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The Role of Facebook in the Exhibition of Subclinical Narcissistic Traits

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Abstract

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Abstract

Several psychological processes motivate the use of Facebook. The correlation between subclinical narcissistic traits and Facebook use has been examined, but the results have been inconsistent. The purpose of this study was to examine the relationship between Facebook use and the exhibition of subclinical narcissistic traits. The method for this study was meant to improve upon previous studies that used self-reported data by providing researchers with a technique to collect Facebook data from the personal pages of participants, with informed consent. Social learning theory provided the theoretical foundation for this study. This theory posits that new patterns of behavior can be acquired through direct experience or by observing the behavior of others. This theory could explain why a billion people choose to post pictures, share news articles, add friends, and engage in other Facebook activities. Using a quantitative approach, approximately 3 months of Facebook activity from 93 participants were analyzed and correlated with Narcissistic Personality Inventory (NPI) scores. A multiple regression analysis was then used to examine the data in relation to the research questions and hypotheses. There were no statistically significant findings for Facebook activity and NPI scores. These findings may challenge the popular notion that Facebook and other social media represent a platform for narcissistic self-promotion. This study has potential to promote social change, in that the negative connotation may be removed from social media use, allowing more people to communicate openly without the fear of being perceived as narcissistic.

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Dedication

I would like to dedicate this dissertation to my sons, Bodhi and Zack. My little monsters, Thing One and Thing Two, Mama loves you.

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I want to thank Christopher for his unyielding support and encouragement during this process. Thank you also to Paula and John for being the best (adopted) parents I could ask for. You showed me what a family should be. I also want to thank Kevin for reminding me that life is precious, and that some people need to be protected, loved, nurtured, and advocated for despite all odds. I love you guys.

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Thank you, Nathan Templeman—because I said I would.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Introduction

The purpose of this study was to examine the relationship between Facebook use and the exhibition of subclinical narcissistic traits because Facebook has become so prevalent in the United States. This study explored how Facebook has potentially created a suitable environment for subclinical narcissistic traits to be presented. Chapter 1 introduces the background of this study and the problems that motivated the research questions. Also discussed in this chapter are the purpose of this study, the research questions, the nature of the study, operational definitions, assumptions, the significance of the study, and the expected limitations. Chapter one concludes with a summary and transition into Chapter 2.

Background

Social media is defined as a form of electronic communication through which users create online communities to share information, ideas, personal messages, and other content such as pictures or videos ("Social Media" [Def. 1], n.d.). Websites like Twitter, Facebook, and Instagram are examples of social media and have become popular ways for people to communicate. Facebook is currently the most popular social media website in the world, with over 1 billion active users (Facebook, 2014). Originally created for college students, Facebook has evolved as a means to share photographs, videos, and even other Internet sources to provide a sophisticated communication platform. Despite the popularity of Facebook, researchers and media outlets alike have questioned the

utility of being able to share every thought, picture, or video for selected users or the world to see.

Two-thirds of adult Internet users have Facebook accounts (Bergman, Fearrington, Davenport, & Bergman, 2011; Greenwood, Long, & Dal Cin, 2013). Journal articles concerning the effects of Facebook on psychological well-being began appearing in 2008, and have since covered a variety of topics, such as body image and self-esteem (Rutledge, Gillmor, & Gillen, 2013), anxiety (Rosen, Whaling, Rab, Carrier & Cheever, 2013), antisocial traits (Carpenter, 2011), and narcissism (Panek, Nardis & Konrath, 2013). To date, only about a dozen studies have explored the relationship between subclinical narcissistic traits and Facebook. Subclinical narcissistic traits are similar to clinical narcissism but are less severe. Examples of subclinical narcissistic traits include an inflated view of the self, vanity, a lack of empathy, and an expectation of special treatment (Bergman et al., 2011). This study was conducted in an attempt to contribute to the literature to provide a broader understanding of the relationship between Facebook use and subclinical narcissistic traits by using an objective methodology for gathering user data.

Problem Statement

National news outlets such as CNN (Griggs, 2015; Keen, 2012) are not the only entities that have noted a trend toward self-promoting behaviors on social media. Greenwood (2013) stated that psychologists have observed growth in entertainment media content that focuses on personal achievement and competition. Reality television shows and an ever-present invitation to post, tweet, and broadcast the self may reflect and

fuel a societal shift toward individualistic values and a quest for fame (Greenwood, 2013). Twenge, Konrath, Foster, Campbell, and Bushman (2008) stated that more research is needed on the cultural-level consequences of elevated individual-level narcissistic traits. Any new information that can aid in the understanding of this phenomenon will effect positive social change.

This study has implications for social change by examining how Facebook promotes individuality at the expense of collectivist societal views. Caldwell-Harris and Avcicegi (2006) stated that collectivist cultures encourage strong links among members, who choose goals that are advantageous for the group. Individualists see themselves as separate from other people, including family and friends. Grijalva and Newman (2015) stated that narcissism is less strongly related to deviant workplace behavior in cultures that have collectivist values. Industrialized nations such as the United States, England, and Australia are regarded as individualistic, whereas cultures in developing regions such as Africa, China and areas of the Middle East typically have traditional values and are collectivistic (Caldwell-Harris & Avcicegi, 2006). Studying how Facebook may be perpetuating subclinical narcissistic traits will contribute to social change by bringing awareness to the problem.

Several research studies have highlighted that social networking websites such as Facebook and Twitter may perpetuate narcissistic traits. Bergman et al. (2011) stated that there is a concern that social networking websites may reinforce, or even create, narcissistic behaviors because of the ability to display vanity, post self-promoting material, and gain large amounts of shallow friends. Narcissistic behaviors on Facebook

might translate into problem behaviors in real-life, face-to-face situations. For example, Buffardi and Campbell (2008) found that narcissistic expression on Facebook is very similar to such expression in other social domains such as school, work, family, and friendships. Raising public awareness of the relationship between Facebook use and subclinical narcissistic traits is important because these behaviors should be studied rather than accepted as the status quo.

The results of this study provide necessary insight into the relationship between Facebook use and the exhibition of subclinical narcissistic traits. There is an obvious prevalence of negative psychological traits that are being displayed on Facebook (Bergman et al., 2011; Chen & Lee, 2013; Ross et al, 2009). There are multiple inconsistencies between researchers in this field. For example, Bergman et al. (2011) and Pettijohn, LaPiene, Pettijohn, and Horting (2012) found no relationship between Facebook intensity and narcissism. In contrast, Buffardi and Campbell (2008) and Mehdizadeh (2010) found a relationship between narcissism and Facebook intensity. This study provides further evidence and contributes to this growing field by bridging the gap between what researchers already know about Facebook and narcissistic traits, and what they want to know.

Purpose of the Study

The purpose of this quantitative study was to better understand the relationship between the exhibition of subclinical narcissistic traits and Facebook use. To address the gap in research, the Narcissistic Personality Inventory (NPI) was administered to participants. Participants' scores were compared to the number of times that they

generated content on Facebook through activities such as changing profile pictures, uploading photos, and sharing content, as well as how many friends they had in their networks. Facebook activity and NPI scores were analyzed to determine whether there are any factors that predict the exhibition of subclinical narcissistic traits.

Research Questions and Hypotheses

Research Question 1

Will the numbers of profile picture changes, shared content, photo uploads, and Facebook friends have significant positive correlations with NPI scores?

Null Hypothesis 1 (H_0). The numbers of profile picture changes, shared content, photo uploads, and Facebook friends will not have significant positive correlations with NPI scores.

Alternative Hypothesis 1 ($H_{1\text{-}1}$). The numbers of profile picture changes, shared content, photo uploads, and Facebook friends will have significant positive correlations with NPI scores.

Research Question 2

Which of the following sets of variables will best predict higher NPI scores by stepwise multiple regression?

1. Profile picture changes
2. Shared content
3. Photo uploads
4. Facebook friends

Null Hypothesis 2 (H_{21}). No combination of variables will best predict higher NPI scores.

