI and MAAS and its potential impact on well-being was not pursued.

Chapter 5: Discussion

The purpose of the present study was to explore the relationships among trait mindfulness, Facebook use, life satisfaction, and well-being in college students. The findings of the study provided further evidence for the predictive role of participants' trait mindfulness in their self-reported levels of life satisfaction and well-being, however; no relationships were found between Facebook use and the two outcome measures. Further, no relationship was found between Facebook use and mindfulness.

Descriptive Results

Participants in the present study showed a mean MAAS score of 4.05 (SD = .79) on a six-point scale with higher scores indicating greater levels of mindfulness. This mean is similar to that of a group of 221 British undergraduates (M = 3.98, SD = .66; Brown, Kasser, Ryan, Linley, & Orzech, 2009), and is lower than a sample of 50 Zen practitioners (M = 4.29, SD = .66) (Brown & Ryan, 2003). As would be expected, the mindfulness levels of the present study of undergraduate students appear similar to those of other undergraduates, and lower than adults with extensive mindfulness experience.

Participant responses on the Facebook Intensity Scale (FBI, Ellison, Steinfield, & Lampe, 2007) indicate that the majority (79%) of participants consider Facebook a part of their daily routine; although most (79%) report spending less than 30 minutes on the social networking site each day, and a little over half (57%) report using the site for less than 15 minutes each day. These findings are more similar to usage of FB when it was still a new service ten years ago in a sample of 286 undergraduate students, which found that Facebook members spent between 10-30 minutes on average using Facebook each day (Ellison et al., 2007), and somewhat lower than in a sample of 2,603 undergraduate students in Texas which found that 58% of students used

Facebook for under 30 minutes each day (Valenzuela, Park, & Kee, 2009). Findings were mixed

regarding the degree of disconnectedness participants experienced on days when they did not log

onto Facebook, with 40% agreeing that this made them feel out of touch, while 39% disagreed,

and 21% felt neutral.

The sample's mean scale score ($M = 3.27$, $SD = .99$) on the self-presentation subscale of

the Psycho-Social Aspects of Facebook (PSAFU, Bodroza & Jovanovic, 2016), suggest that the

students in this sample are more likely to try to make a positive impression on others through the

Facebook content they post than the sample of 445 Serbian adults ($M = 2.42$, $SD = .94$) the

measure was normed on. The majority of respondents in this study (71%) indicated that they try

to present themselves positively on their Facebook profile especially for people who do not know

them well. Although the other subscales were not validated, exploration of the item content on

some of these scales resulted in several observations of note. First, most of the sample (69%) do

not use Facebook to meet new people. Students (81%) also are unlikely to use Facebook as a

means to flirt with romantic interests. Most students (91%) denied having more fun socializing

on Facebook than socializing offline, and 86% denied finding it easier to communicate with

people on Facebook than in face-to-face settings. While caution should be used when

interpreting the data on these items, it appears that most students prefer socializing offline. The

majority (55%) indicated that others can easily get an impression of the type of person they are

by looking at their Facebook profile. Most respondents (76%) indicated that they do feel some

pressure to be what others want them to be while on Facebook. Most students (74%) also

reported that they are unlikely to lose sleep due to time spent on Facebook, although 16%

reported this did describe them. Only 14% of respondents endorsed having tried many times to

reduce their time on Facebook without success, while 72% reported this did not describe them.

Mean scale scores for the Ryff subscales all fell between 4-5, indicating that most of the sample experience high levels of well-being across all six of the domains (i.e., autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self acceptance). The mean scale score for overall well-being was 4.48 (SD = .52), which is consistent with the findings of a study of 224 college students from a large, mid-Atlantic public university (M = 4.42, SD = .65) (Ziskis, 2010).

On the Satisfaction with Life Scale, (Diener, Emmons, Larson, & Griffin, 1985), respondents reported feeling satisfied with life (M = 26.14, SD = 4.95), where scores range from 5 to 35 with higher scores reflecting greater life satisfaction. The majority (57%,) of participants scored in the *satisfied* to *extremely satisfied* range. Previous studies show mean scores for American college students ranging from 23 to 25.2 (Pavot & Diener, 1993), indicating that this sample experiences greater life satisfaction than other undergraduate samples.

Predictive Role of Mindfulness

The findings of this study provide further evidence in support of Brown and Ryan's (2003) findings that higher levels of trait mindfulness are associated with greater life satisfaction and greater overall well-being. This indicates that the MAAS remains predictive of life satisfaction and well-being in a population different from those of previous research (i.e., in a sample of primarily white (90%), female (79%) undergraduate students, the majority of which (93%) were enrolled in a course in the School of Education at a large Midwestern university).