Alternative Hypothesis 2 ($H_{1\text{-}2}$). Shared content and Facebook friends will best predict higher NPI scores.

Research Question 3

Will gender moderate the relationship between the number of profile picture changes, shared content, photo uploads, or Facebook friends?

Null Hypothesis 3 (H_{03}). Gender will not moderate the relationship between the number of profile picture changes, shared content, photo uploads, or Facebook friends.

Alternative Hypothesis 3 ($H_{1\text{-}3}$). Gender will moderate the relationship between the number of profile picture changes and shared content.

Nature of the Study

This study used linear regression research design to describe, explain, and predict relationships between the variables. The NPI assesses subclinical narcissistic traits by presenting 40 paired statements; each pair includes a narcissistic and a nonnarcissistic response. Responses were summed from 0 to 40, with higher scores indicating a more narcissistic personality (Bergman et al., 2011). Additional study variables included the numbers of profile picture changes, Facebook friends, shared content, and photo uploads, as well as gender. A regression analysis examined which variables predict high levels of subclinical narcissism. Chapter 3 describes the study design in detail.

Operational Definitions

Friending: The act of adding someone to one's Facebook network, allowing that person to see one's activity and interact (Facebook, 2015).

Narcissistic personality disorder (NPD): A pervasive pattern of grandiosity, need for admiration, and lack of empathy, beginning in early adulthood and present in a variety of contexts, as indicated by at least five of nine total criteria (American Psychiatric Association, 2013).

Profile picture: The picture that friends see next to a user's name on Facebook (Facebook, 2014).

Status update: An update feature that allows users to discuss their thoughts, whereabouts, or important information with their friends, usually in short format, with the information becoming available on the user's homepage as well as the newsfeeds of the user's friend network (Rouse, 2010).

Social media: "A form of electronic communication through which users create online communities to share information, ideas, personal messages and other content such as pictures or videos" ("Social Media" [Def. 1], n.d.).

Subclinical narcissism: Similar to NPD, but exists to a lesser degree (Bergman et al., 2011).

Unfriending: The act of clicking the "unfriend" icon, which severs a network tie and viewing privileges of the affected friend (Facebook, 2015).

Significance

For the last decade, psychological researchers have been exploring how social networking sites such as Facebook have been affecting the psychological well-being of users (Bergman et al., 2011; Ross et al., 2009; Zhao, Grasmuck & Martin, 2008). Numerous studies dedicated to the examination of Facebook and its role in subclinical narcissistic traits have outlined limitations and future directions concerning a different approach to gathering data. For example, Buffardi and Campbell (2008) used undergraduate research assistants to rate certain criteria from participants' Facebook pages, such as whether the participants were self-promoting or whether the profile pictures were physically attractive. While rating and categorizing narcissistic traits is helpful, quantifying the rate at which each individual exhibits these behaviors would provide a better understanding of their prevalence. Labels such as *physically attractive* and *self-promoting*, even if raters agree among each other, remain subjective observations.

Comparing the number of specific behaviors (excessive profile picture changes, status updates, and photo uploads) to scores on the NPI allows researchers to acquire a deeper understanding of the relationship between Facebook and subclinical narcissistic traits. Facebook use has been measured in the past by categorical, interval, or ratio scales with different degrees of sensitivity (Anderson et al., 2012). For example, participants may be asked to provide details of the average number of minutes they spend online in a typical day, month, or year. Other methods have involved asking participants to rate whether they use social media with *never*, *seldom*, *sometimes*, or *frequently*, without

direction provided on the frequency of usage that might characterize these categories (Anderson et al., 2012). *Frequently*, for instance, might mean every hour to some participants and once a day to others.

There has been no consistent definition of what *frequently* or *seldom* might mean in any study to date. Bergman et al. (2011) administered surveys that addressed the frequency of social networking activities by asking participants to identify how many minutes per day they spent on social networking sites. The researchers found that narcissism was not a strong predictor of the reported time spent on social networking sites or the frequency of status updates. In their statement of limitations, Bergman et al. called for future studies to replicate this study's findings using other assessment methodologies to measure social media behaviors and motives because the accuracy of self-reports depends upon an individual's ability to introspect. Perhaps this study did not support the findings of other studies, such as those of Buffardi and Campbell (2008) and Mehdizadeh (2010), because frequency, or number of behaviors, has yet to be measured using a method other than self-reports or rater observations.

Assumptions

There were several assumptions in this study. The first assumption was that there would be a broad sample of subclinical narcissism. Second, it was assumed that the participants understood the questions on the NPI and answered them honestly. Third, the participants were assumed to be honest and genuine in their use of Facebook. Finally, I assumed that participants would not restrict their privacy settings while participating in this study.

Summary

Since 2004, Facebook has become a global phenomenon. Researchers have become interested in how users behave on Facebook and what psychological factors are in motion. With features such as unlimited status updates as well as photo and video uploading, it is no wonder that some users are more attracted to the utility of this website than others are. This study contributes to the literature by broadening the understanding of the relationship between Facebook use and subclinical narcissistic traits. Chapter two provides an in-depth literature review that explains the current literature surrounding Facebook and subclinical narcissistic traits, as well as limitations and how this study fills current gaps in the literature.

Chapter 2: Literature Review

Introduction

The study involved a review of concepts related to Facebook use and the presentation of subclinical narcissistic traits. This chapter defines the differences between narcissistic personality disorder and subclinical narcissistic traits. The consequences of widespread narcissistic traits, such as crime and public safety, are also discussed.

Several research studies have postulated that social media websites such as Facebook have become a platform for narcissistic traits to thrive (Bergman et al., 2011; Carpenter, 2011; Davenport et al., 2014). Much of the research in this area has focused on users aged 18-25, which highlights a gap in the literature on older users of Facebook. Pew Research Center conducted a survey of 5,122 Internet users aged 18 and older who used social media websites such as Facebook and Twitter. The results of the survey showed that 78% of those surveyed were between the ages of 30 and 49, and 65% were between the ages of 50 and 64 (PewResearchCenter, 2015). Expanding this research area from college students to older adults may allow results to be more generalizable in the future, as well as fill the gap in the literature where age is concerned.

Content and Search Strategy

The content of this literature review was constructed from scholarly, peer-reviewed journal articles and books from a variety of sources. Research in the areas of Facebook, narcissism, and subclinical narcissistic traits began to appear in psychological peer-reviewed journals in 2008. A search of the literature was conducted in electronic psychological databases such as ProQuest, PsycINFO, PsycARTICLES, and PsycTESTS

through the Walden University Library, as well as Google Scholar. The list of terms used to conduct the literature search included *narcissism, narcissistic personality disorder, subclinical narcissistic traits (SCNT), Narcissism Personality Inventory, Facebook, and social media.* Electronic copies of books were also referenced to provide a retrospective point of view on certain theories.

This literature review was structured to focus on the theoretical frameworks, methodologies, and research outcomes of previous research studies. By organizing the information in this manner, a researcher is better able to defend the rationale for the connections and variances of a study in relation to the previous research in this field. In order to develop an effective study and research design, I determine patterns in the affiliations between subclinical narcissistic trait exhibition and Facebook use by scrutinizing empirical research studies for literature review, methodology, and outcomes.

Theoretical Framework

Social learning theory, created by Bandura (1977), posits that new patterns of behavior can be acquired through direct experience or by observing the behavior of others. Reinforcing consequences serve as a way of informing performers what they must do to gain beneficial outcomes or avoid punishing ones. Humans also learn from vicarious reinforcement, or observing the actions of others and whether or not these actions are rewarded, ignored, or punished (Bandura, 1977). It is unknown what makes some Facebook users self-promote more than others. The social learning theory of Bandura provided a foundation to this study by describing the human capability to learn from the perceived success of others and repeat behaviors to achieve similar results.

Some Facebook users learn that self-promotional behavior generates attention, which maintains their subclinical narcissistic beliefs about themselves. This is an example of vicarious reinforcement because users do not have to post self-promotional content to observe the outcomes of other users who receive positive reinforcement. Facebook users observe the "success" of other users who post content such as status updates and wish to experience similar feelings of admiration. When a new Facebook user joins, he or she must learn from others about what is or is not acceptable behavior, much as in face-to-face interactions. Facebook trends like the 2014 "Ice Bucket Challenge" are examples of social learning; users saw the videos of their friends getting ice water poured on them in the name of philanthropy and decided to post similar videos so that they, too, could receive attention. Similar social lessons are learned by some about the amount of content that is posted based on the amount of comments or "likes" that they receive.

Origins of Narcissism

Many theories exist on why people exhibit narcissistic traits as adults. Some theorists state that narcissism grows from overly indulgent parents who unintentionally teach their children to depend on external validation (Imbesi, 1999; Millon, 1996). Other researchers have found that parents who are apathetic and cold cause children to strive for perfection in order to win the praise and love of their parents (Kernberg, 1975; Kohut, 1977). There is a difference between a child with high self-esteem and a child with emerging narcissistic traits. Children and adults with high self-esteem and well-balanced positive self-views have different interpersonal interactions than those with unrealistic

self-inflation, competitiveness, and dependence on compliments (Thomaes, Brummelman, Reijntjes & Bushman, 2013). For example, Foster, Campbell, and Twenge (2003) stated that individuals with narcissistic behaviors have a tendency to brag about accomplishments, be less agreeable, and display arrogant attitudes.

Narcissus

Narcissism has been an aspect of human nature since the beginning of time. The Roman poet Ovid included the story of Narcissus in his collection *Metamorphoses* in 8 C.E. Narcissus was the son of the river god Cephissus and the nymph Liriope, and he was revered for his beauty (Narcissus, 2015). One day he saw his reflection in a pool of water and could not look away, causing his own drowning. A blind seer had warned Narcissus's mother when he was a child that her son would live a long life *si se non noverit*, meaning "unless he knows himself" (Campbell & Miller, 2011). The story of Narcissus is tragic because his own self-love was so great that it eventually killed him.

Narcissistic Personality Disorder and Subclinical Narcissistic Traits

The popularity of social media has inspired many researchers to explore the relationship between subclinical narcissistic traits and Facebook use. Television and online media have also indicated interest in this relationship, often using the term *narcissist* without the proper definition or clinical criteria. One example from the media is a recent CNN.com article titled "Dude, Does This Selfie Make Me a Narcissist?" (Griggs, 2014). In order to understand why narcissistic traits are thriving on social media, narcissistic personality disorder (NPD) should be differentiated from subclinical narcissistic traits.

Narcissistic Personality Disorder (NPD)

NPD is a pervasive mental disorder that can interrupt functioning in a number of areas, such as work, school, and interpersonal relationships.

> Narcissistic Personality Disorder is characterized by exhibiting at least five of the following symptoms: 1) preoccupation with fantasies of unlimited success, power, brilliance, beauty, or love; 2) belief that he or she is "special" and can only be understood by other high-status people or institutions; 3) exaggerated sense of self-importance; 4) requires excess admiration; 5) sense of entitlement; 6) exploitation of others; 7) lacks empathy; 8) envious of others; 9) arrogant, haughty, patronizing, or contemptuous behaviors or attitudes. (American Psychiatric Association, 2013)

NPD is associated with a wide variety of aggressive behaviors, especially in response to criticism and other threats to self-esteem. Carlson, Vazire, and Oltmanns (2011) stated that a lack of insight is a cornerstone of narcissism. Those people with NPD do not see the negative sides of their personality, such as arrogance, entitlement, or disagreeableness. Instead, they see themselves in the best possible light and work very hard to maintain their overly positive self-perceptions. It is understandable that treating this population is difficult; individuals with NPD do not believe that anything is wrong with them.

People with NPD take credit for other people's accomplishments and externalize any perceived failure (Carlson et al., 2011). They believe that they are more attractive, intelligent, or successful than the average person (Campbell & Miller, 2011).

Overconfidence in their abilities means that they fail to learn from criticism, and their interpersonal functioning as well as occupational and educational pursuits suffer as a result (Back et al., 2013). Unfortunately, there are no empirically supported treatments for NPD (American Psychiatric Association, 2013; Miller, Widiger, & Campbell, 2010).

Subclinical Narcissistic Traits

Bergman et al. (2011) stated that subclinical narcissism appears similar to clinical narcissism but exists to a lesser degree. Those people who meet criteria for subclinical narcissism hold an inflated view of themselves. Members of this population also believe that they are special and unique, and they expect special treatment from others without feeling the obligation to reciprocate (American Psychiatric Association, 2013; Millon, 1996). Subclinical narcissistic traits are not always maladaptive; many people have high self-esteem and believe that they are special because of the occupations or high-status positions that they have attained. Leaders of major companies (Zhu & Chen, 2015) and professional athletes (Hendawy & Awad, 2013) may expect special treatment because their environment reinforces such expectations.

While some subclinical narcissistic traits can be adaptive for certain people, the average person will see a disruption in at least one area of functioning, such as school, work, or significant relationships due to a tendency to be argumentative or even violent in response to criticism. Relationships typically fail because of deception and infidelity (Miller et al., 2010). Individuals with these traits suffer from a self-serving bias and will take personal credit for success but blame failures on others. Carlson et al. (2010) stated that people who score higher on a subclinical measure of narcissism rarely describe

themselves as narcissistic. Social media websites like Facebook may be encouraging self-promoting behaviors, making subclinical narcissistic traits more common and acceptable.

Implications for Social Change

The rise in narcissistic behaviors on social media could have negative implications for society as a whole. Twenge et al. (2008) stated that narcissism can be conceptualized as a self-regulating system, where self-esteem and enhancement are sought through a variety of social means with little regard for the consequences suffered by others. This means that the self-promoting culture of social media benefits the individual with narcissistic traits in the short term, but those forced to interact with those behaviors pay the price. For example, relationships with people with narcissistic traits often fail due to deception, infidelity, and selfishness (Miller et al., 2010). Therefore, it is socially relevant to investigate how Facebook is used to exhibit these behaviors.

Many researchers have speculated that social media websites such as Facebook have provided opportunities for those with subclinical narcissistic traits to display vanity, self-promote, manipulate public image, and gain approval and attention (Bergman et al., 2011; Davenport et al., 2014). Twenge et al. (2008) argued that most of the increase in narcissism occurred before the wide use of such technology. Social media did not cause the initial increase in narcissism but may have changed the way in which people use it. Members of younger generations such as Millennials (people born between 1977 and 2000) grew up with these digital options at their disposal to interact and communicate, making them digital natives (Correa, Hinsley, & de Zúñiga, 2010).

Previous research has been biased toward student populations. The use of Facebook among other age groups should be explored (Anderson, Fagan, Woodnutt & Chamorro-Premuzic, 2012). Whether they are exhibited in young or old individuals, subclinical narcissistic traits are bad for society. Anderson et al. (2012) found a widespread shift to an increasingly isolated, individually driven mode of interaction than has appeared previously in Western society. Twenge et al. (2008) conducted a meta-analysis of 85 samples of American college students, which showed a systematic increase in scores on the NPI. The shift in scores means that the average college student now endorses about two more narcissistic items and less empathy than his or her predecessors did in the early 1980s. Even if subclinical narcissistic traits are less severe than those observed as part of NPD, a rise in these traits is likely to have negative implications for society, such as a lack of empathy, increased arrogance, and a focus on self-promotion.