Further, the literature on mindfulness rarely addresses the potential for differences to exist in trait mindfulness between men and women. This study's findings that male and female mindfulness scores did not differ significantly, adds to the literature, and suggests that sex differences do not influence levels of everyday mindfulness.

Interestingly, the present study found that mindfulness and Facebook use are not related, and in turn, mindfulness does not mediate any potential relationship between Facebook use and well-being or life satisfaction. Although previous research explored all social media, none has explored Facebook use in particular. These findings contrast with those of Charoensukmongkol (2015) who found that trait mindfulness mediated the relationship between social media use at work and levels of burnout in a sample of adult workers in Thailand. A number of significant differences between the two studies might explain the different findings. First, the present study inquired only about Facebook use, rather than about social media use in general. It is possible that overall social media use could impact outcomes differently, as it is likely that time spent engaged with overall social media use would be greater than time spent on only one SNS. Additionally the present study examined outcome measures of overall well-being and life satisfaction rather than outcome measures related to employee burnout. Finally, the sample of predominantly white, female, American undergraduates with a mean age of 23 years is quite different from the sample of college graduate, business people working in Thailand with a mean age of 32 years. The concept and practice of mindfulness is more familiar to Thai people, although some authors have pointed out that it is more interconnected with all aspects of life in Thailand, rather than a separate practice (Christopher, Charoensuk, Gilbert, Neary, & Pearce, 2009).

Although not included in the research questions, one of the findings was that self-presentation and mindfulness were inversely correlated. The more college students had a concern for self-presentation, the less mindfulness they exhibited. This makes sense given the fact that preoccupation with self-presentation makes being in the present more difficult.

Facebook Use, Life Satisfaction, & Well-being

Previous studies found a positive relationship between the number of Facebook friends an individual has and their life satisfaction (Manago, Taylor, & Greenfield, 2012; Valenzuela, Park, & Kee, 2009), however; the present study found no significant relationship between these two variables. Similarly, previous research showed a positive relationship between Facebook intensity scores and life satisfaction scores (Liu & Yu, 2013; Valenzuela, Park, & Kee, 2009), however; the present study found no relationship between the two. The findings of the present study are most in line with those of Burke and Kraut's (2016) study of 1,910 Facebook using adults, which did not find a relationship between Facebook use and measures of well-being. The finding that Facebook use is not related to well-being and life satisfaction could indicate that Facebook does not play a large enough role in undergraduates' day to day life to significantly impact their overall well-being and feelings of satisfaction with life. Indeed, previous research indicates that spending longer periods of time on Facebook is associated with lower mood, because users feel that spending time on Facebook is not a meaningful use of time (Sagioglou & Greitemeyer, 2014). This could help to explain the lack of a relationship between Facebook use and well-being in the present study, as most (79%) of the undergraduates in the present study reported using Facebook for less than 30 minutes each day, with the majority (57%) reporting less than 14 minutes of use per day. It seems plausible that less than 30 minutes of one's day would not significantly cut into one's ability to be productive and engage in meaningful activities. Well-being and life satisfaction are broad ideas that lead one to consider long term and substantial aspects of one's life. Although Facebook use may lead to temporary annoyance with oneself for being unproductive, it does not seem to have a long term, substantial effect on overall attitudes towards the positive aspects of one's life. Most of the participants in the present study

appear to use Facebook in a tempered, moderate way that has no lasting impact on their overall feelings about their lives.

The present study also contributes new information about use of the PSAFU measure with an English-speaking student population in America. Bodroza and Jovanovic (2016) previously validated a five-factor model for the PSAFU in a sample of Serbian adults; however, the present study was not able to replicate this finding, and instead, showed that self-presentation emerged as the only scale that fit the overall model. This finding indicates that language and cultural differences could impact the PSAFU's ability to measure compensatory use of Facebook, socialization and seeking sexual partners on Facebook, Facebook addiction, and virtual identity.

Examination of self-presentation on Facebook and item content from the PSAFU showed that the majority of participants try to present themselves positively on Facebook, especially for people who do not know them well, and also feel some pressure to be what others want them to be while using Facebook. Additionally, students tend to prefer socializing offline, finding it easier to communicate and meet new people in person. Further, most students report that Facebook is not causing them to lose sleep and that they haven't felt a need to cut back on their Facebook use, or if they have, they have not found it to be difficult.

Limitations & Directions for Future Research

While this study does contribute to the literature, several limitations deserve mention. One limitation was the use of a convenience sample, which included mostly White undergraduate students taking a course in the School of Education at The University of Kansas, and is therefore not representative of all undergraduate Facebook users. A future study may benefit by including a more diverse sample of undergraduate students from different regions of

the country. A second limitation was the correlational nature of the study, which prevents one from inferring a causal association between trait mindfulness, well-being, and life satisfaction. Additionally, because self-report measures were used, it is possible that factors such as image management, lack of introspective ability, response bias, inaccurate recall, and survey-fatigue could have been problematic in capturing accurate measurements of the variables examined.

Very few validated measures of Facebook use exist, possibly due to the rapid changes in technology, therefore, finding a way to accurately measure how individuals use Facebook is challenging. Facebook is still a highly used SNS and there remains great need for validated scales to measure its uses. While the Facebook Corporation has access to more detailed measures of Facebook use, publicly available metrics are needed in order to further the research in this area. Efforts toward the creation and validation of a more universal and accurate measure of a large variety of Facebook activities could greatly benefit the research on this topic by providing researchers with a more detailed and standardized account of Facebook use.

While this study focused specifically on Facebook use because of its status as the most widely used SNS, total SNS use could impact well-being differently. Future research could explore whether the relationships among trait mindfulness, total social media use, life satisfaction, and well-being are different than those found in the present study.

Additionally, well-being and life satisfaction are broad ideas that lead one to consider long-term and substantial aspects of one's life rather than one's mood in any particular moment. While the present study found no relationship between Facebook use and such long-term measures, it is possible that a relationship may exist between Facebook use and more short term measures of well-being. Future research could investigate this with in the moment mood measures such as the positive and negative affect scale (PANAS).

In order to more directly assist counseling psychologists in their work with college students future research could examine samples of students with specific clinical diagnoses such as major depressive disorder, social phobia, post traumatic stress disorder, etc. to examine whether social media use impacts these populations differently.

Implications for Research

The findings of the current study suggest that American students respond differently to self-report measures of Facebook use than Serbian students, and therefore, further research is needed before using the PSAFU as a cross-cultural measure of Facebook use. Additionally, differences exist between American students and Thai adults, such that mindfulness does not moderate the relationship between Facebook use and measures of well-being in American college students, but does moderate the relationship between Facebook use and measures of burnout in Thai professionals.

Implications for Practice

The findings of the current study provide information to guide counseling psychologists in their work with college students. Given the large number of college students using Facebook, providing counseling psychologists with insight into the ways students are impacted by Facebook use can help them to better assist the college student population. The results of the present study are encouraging, in that Facebook does not appear to be significantly related to well-being and life satisfaction. This contrasts with popular media that frequently focuses on the negative consequences of social media use on mental health (e.g., prevalence of cyberbullying and depression).

The findings indicate that most undergraduate Facebook users check the site on a daily basis, but tend to spend less than 30 minutes on the SNS. In general, the results indicate that if a

student uses Facebook for less than 30 minutes per day, this use is unlikely to impact overall

well-being. With this knowledge, counseling psychologists can be more informed should a

student come in with concerns about their personal Facebook use. For example, counseling

psychologists might choose to include an intake question pertaining to amount of time spent on

Facebook (and other SNS's). If a student reports over 30 minutes of use per day, the clinician

could delve further into how this use might be impacting the student's life. More specifically,

asking students if they ever lose sleep because they are staying up looking at Facebook (as 16%

of the students in this study reported) and inquiring about whether students have ever tried to

reduce the amount of time they spend on Facebook without success (as 14% of the students in

this study reported). This information also can be utilized in outreach and consultation work by

counseling psychologists in providing campus resources and psychoeducation about social media

use.

In addition to the implications pertaining to Facebook use, this study's replication of the

finding that mindfulness is related to overall well-being in college students provides further

indication that training students to become more mindful might be helpful in improving their life

satisfaction and well-being.

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Appendix A: Demographic Questions

Q1 Please indicate your gender.
○ Male (1)
○ Female (2)
○ Transgender (3)

Q2 Please type your age in years in the box below.