White-Collar Crime

White-collar crimes are non-violent offenses such as fraud, embezzlement, and breach of trust meant for financial gain committed by means of deception. The total financial cost of white-collar crimes far exceeds that of street crime. The likelihood of being a white-collar crime victim is much greater than the likelihood of being a victim of street crime (Friedrichs, 2007). In a study by Blickle, Schelgel, and Fassbender (2006), convicted white-collar criminals had significantly higher rates of subclinical narcissistic traits compared to non-criminal white-collar executives. Those high in subclinical narcissistic traits believe that they are entitled to special treatment and success without

actually earning it. Once they obtain wealth, their inflated sense of entitlement and lack of empathy allow them to justify and rationalize their crimes (Blickle et al., 2006).

Facebook

Created on February 4, 2004, Facebook is the world's largest and most popular social media website, with the most traffic (Anderson et al., 2012; Hanlon, 2014). The social media phenomenon began at Harvard University and by June 2015 had 1.49 billion monthly active users (Facebook, 2015). Considering that the world's population is about 7 billion (U.S. Census Bureau, 2014), these are enormous odds with even grander implications. This means that about one out of every seven to eight people in the world has a Facebook account. Due to the widespread use of this social media website, it is no wonder that certain behaviors, such as entering large numbers of shallow relationships and displaying vanity through photo uploads, have gained national attention in the United States (Buffardi & Campbell, 2008).

Facebook Research

Facebook users are reported to have spent more than 9.7 billion minutes per day and shared four billion pieces of content per day, which included at least 250 million photos in 2012 (Wilson, Gosling, & Graham, 2012). It is possible that constant access to media such as Facebook and Twitter is replacing face-to-face interaction and perpetuating the increasingly isolated and individually driven society that exists today (Anderson et al., 2012). Journal articles concerning the effects of Facebook on psychological well-being started being published around 2008, and have since covered a variety of topics such as body image and self-esteem (Rutledge, Gillmor & Gillen, 2013),

anxiety (Rosen, Whaling, Rab, Carrier & Cheever, 2013), anti-social traits (Carpenter, 2011), and narcissism (Panek, Nardis & Konrath, 2013). Scholars find behaviors on this social media outlet fascinating. It also provides social scientists with an unprecedented opportunity to observe behavior in a naturalistic setting and test hypotheses in a novel domain. Participants can also be efficiently recruited from many countries and demographic groups (Wilson et al., 2012). Researchers are now focusing more on examining actual behaviors, such as posting content, and how they predict subclinical narcissistic traits (Alloway, Runac, Qureshi & Kemp., 2014; Mehdizadeh, 2010; Ong et al., 2011).

Facebook Behavior

Several articles have provided insight into how people behave on Facebook. Facebook enables its users to present themselves in an online profile and accumulate "friends" who can post comments on each other's pages and view each other's profiles and romantic relationship statuses therein (Sheldon, 2008; Zhao, Grasmuck, & Martin, 2008). An average Facebook user was found to have 217 "friends," which is more than 1.5 times the number expected in real life (Acar, 2008). Facebook allows end users freedom in the presentation of photographs, videos, status updates, and self-descriptions, resulting in a billion-member online community. With this much freedom in cultivating an online presence, the exhibition of subclinical narcissistic traits on Facebook has generated scholarly inquiry.

Subclinical Narcissistic Traits on Facebook

Subclinical narcissistic traits include self-promoting behaviors due to an unreasonable expectation of admiration from others. Self-presentation on Facebook can include choosing a profile picture, a background picture, status updates, and providing short narratives to display what is unique or special about the user's life. A study by Back et al. (2010) found that Facebook users often present a realistic or slightly exaggerated version of their true personalities, rather than an idealized virtual identity. This means that Facebook users will behave closely to how they would in a face-to-face setting. The plethora of self-promotional features of Facebook allows users to express who they really are on a grander scale.

The Belief of Being "Special"

An example of subclinical narcissism is the belief that the person is somehow "special" and "unique" and can only be understood by other high status individuals Facebook and other social media websites have the added allure that anyone can achieve sudden fame if noticed by enough people. Zhao et al. (2008) stated that Facebook enables the users to present themselves in ways that can reasonably bypass physical ‘‘gating obstacles.” For example, Facebook allows average citizens to have direct, two-way contact to celebrities, major corporations, and even public officials. One only has to Google the phrase "how to get a celebrity to follow you on social media," to receive countless web results instructing the average user on tips to achieve the acknowledgement of a celebrity.

Power, Success, Brilliance, Beauty

Subclinical narcissism is a predictor of aspirations of fame and wealth (Greenwood, Long, & Dal Cin, 2013). Recent research has found that people who are high in subclinical narcissism have profile picture changes that are rated as more physically attractive and more self-promoting than those low in trait narcissism (Buffardi & Campbell, 2008; Kapidzic, 2013). This confirmed the hypotheses of Ong et al. (2011), who surmised that those who are high in trait narcissism select more attractive photos of themselves to affirm their inflated beliefs in their own physical appearance. Facebook provides a medium to build vast audiences who will feed the egos of its users, especially those high in narcissistic traits.

Recent research has detailed how photographs are used by those low and high in trait narcissism. A study by Mendelson and Papacharissi (2010) qualitatively analyzed 20,962 photographs and 13,543 comments on the photographs from eighty-nine college students. In the photographs the authors found an emphasis on the self, highlighted by the absence of contextual information, pictures taken at medium to close distance, limited background, an awareness of the camera, and behaviors produced specifically for the camera by a single or several subjects. The photos are then tagged, re-tagged, and commented on, thereby perpetuating the continuance of this self-promotional behavior. It is unknown if these kinds of behaviors are related to high trait narcissism, or simply a product of a growing trend.

Exaggerated Sense of Self-Importance

An exaggerated sense of self-importance is a belief that thoughts or ideas should be realized by others without the commensurate achievements to justify such claims. The status update is a way for people to share thoughts and current activities with friends. Ong et al. (2011) found that adolescents who scored higher on the NPI sent out more status updates than their less narcissistic peers. Buffardi and Campbell (2008) found that more narcissistic individuals have larger amounts of friends on Facebook. A similar study by Ong et al. (2011) did not find a relationship between narcissism and network size or photo count. Further research is needed to understand what Facebook behaviors predict subclinical narcissism.

Pictures are posted by the billions every day on Facebook. Users can select attractive photographs and write narratives that are self-promoting in an effort to project an enhanced sense of self. In addition to posting flattering photos of themselves or others, friends of the user can provide comments on each photo. Mehdizadeh (2010) postulated that pleasing comments could serve as a positive regulator of narcissistic esteem. Facebook allows the user to post as many of these photos as they want, with no obligation to participate in the self-promotional activities of others.

Lack of Empathy

A lack of empathy is the inability to share in the emotions of another person. Since empathy is a vital piece of human closeness, people with narcissistic traits are likely to suffer in their interpersonal relationships. Ong et al. (2011) found that narcissistic individuals reported having more Facebook friends and used Facebook to

meet new friends online. Those people high in trait narcissism are not interested in forming face-to-face intimate relationships that will take time and effort to maintain (Anderson et al., 2012; Pettijohn, LaPiene, Pettijohn & Horting, 2012). Facebook allows for feigned interest with minimal effort, such as posting on someone's home page to give the appearance of concern or curiosity.

The relationship between empathy, narcissism and Facebook use has only recently been investigated. Alloway et al. (2014) found a relationship between females, narcissism, and the personal distress scale of the Interpersonal Reactivity Index that measures different scales of empathy. The authors found that males had no relationship with empathy and narcissism, but that females who score lower on the ability to identify with someone else's distress also scored higher in narcissism. Profile picture ratings were a predictor of narcissism for males, and profile picture ratings and status update frequency were a predictor of narcissism for females.

Envy

It is ironic that people who are narcissistic exhibit an inflated sense of self-esteem, yet they lack the very thing that they project outwardly. Chen and Lee (2013) found that self-presentation promoted happiness among users in the short term, but lowered their self-esteem because they had a greater exposure to other people's positive self-presentation. The authors added that many users reported feeling that other people had better lives than they did, and that this sense of deprivation caused significant psychological distress. Similarly, Chou and Edge (2012) found that individuals that spent more time on Facebook were more likely to agree that others were "happier" and "had

better lives." It would be interesting to observe if those high in narcissism posted more content in reaction to the perceived competition of others in their network.