Q3 What is the highest level of school you have completed or the highest degree you have received?
○ Less than high school degree (1)
○ High school graduate (high school diploma or equivalent including GED) (2)
○ Some college but no degree (3)
○ Associate degree in college (2-year) (4)
○ Bachelor's degree in college (4-year) (5)
○ Master's degree (6)
○ Doctoral degree (7)
○ Professional degree (JD, MD) (8)

Q4 Select the race/ethnicity you consider yourself to be. (You may select more than one answer)
○ White or Caucasian (1)
○ Black or African American (2)
○ American Indian or Native American (3)
○ Asian (4)
○ Native Hawaiian or Pacific Islander (5)
○ Hispanic/Latino/Spanish (6)
○ Other (Please Specify) (7) _____

Appendix B: Facebook Intensity (FBI)

Please read the statements below and indicate your agreement/disagreement with each item by selecting the option that best describes your experience.

Facebook is part of my everyday activity.
○ Strongly Disagree (1)
○ Disagree (2)
○ Neither Agree Nor Disagree (3)
○ Agree (4)
○ Strongly Agree (5)

I am proud to tell people I'm on Facebook.
○ Strongly Disagree (1)
○ Disagree (2)
○ Neither Agree Nor Disagree (3)
○ Agree (4)
○ Strongly Agree (5)

Facebook has become part of my daily routine.
○ Strongly Disagree (1)
○ Disagree (2)
○ Neither Agree Nor Disagree (3)
○ Agree (4)
○ Strongly Agree (5)

I feel out of touch when I haven't logged onto Facebook for a while.
○ Strongly Disagree (1)
○ Disagree (2)
○ Neither Agree Nor Disagree (3)
○ Agree (4)
○ Strongly Agree (5)

I feel I am part of the Facebook community.
○ Strongly Disagree (1)
○ Disagree (2)
○ Neither Agree Nor Disagree (3)
○ Agree (4)
○ Strongly Agree (5)

I would be sorry if Facebook shut down.
- ❍ Strongly Disagree (1)
- ❍ Disagree (2)
- ❍ Neither Agree Nor Disagree (3)
- ❍ Agree (4)
- ❍ Strongly Agree (5)

Approximately how many TOTAL Facebook friends do you have?
- ❍ 10 or less (1)
- ❍ 11-50 (2)
- ❍ 51-100 (3)
- ❍ 101-150 (4)
- ❍ 151-200 (5)
- ❍ 201-250 (6)
- ❍ 251-300 (7)
- ❍ 301-350 (8)
- ❍ 351-400 (9)
- ❍ More than 400 (10)

In the past week, on average, approximately how much time PER DAY have you spent actively using Facebook?
- ❍ 0-14 minutes (1)
- ❍ 15-29 minutes (2)
- ❍ 30-44 minutes (3)
- ❍ 45-59 minutes (4)
- ❍ 60-74 minutes (5)
- ❍ 75-99 minutes (6)
- ❍ 100-114 minutes (7)
- ❍ 115-129 minutes (8)
- ❍ 130-144 minutes (9)
- ❍ More than 145 minutes (Please fill in blank with estimated minues) (10)

    _____

Appendix C: Psycho-social Aspects of Facebook Use (PSAFU) 26-item

This questionnaire contains a series of questions regarding behaviors on the social networking site Facebook. The items in the questionnaire describe different behaviors on Facebook. Read every statement and rate the extent to which it refers to you, your behaviors, your thoughts and your feelings, i.e. how well the item describes you. This is not a test - there are no right or wrong answers, and everyone will have different responses. We are interested in your behavior and your opinions, so please respond as honestly and sincerely as you can.

Read each statement and decide how much you agree or disagree with it, or to what extent the described behavior is characteristic of you.

Doesn't refer to me at all (1)	It mostly doesn't refer to me (2)	I'm not sure if it refers to me (3)	It mostly refers to me (4)	It completely refers to me (5)

1. Some of the people around me have told me that I spend too much time on Facebook.

2. I have tried many times to reduce the time I spend on Facebook but have never succeeded.

3. I have more fun socializing on Facebook than socializing offline.

4. I find it easier to communicate with people on Facebook than in face-to-face settings.

5. I sometimes feel like I live two lives - one 'real' and one 'virtual'.

6. I have initiated face-to-face contact with a person whom I have gotten to know through Facebook.

7. I like to flirt with people on Facebook.

8. Facebook is a way to meet new and interesting people.

9. When I post information about myself on Facebook I think about how I would like others to perceive me.

10. When someone opens my Facebook profile, they can easily get the impression of what kind of person I am.

11. I feel that my Facebook profile is a very personal place.

12. I care about the impressions others form about me when they see my Facebook profile.

13. I pay a lot of attention to details of my Facebook profile, because I want to make a good impression on those who view it.

14. I try to present myself positively on my Facebook profile especially for those people who do not know me well.

15. My Facebook profile is a true reflection of myself.

16. There have been occasions where I have met and become close to someone on Facebook, only to meet in person and realize that in reality we had nothing in common.

17. On Facebook I feel less pressured to be what others want me to be.

18. On Facebook I feel more accepted and appreciated than I do offline.

19. I communicate more freely on Facebook than I do offline.

20. I find it easier to communicate on Facebook, because I don't have to think about how I look.

21. I spend time on Facebook chatting with people who I do not know very well in my offline life.

22. Sometimes I communicate via phone, sms, skype, etc. with people who I first met on Facebook.

23. Sometimes I lose sleep because I spend long periods of time on Facebook.

24. I often spend more than three hours continuously on Facebook.

25. I try to make a good impression on others by the things I post on my timeline.

26. Before I post anything on Facebook, I think about how others might perceive it.

Appendix D: Mindful Attention Awareness Scale (MAAS)

Below is a collection of statements about your everyday experience. Using the
1-6 scale below, please indicate how frequently or infrequently you currently have each
experience. Please answer according to what really reflects your experience rather than
what you think your experience should be. Please treat each item separately from every
other item.

	Almost Always (1)	Very Frequently (2)	Somewhat Frequently (3)	Somewhat Infrequently (4)	Very Infrequently (5)	Almost Never (6)
I could be experiencing some emotion and not be conscious of it until some time later. (1)	○	○	○	○	○	○
I break or spill things because of carelessness, not paying attention, or thinking of something else. (2)	○	○	○	○	○	○
I find it difficult to stay focused on what's happening in the present. (3)	○	○	○	○	○	○
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way. (4)	○	○	○	○	○	○
I tend not to notice feelings of physical tension or discomfort until they really grab my attention. (5)	○	○	○	○	○	○
I forget a person's name	○	○	○	○	○	○

almost as soon as I've been told it for the first time. (6)						
It seems I am "running on automatic," without much awareness of what I'm doing. (7)	○	○	○	○	○	○
I rush through activities without being really attentive to them. (8)	○	○	○	○	○	○
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there. (9)	○	○	○	○	○	○
I do jobs or tasks automatically, without being aware of what I'm doing. (10)	○	○	○	○	○	○
I find myself listening to someone with one ear, doing something else at the same time. (11)	○	○	○	○	○	○
I drive places on 'automatic pilot' and then wonder why I went there.	○	○	○	○	○	○

(12)						
I find myself preoccupied with the future or the past. (13)	○	○	○	○	○	○
I find myself doing things wihtout paying attention. (14)	○	○	○	○	○	○
I snack without being aware of what I'm eating. (15)	○	○	○	○	○	○

Appendix E: Ryff's Scales of Psychological Well-being

The following set of statements deals with how you might feel about yourself and your life. Please remember that there are neither right nor wrong answers.

	Strongly Disagree (6)	Disagree (5)	Disagree Slightly (4)	Agree Slightly (3)	Agree (2)	Strongly Agree (1)
Most people see me as loving and affectionate. (1)	○	○	○	○	○	○
I am not afraid to voice my opinion, even when they are in opposition to the opinions of most people. (2)	○	○	○	○	○	○
In general, I feel I am in charge of the situation in which I live. (3)	○	○	○	○	○	○
I am not interested in activities that will expand my horizons. (4)	○	○	○	○	○	○
I live life one day at a time and don't really think about the future. (5)	○	○	○	○	○	○
When I look at the story of my life, I am pleased with how things have turned out. (6)	○	○	○	○	○	○
Maintaining close relationships has been difficult and frustrating for me. (7)	○	○	○	○	○	○
My decisions are not usually	○	○	○	○	○	○

influenced by what everyone else is doing. (8)						
The demands of everyday life often get me down. (9)	○	○	○	○	○	○
I don't want to try new ways of doing things - my life is fine the way it is. (10)	○	○	○	○	○	○
I tend to focus on the present, because the future always brings me problems. (11)	○	○	○	○	○	○
In general, I feel confident and positive about myself. (12)	○	○	○	○	○	○
I often feel lonely because I have few close friends with whom to share my concerns. (13)	○	○	○	○	○	○
I tend to worry about what other people think of me. (14)	○	○	○	○	○	○
I do not fit very well with the people and the community around me. (15)	○	○	○	○	○	○
I think it is important to have new experiences that challenge	○	○	○	○	○	○