Facebook might expose an individual to potentially jealousy-provoking information about a partner, which creates a feedback loop whereby heightened jealousy leads to increased surveillance of a partner's Facebook page (Muise, Christofides, & Desmarais, 2009). If an individual ruminates on his or her perceived inferiority after negatively comparing oneself with others on Facebook, he or she is engaging in an emotional regulation strategy known to maintain and exacerbate distress (Feinstein et al., 2013). Persistent surveillance results in further exposure to jealousy-provoking information, which causes significant problems in romantic and sexual relationships. Currently no research has addressed Facebook variables such as relationship status, the number of content generated, and narcissism scores. It would be worth knowing whether or not those high in narcissism choose to declare a relationship status.

Excessive Need for Admiration

The need for constant praise of beauty, intelligence, or accomplishments is a cornerstone of narcissism. Facebook allows for instant feedback on status updates, comments, photos, or in the chat function. Chen, Lai, Dang, and Zhang (2009) found that the higher the narcissism score, the more likely the user turns to social media when bored or having nothing better to do. Furthermore, the authors found that the more satisfied the user is with an offline social support network, the less likely the user will turn to social media when they have nothing else to do. Rather than having face-to-face interactions

where attention and praise should be equally split between friends, Facebook allows for a constant stream of perceived admiration.

To brag is to talk about oneself in a proud or self-impressed way. Status updates are generally used to broadcast current status, such as "I was promoted today, yay me!" On Facebook it is both acceptable and the norm to use status updates to boast (Mehdizadeh, 2010). In addition to the act of verbally boasting, pictures and other available information can be just as effective. In a European study by Utz and Kramer (2009), researchers discovered that the higher the narcissism score, the less strict the privacy settings. This supports Kapidzic (2013), who stated that social media profiles could serve as a platform for narcissistic individuals to emphasize aspects that might maximize the possibility of gaining admiration.

I-Talk: Narcissistic Self-Focus

The focus of this study will be to explore the relationship between self-promotional, self-generated content and narcissism. "I-Talk" is the use of first-person singular pronouns such as me, mine, my, or I. Research in this area is conflicting; Raskin and Shaw (1988) found a positive relationship between NPI scores and the use of spontaneous first-person singulars. Carey et al., (2015) found no relationship between the amount of first-person singular pronouns and high NPI scores, which was supported by earlier studies (Fast and Funder, 2008; Holtzman, Vazire & Mehl, 2010). In social media, perhaps "I-Talk" is communicated in other ways.

On Facebook, a picture really does say 1000 words. DeWall, Buffardi, Bonser and Campbell (2011) found that narcissistic participants who used a low number of first-

person singular pronouns on Facebook tended to call attention to themselves with self-promoting, sexy profile photos, swear words, and aggressive statements. Perhaps "I" statements have been replaced by the abilities of the status update and photo upload function of social media websites like Facebook. For example, a Facebook status update could state: "who just passed their class with an A? This gal," or "been up all night helping bestie with her homework." Both statements are boasting about either good grades or being a good friend, without first-person singular pronouns.

Status updates and photo uploads allow users to allude to first-person singular pronouns, without actually saying "I, me, my, or mine." Facebook was created for the very purpose of sharing information between users, and yet some choose to share or browse content more than others. The exploration of which personality traits drive Facebook users to post a new photo once a month versus once a day is ongoing. The literature in this area has many gaps that require attention in order to provide answers to these questions.

Inconsistencies in Narcissism and Facebook Literature

There are several inconsistencies in the limited amount of literature exploring subclinical narcissistic traits and Facebook use. Twelve articles explored similar variables including self-reported numbers of status updates (Alloway et al., 2014; McKinney, Kelly, & Duran, 2012) , profile pictures (Bergman et al., 2011; Kapidzic, 2013;) , number of Facebook friends (Buffardi & Campbell, 2008; Ong et al., 2011; Rosen et al., 2013), self-reported frequency of use (Mehdizadeh, 2010; Pettijohn et al., 2012; Ryan & Xenos, 2011), and NPI scores (Carpenter, 2011; Davenport et al., 2014) . All of these studies

relied on the participant to accurately report on the different variables being studied. Despite similar research designs, none of the studies that explore narcissism and Facebook use has agreed on all of their findings. The question of whether or not status updates, profile picture changes, photo uploads, number of Facebook friends, and frequency of use correlates with NPI scores is still disputed.

Status Updates

Status updates allow the Facebook user to type any free text up to 62,306 characters (Protalinski, 2011). It is no surprise that this much freedom has attracted some users with narcissistic traits. Recent studies have found a connection between high NPI scores and higher reported numbers of status updates (Alloway et al., 2014; Carpenter, 2011; Davenport et al., 2014; Mehdizadeh, 2010; Ong et al., 2011; Rosen et al., 2013). Studies by Bergman et al. (2011) and McKinney et al. (2012) did not find a significant correlation between the number of status updates and NPI scores. These studies all chose ungraduated samples with the majority of their participants under the age of twenty-five.

The issue with the preponderance of research that has focused on college students is that there is a misconception that is being spread throughout the media and literature alike that Millennials are more narcissistic than previous generations (Goudreau, 2013; Twenge et al., 2008; Westerman, Bergman, Bergman & Daly, 2012). Since Millennials grew up with access to technologies that other generations did not, such as electronic mail, text messages, and social media websites like Facebook, it is easy to see why Millennials are thought to use these self-promotional and connective tools more than other generations. A recent survey by Duggan, Ellison, Lampe, Lenhart and Madden

(2015) found that out of a sample of 1,597 internet users ages 18 and over, 73% of those users were between the ages of 30-49 and had active Facebook accounts. The authors also found that 63% of internet users between the ages of 50-64 also had active Facebook accounts. Despite the large numbers of older adults who are using social media, no studies to date have attempted to explore what behaviors are exhibited on Facebook.

Profile Picture Changes

The profile picture is a representation of the Facebook user and is created by uploading a photo The majority of the research in this area has confirmed that the more emphasis that is placed with the profile picture being attractive or impressive, the higher the NPI scores will be in populations between the ages of 18-25 (Alloway et al., 2014; Bergman et al., 2011; Carpenter, 2011; Kapidzic, 2013; Ong et al., 2011; Rosen et al., 2013; Ryan & Xenos, 2011). One study by McKinney et al. (2012) did not find a relationship between profile picture emphasis and changes on NPI scores. The author suggested that posting photos and status updates of oneself is more of a reflection of the person's openness rather than narcissism. Limitations to this study included the use of an author-generated openness measure, which has not been systematically tested for validity (McKinney et al., 2012).

Number of Facebook Friends

Facebook is a global, online networking platform that allows people to connect with anyone else who has an account. Friends can also see the friend list of the people in their networks, allowing them to make further connections. Facebook only allows users to have a maximum of 5000 friends in their network (Facebook, 2015a). To date, seven

studies have found a relationship between higher amounts of Facebook friends and higher NPI scores (Bergman et al., 2011; Buffardi & Campbell, 2008; Carpenter, 2011; Davenport et al., 2014; McKinney et al., 2012; Pettijohn et al., 2012; Rosen et al., 2012). Despite this large amount of support, one study contradicted the results of these studies (Ong et al., 2011).

A study by Ong et al. (2011) did not find a relationship between the number of friends and NPI scores. The authors suggested that extraversion could account for high numbers of friends, not narcissism. The mean age for this study was 14, and the author suggested that age effects should be addressed in future studies. This is significant to note because all other literature in this field have explored populations between the ages of 18-25. To date no studies have explored older generations, such as those people who are currently age 40 and above.

Frequency of Facebook Use

The frequency that someone uses Facebook may or may not be predictive of higher NPI scores. A study by Mehdizadeh (2010) found that the number of times Facebook was checked per day, as well as the amount of time spent on the site, predicted higher NPI-16 scores. Other studies did not find a relationship between the frequency of Facebook use and narcissism (Alloway et al., 2014; Bergman et al., 2011; McKinney et al., 2012; Pettijohn et al., 2012). It should be noted that these studies relied on self-reported estimates of Facebook use. This study will be the first of its kind to count how many times a user generates content (i.e. status updates, shares, profile picture changes), rather than relying on self-reported estimates of how many hours were spent using the

website. Issues with the reliability of self-reported Facebook frequency will be discussed in the next section.

Measuring Facebook Use

Measuring Facebook use has encountered problems within empirical research. Recent studies have used categorical, interval, or ratio scales to assess the frequency of a variety of activities. Respondents may be asked to provide details of the average number of minutes they spend online in a typical day, month, or year, or to identify whether they use the site (or elements of it) "never," "seldom," "sometimes," or "frequently" (Anderson et al., 2012). This study showed that identity claims on Facebook leave relatively consistent impressions on others, that these impressions are based both on cues from the profile picture and shared self-descriptive information, and that personality impressions based on Facebook Info pages have predictive validity, especially in telling how people behave online (Ivcevic & Ambady, 2012). Unfortunately, a small amount of peer-reviewed studies have explored narcissism and Facebook use, and there are many inconsistencies in their results.

Limitations to recent studies include the possibility of observer effects or that students behaved differently because they knew their activities were being monitored, also known as the Hawthorne effect (Adair, 1984). Another limitation is that participants are asked to recall the amount of time spent on Facebook. A study by Junco (2013) found that students who reported spending more time on Facebook actually spent more time on the site than students who reported lower estimates, even though they vastly overestimated their Facebook time. Students overestimated the time they spent on

Facebook by an average of two hours per day. Put another way, even though students reported spending about two and a half hours per day, they were actually spending an average of three hours per week on Facebook (Junco, 2013).

The study filled several methodological gaps in the research by addressing the misnomer that the amount of time on Facebook is somehow equal to the amount of content that is posted on Facebook. A person could spend hours on Facebook and never post a single update, yet someone else could send forty status updates in ten-second intervals throughout the day. A Microsoft Excel formula will be utilized to count the occurrences of specific pre-canned phrases used by Facebook that identify certain activity, such as "profile picture changed" or "photo", thus resulting in a numeric representation of the participant's overall activity during a specific, one-month timeframe. Overall Facebook activity can also be broken down into smaller categories, such as how many pictures are posted, how many times a person changed the profile picture, and how many hyperlinks were shared with others in their network. The numbers of these activities can then be analyzed with NPI scores to infer possible relationships.

This study addressed the lack of inquiry into the behaviors of older adults who use Facebook. By recruiting participants from Walden University Participant Pool, there is a greater chance of targeting older adults who are continuing their higher education, rather than undergraduate students. According to Walden University's 2014 demographics of undergraduate and graduate students, 33.3% of students are aged 30-39, 28.6% are aged 40-49, and 15.8% are ages 50-59. Only 16.3% of students are ages 24-29, and an even smaller 6% are younger than age 23 or older than 60 years old (Walden University,

2014). This means that 77.7% of the student population at Walden University will be older than the ages sampled by the current literature.

Summary

Facebook is the world's largest, most trafficked social media website and allows users to control their online profiles and content. Facebook behaviors are complex, and the research concerning narcissistic traits on this website is conflicted. Currently, variables such as profile picture changes, status updates, number of friends, and frequency of use have been explored to find a relationship with NPI scores. While many studies agree with each other on certain variables, no one study has tied all available findings together to form a valid conclusion as to which behaviors can predict high trait narcissism. This study filled a gap in research by providing more evidence about the exhibition of subclinical narcissistic traits on Facebook.

Subclinical narcissistic traits are being observed on Facebook (Kapidzic, 2008; Mehdizadeh et al., 2010), but the extent of which variables predict these traits is still unknown. Although subclinical narcissistic traits are less severe than those observed as part of NPD, they can still be troublesome in the workplace. In most companies, a team effort is needed by all employees to ensure that goals are met and the company mission moves forward. Westerman et al., (2012) stated that a rising tide of narcissism would present significant problems for organizations, their productivity, and long-term viability. Lubit (2002) stated that narcissistic managers are likely to build toxic, unproductive work environments. By investigating the relationship between Facebook use and subclinical narcissistic traits, hiring professionals and managers can make better decisions about

potential candidates and thus avoid some of the issues that accompany employees who are high in subclinical narcissistic traits. The structure and methodology of this study is outlined in Chapter 3 to clarify how these variables were explored for potential practical application.

Chapter 3: Research Method

Introduction

Subclinical narcissistic traits can be quite problematic, especially in the workplace, where teamwork is especially important (Westerman et al., 2012). Identifying which applications of Facebook predict higher rates of narcissism will allow for a greater understanding of how this population uses Facebook to achieve their goal of maintaining their grandiose self-views. In Chapter 3, I explain the methods used to answer the research questions and identify which hypotheses were supported or refuted. In addition to a detailed explanation of all methods used in this study, a justification and rationale are provided for the sampling approach, regression analysis, and instrumentation choice. Chapter 3 concludes with a discussion of the ethical implications of this study.

Research Design

A correlational, quantitative research design was used to examine the relationships between subclinical narcissistic traits and the frequency of Facebook behaviors. A quantitative design using a combination of observation and survey methodology was appropriate for this study because of the possibility of investigating the relationship between an outcome variable and five predictor variables. A correlational design allowed for determination of any relationships that may exist between subclinical narcissistic traits and Facebook use. A correlational design was selected over a true experimental design because of the lack of a control group, limitations in access to a random selection of participants, and no manipulation of any of the variables. A

limitation to a correlational design is that causality cannot be assumed, even if correlations exist.

Methodology

Sampling Strategy

The participants of this study included individuals aged 18 and older who currently had Facebook accounts. Demographic information including age and gender was collected. Probability sampling was not possible because Facebook restricts users' ability to contact random users. Facebook enforces this by an algorithm that recognizes network ties; if a user is found to have violated the algorithm by contacting random users, the user's account will be suspended. The participants in this study were a convenience sample from a variety of locations. Individuals were only excluded if they were younger than 18 years or did not complete a survey. The Walden University Participation Pool was used to recruit undergraduate and graduate students for the study. Walden University has a diverse group of students of all ages who are geographically spread throughout the United States and the world.

Participants were also recruited by an approved Facebook group page that featured a button that sent potential participants to the research account. Facebook also created a section of the "Friends" tab on a Facebook page called "People You May Know," which showed friends of participants. The participants retained the autonomy to friend the researcher or ignore the request, thus maintaining the voluntary nature of the study. Other forms of recruitment included the use of one IRB-approved flyer (Appendix B) placed in publicly accessible locations such as Starbucks and community boards. A

list of these locations can be found in Appendix D. Another approved recruitment strategy was the use of a LinkedIn posting.

Sample Size

Sample size is calculated by using power analysis, which allows the researcher to determine the sample size required to detect an effect of a given size with a given degree of confidence. A power level of .8 is standard for research (Cohen, 1988). The effect size, which is included in a power analysis, is the strength of the connection between the variables. In psychological research, a medium effect size (.15) is acceptable (Cohen, 1988). The power analysis also takes into account the number of predictor variables included in the study, such as the number of uploaded photos, shared content, Facebook friends, and profile picture changes, in this case. Finally, the alpha level is the probability of coming to the wrong conclusion;.05 is the standard alpha level for psychological research (Cohen, 1988). A computerized a priori power analysis computed by Soper (2015) showed that for a stepwise multiple regression study with five independent variables, a sample size of 91 participants was required.