how you think about yourself and the world. (16)						
My daily activities often seem trivial and unimportant to me. (17)	○	○	○	○	○	○
I feel like many of the people I know have gotten more out of life than I have. (18)	○	○	○	○	○	○
I enjoy personal and mutual conversations with family members or friends. (19)	○	○	○	○	○	○
Being happy with myself is more important to me than having others approve of me. (20)	○	○	○	○	○	○
I am quite good at managing the many responsibilities of my daily life. (21)	○	○	○	○	○	○
When I think about it, I haven't really improved much as a person over the years. (22)	○	○	○	○	○	○
I don't have a good sense of what it is I'm trying to accomplish in	○	○	○	○	○	○

my life. (23)						
I like most aspects of my personality. (24)	○	○	○	○	○	○
I don't have many people who want to listen when I need to talk. (25)	○	○	○	○	○	○
I tend to be influenced by people with strong opinions. (26)	○	○	○	○	○	○
I often feel overwhelmed by my responsibilities. (27)	○	○	○	○	○	○
I have a sense that I have developed a lot as a person over time. (28)	○	○	○	○	○	○
I used to set goals for myself, but that now seems a waste of time. (29)	○	○	○	○	○	○
I made some mistakes in the past, but I feel that all in all everything has worked out for the best. (30)	○	○	○	○	○	○
It seems to me that most other people have more friends than I do. (31)	○	○	○	○	○	○
I have confidence in my opinions,	○	○	○	○	○	○

even if they are contrary to the general consensus. (32)						
I generally do a good job of taking care of my personal finances and affairs. (33)	○	○	○	○	○	○
I do not enjoy being in new situations that require me to change my old familiar ways of doing things. (34)	○	○	○	○	○	○
I enjoy making plans for the future and working to make them a reality. (35)	○	○	○	○	○	○
In many ways, I feel disappointed about my achievements in my life. (36)	○	○	○	○	○	○
People would describe me as a giving person, willing to share my time with others. (37)	○	○	○	○	○	○
It's difficult for me to voice my own opinions on controversial matters. (38)	○	○	○	○	○	○
I am good at juggling my time so that I can fit everything in	○	○	○	○	○	○

that needs to be done. (39)						
For me, life has been a continuous process of learning, changing, and growth. (40)	○	○	○	○	○	○
I am an active person in carrying out the plans I set for myself. (41)	○	○	○	○	○	○
My attitude about myself is probably not as positive as most people feel about themselves. (42)	○	○	○	○	○	○
I have not experienced many warm and trusting relationships with others. (43)	○	○	○	○	○	○
I often change my mind about decisions if my friends or family disagree. (44)	○	○	○	○	○	○
I have difficulty arranging my life in a way that is satisfying to me. (45)	○	○	○	○	○	○
I gave up trying to make big improvements or change in my life a long	○	○	○	○	○	○

time ago. (46)						
Some people wander aimlessly through life, but I am not one of them. (47)	○	○	○	○	○	○
The past has its ups and downs, but in general, I wouldn't want to change it. (48)	○	○	○	○	○	○
I know that I can trust my friends, and they know they can trust me. (49)	○	○	○	○	○	○
I judge myself by what I think is important, not by the values of what others think is important. (50)	○	○	○	○	○	○
I have been able to build a home and a lifestyle for myself that is much to my liking. (51)	○	○	○	○	○	○
There is truth to the saying that you can't teach an old dog new tricks. (52)	○	○	○	○	○	○
I sometimes feel as if I've done all there is to do in life. (53)	○	○	○	○	○	○
When I compare myself to	○	○	○	○	○	○

friends and acquaintances, it makes me feel good about who I am. (54)						

Appendix F: Satisfaction With Life Scale (SWLS)

Below are five statements that you may agree or disagree with. Using the scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

	Strongly disagree (1)	Disagree (2)	Slightly disagree (3)	Neither agree nor disagree (4)	Slightly agree (5)	Agree (6)	Strongly agree (7)
In most ways my life is close to my ideal. (1)	○	○	○	○	○	○	○
The conditions of my life are excellent. (2)	○	○	○	○	○	○	○
I am satisfied with my life. (3)	○	○	○	○	○	○	○
So far I have gotten the important things I want in life. (4)	○	○	○	○	○	○	○
If I could live my life over, I would change almost nothing. (5)	○	○	○	○	○	○	○