Procedures and Data Collection

Participants agreed to participate in this study by "friending" the research Facebook account named "Clinical Observation Dissertation." A link to this Facebook page was provided through the Walden University Participant Pool. The informed consent document was located on the main page and will explain the nature of the study as well as potential risks and benefits. The informed consent indicated that the text from the Facebook page would be collected and analyzed. At any time, participants could

“unfriend” the research Facebook page and be automatically withdrawn from the study. Once a participant had “friended” the research Facebook page, I could view the participant's activity just as I could view the activity of any other person in my online network. Each participant received a unique participant code with a link to the survey through Facebook instant messenger.

Microsoft Excel formula for counting words or phrases. Microsoft Excel allows for large amounts of data to be analyzed by using specific formulas to count the number of times a specific phrase occurs. The formula used for this study was as follows: = SUM((LEN(<range>) - LEN(SUBSTITUTE(<range>, <cell>, ""))) / LEN(<cell>)). From each cell in the range, SUBSTITUTE removed the entire phrase from the text, and then LEN calculated the length of the text without the phrase. The number was then subtracted from the length of the text with the phrase that was being searched. SUMPRODUCT provided a list of character counts per cell and then summed the numbers and returned the total for all of the cells in the specified range (Bruns, 2015). For example, 3 months of Facebook content can contain a plethora of different words. This methodology counted only words such as *profile picture* or *shared* and excluded any other words not typed into the formula.

The participant codes and the range in which they were searched were unique to the user and depended on how much content was posted. For example, someone who posted a small amount of content would have a smaller range, such as A3:A150, whereas a larger range might have been A3:A4000. For verification purposes, one could also use the “Find All” function in Excel to search how many times the phrase occurred. This

would have been time consuming; the use of a formula was more efficient and produced the same results. A template was created with a macros-enabled formula and then duplicated for each participant.

Total amount of Facebook activity. Researchers in the past have used self-report measures to ascertain the frequency of Facebook use. Self-reports have limitations because the user rarely estimates the correct amount of time that Facebook was used (Junco, 2012). Facebook marks every post generated with a specific user name in phrases such as “John Doe shared Fox 8 News’s photo” or “John Doe's photo.” Counting the amount of times that a user's name occurred provided an objective measure of the user's overall activity level. This proved to be more accurate than coding or rating because the method could be replicated by anyone and did not require interrater reliability.

Using the same procedure for measuring the total amount of Facebook frequency, I also measured the number of photos that were uploaded, the number of links that were shared with others, the total number of profile picture changes, and relationship status. Past research highlighted a need for alternate methods to measure the use of these applications (Bergman et al., 2011; Mehdizadeh, 2010; Rosen et al., 2013). Facebook marks each photo uploaded by posting the user's name and then the word *photo*. Each profile picture change is marked by “<username> changed her/his profile picture.” When a Facebook user shares a link to something interesting, the post states, “<username> shared,” followed by a link to a news story or other Internet content.

Survey

Once a participant added him- or herself to the study, a survey link was sent through Facebook's instant messaging application. Only the researcher and the participant could view the contents and history of a Facebook message, unless another person was added to the conversation (Facebook, 2015b). The survey link was hosted by SurveyMonkey, a web survey development cloud-based company. SurveyMonkey guarantees its security by using a Secure Sockets Layer encryption, multimachine backup, server authentication and data encryption (SurveyMonkey, 2015). The NPI was copied and pasted into a SurveyMonkey template, along with demographic questions. This survey was titled "Trends in Social Media." Results were updated in real time.

Instrumentation

The NPI was developed by Raskin and Hall (1979) after the inclusion of a new category, narcissistic personality disorder, in the *Diagnostic and Statistical Manual of Mental Disorders*, *Third Edition* (DSM-III). This measure of subclinical narcissism is a 40-item forced-choice questionnaire that asks participants to choose between two statements such as "I find it easy to manipulate people" and "I don't like it when I find myself manipulating people" (Raskin & Hall, 1979). The NPI was originally developed to explore individual differences in narcissism as those differences may be expressed in nonclinical populations (Raskin & Terry, 1988). There is no cutoff score to indicate narcissism. The NPI is not intended for clinical diagnosis.

Reliability and validity. The NPI is the most widely used measure of subclinical narcissism (del Rosario & White, 2005). Costa and Widiger (1994) contended that,

compared to the five-factor model of personality (FFM), the NPI measures high extraversion and low agreeableness. Raskin and Terry (1988) reported a factor analysis of NPI items, which produced seven factors—authority, exhibitionism, superiority, entitlement, exploitativeness, self-sufficiency, and vanity—related to narcissism. Raskin and Hall (1981) and Raskin and Terry reported significant correlations between NPI scores for both observational and self-report personality scores. Raskin and Novacek (1989) reported a number of significant correlations between the NPI and Minnesota Multiphasic Personality Inventory (MMPI) scales. The NPI correlated positively with MMPI Scale 9 (Ma; $r = .29$, $p < .01$) and negatively with MMPI Scales 2 (D; r = -.36, $p < .01$, 7 (Pt, r = -.34. $p < .01$), and 0 (SI; r = -.60, $p < .001$), as well as the scales for repression, anxiety, and ego control.

Reliability. An item analysis was performed on each item of the NPI by comparing the 20 highest scoring students who marked the narcissistic alternative with the 20 lowest scoring students who marked the narcissistic alternative. Eighty items met the criterion of significance at or below .05. Split-half reliability for these 80 items was .90. The 80 items were divided into two forms, Form A and Form B (Raskin & Hall, 1979). The alternate form reliability of the NPI was .72. A reliability coefficient of .72 between alternate forms of the NPI administered eight weeks apart suggests that the trait or response tendency measured is a reasonably stable one (Raskin & Hall, 1981).

Correlations between the NPI and the Millon Clinical Multiaxial Inventory (MCMI-I; Millon, 1983) have been obtained with the largest correlation between the NPI

and the Narcissism scale of the MCMI-I (r = .66; Prifitera & Ryan, 1984), indicating that a similar construct is being measured.

Factor analysis and construct validity of the NPI have yielded four subscales or factors (Emmons, 1984, 1987):

1. Exploitiveness/entitlement
2. Leadership/authority
3. Superiority/ arrogance
4. Self-absorption/self-admiration

Internal consistencies were .86, .74, .70, and .69 for the total scale and Factors 1 through 4, respectively.

Rationale. The NPI was appropriate for this study because it provided a measurement that has longstanding research supporting its reliability and validity. The NPI was specifically designed to assess subclinical narcissistic traits outside of the clinical setting, which was crucial for this study. Bergman et al. (2011) administered the NPI to 374 undergraduate students and compared their scores to self-reported social networking site (SNS) usage, number of SNS friends, and other variables. McKinney et al. (2012) administered the NPI to 233 undergraduate students and compared their scores to self-reported SNS usage. The authors of the NPI have made the assessment free to use and available from numerous sources.

Research Questions and Hypotheses

Research Question 1

Will the numbers of profile picture changes, shared content, photo uploads, and Facebook friends have significant positive correlations with NPI scores?

Null Hypothesis 1 (H_0). The numbers of profile picture changes, shared content, photo uploads, and Facebook friends will not have significant positive correlations with NPI scores.

Alternative Hypothesis 1 ($H_{1\text{-}1}$). The numbers of profile picture changes, shared content, photo uploads, and Facebook friends will have significant positive correlations with NPI scores.

Research Question 2

Which of the following set of variables will best predict higher NPI scores by stepwise multiple regression? :

1. Profile picture changes
2. Shared content
3. Photo uploads
4. Facebook friends

Null Hypothesis 2 (H_{21}). No combination of variables will best predict higher NPI scores.

Alternative Hypothesis 2 ($H_{1\text{-}2}$). Shared content and Facebook friends will best predict higher NPI scores.

Research Question 3

Will gender moderate the relationship between the number of profile picture changes, shared content, photo uploads, or Facebook friends?

Null Hypothesis 3 (H_{03}). Gender will not moderate the relationship between the number of profile picture changes, shared content, photo uploads, or Facebook friends.

Alternative Hypothesis 3 ($H_{1\text{-}3}$). Gender will moderate the relationship between the number of profile picture changes and shared content.

Data Analysis

Survey data were exported from Survey Monkey into a Microsoft Excel spreadsheet and then imported into the Statistical Package for Social Science (SPSS), version 21. SPSS was used for hypothesis testing and descriptive statistics. This study analyzed the independent variables (frequencies of Facebook use) against the dependent variable (NPI scores). NPI scores were from 0-40, and although there was no cutoff score, higher scores indicated subclinical narcissism. The five independent variables were (a) profile picture changes, (b) shared content, (c) photo uploads, (d) number of Facebook friends and (e) gender. A stepwise multiple regression analysis was used to examine the predictive relationships of each independent variable while controlling for the effects of the other independent variables. The goal was to determine which independent variable was the best predictor of the dependent variable,

Ethical Considerations

For this study, the approval of Walden University's Institutional Review Board was received prior to data collection. Once this approval was obtained, the researcher

recruited participants for the study using Walden University's Participant Pool, Facebook, flyers, and LinkedIn. As discussed earlier, only the researcher had access to the separate Excel spreadsheets that recorded participant names and codes. The informed consent explained the nature of this voluntary study and is available in Appendix A. Participants were informed that they could withdraw from the study at any time by "unfriending" the research Facebook page. Walden University requires the researcher to maintain all raw data— spreadsheets, questionnaire results, and so forth—for no less than 5 years after completion of this doctoral study (Walden University, 2011). Participation in this study did not result in emotional duress or mental strain requiring professional services. The participants were not provided compensation for their participation.

Summary

This study explored the possibility that Facebook activities can predict higher NPI scores. The purpose was to provide potential evidence of a growing trend of subclinical narcissistic traits on social media. The NPI and demographic questions were administered to evaluate this possibility. Multiple regression analysis was used to compute data and determine whether or not relationships existed. Ethical considerations were observed throughout the course of this study. The purpose, intent, and procedures for this study were presented to Walden University's IRB. Only upon approval did I interact with human subjects for this study. By using quantifiable data, statistical significance can be determined according to measurable outcomes of the assessment tools. Studies that have explored subclinical narcissistic traits and Facebook have suggested additional research to identify which applications predict higher rates of narcissism (Alloway et al., 2014;

Bergman et al., 2011; Carpenter, 2001; Ong et al., 2011). Information regarding findings and implications of the results are reported and discussed in Chapters 4 and 5.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to examine the relationship between Facebook use and the exhibition of subclinical narcissistic traits. The study also explored how gender moderates the number of profile picture changes, shared content, photo uploads, or Facebook friends. The study was designed to answer the following research questions and corresponding hypotheses.

Research Questions and Hypotheses

Research Question 1

Will the numbers of profile picture changes, shared content, photo uploads, and Facebook friends have significant positive correlations with NPI scores?

Null Hypothesis 1 (H_0). The numbers of profile picture changes, shared content, photo uploads, and Facebook friends will not have significant positive correlations with NPI scores.

Alternative Hypothesis 1 ($H_{1\text{-}1}$). The numbers of profile picture changes, shared content, photo uploads, and Facebook friends will have significant positive correlations with NPI scores.

Research Question 2

Which of the following set of variables will best predict higher NPI scores by stepwise multiple regression?

1. Profile picture changes
2. Shared content

3. Photo uploads
4. Facebook friends
5. Gender

Null Hypothesis 2 (H_{21}). No combination of variables will best predict higher NPI scores.

Alternative Hypothesis 2 ($H_{1\text{-}2}$). Shared content and Facebook friends will best predict higher NPI scores.

Research Question 3

Will gender moderate the relationship between the number of profile picture changes, shared content, photo uploads, or Facebook friends?

Null Hypothesis 3 (H_{03}). Gender will not moderate the relationship between the number of profile picture changes, shared content, photo uploads, or Facebook friends.

Alternative Hypothesis 3 ($H_{1\text{-}3}$). Gender will moderate the relationship between the number of profile picture changes and shared content.

Data Collection

Several recruitment strategies were employed following IRB approval. The first recruitment strategy involved the use of Walden University's Participant Pool. The second mode of recruitment was the use of an approved flyer (Appendix B), which was placed in publicly accessible establishments such as Starbucks in Fredericksburg, Virginia (Appendix D). The third recruitment method allowed the researcher to request participants based on Facebook's "People You May Know" section, which lists friends-

of-friends (Appendix F). Another method of recruitment involved using LinkedIn (Appendix E).

Issues With Data Collection

During data collection, Facebook disabled the research account named "Clinical Observation Dissertation", citing violations to the naming convention of Facebook's "Terms of Use". Because "Clinical Observation Dissertation" was not a real name in any form, the page was disabled and could not be accessed. There were 29 participants who had already friended the page and completed a survey when this occurred. The IRB was notified within several hours of this event, and a new method for continued data collection was approved. A new account was created using the researcher's middle and last name, but all other aspects of the page, including informed consent, remained the same. Participants' Facebook names and their codes were recorded on separate excel spreadsheets that were password protected. IRB approved the communication to these participants for the option of re-adding themselves to the study with an approved script, located in Appendix F.

Collecting Facebook Data

Three months of activity were collected by copying content from a consecutive, 3-month time period in 2016 (approximately January 1-March 31). The first step in the collection process was to navigate to the Facebook page of the participant. The second step was to left-click on the first day of the selected timeframe and drag the mouse downward until all three months of activity were highlighted. Facebook marked each post with a timestamp, making this task fairly easy to accomplish. The selected content was

copied and pasted into a plaintext document. A plaintext document only supports letters, numbers, symbols, and spaces; it does not support text formatting, pictures, or hyperlinks (Christensson, 2010). This stripped out any multimedia such as advertisements, pictures, or videos, leaving only text to analyze. The data were copied and pasted from the plaintext file to a Microsoft Excel spreadsheet.

Participants were assigned a code consisting of a letter and a number. The researcher recorded the name of the Facebook page and the participant code into two password-protected Microsoft Excel spreadsheets. The Microsoft Excel spreadsheets were stored on a password-protected laptop and kept with the researcher at all times.

Response Rates

Data collection began on March 28, 2016, and ended on July 29, 2016. Ninety-eight participants friended the research Facebook page; however, only 95 participants completed a survey. Thus, the researcher used 95 completed surveys and corresponding participant Facebook pages for analysis. Two cases were excluded as outliers, for a final sample size of 93.

Characteristics of the Sample

A summary of the sample's (N = 93) demographic characteristics is provided in Tables 1 and 2. More women (75.3%) than men (24.7%) responded to the study. Race demographics were not collected due to the diversity of the sample. The Walden University participant pool was used for recruitment. Students from all over the world had the potential to participate. The mean age for participants in this study was 37.62 years (SD = 12.30).

Table 1

Gender Statistics

		Frequency	Percent	Valid percent	Cumulative percent
Valid	Male	23	24.7	24.7	24.7
	Female	70	75.3	75.3	100.0
	Total	93	100.0	100.0	

Assumptions Tested for Stepwise Multiple Regression

Assumptions were tested using procedures in SPSS based on peer-reviewed statistical literature. There are eight assumptions for a multiple regression analysis (Field, 2013; Laerd Statistics, 2015). The first and second assumptions are that the dependent variable is continuous and independent variables are continuous or categorical. The third assumption was met with an independence of residuals, as assessed by a Durbin-Watson statistic of 2.045. During assumption testing, two outliers in the data were identified and removed based on studentized deleted residuals greater than ±3 standard deviations and leverage values greater than 0.2.

The fourth assumption of linearity was met, as assessed by partial regression plots and a plot of standardized residuals against the dependent variable. There was homoscedasticity (Assumption 5), as assessed by visual inspection of a plot of standardized residuals versus standardized predicted values. There was no evidence of multicollinearity (assumption six), as assessed by tolerance values less than 10, which indicated no redundancy amongst the predictors in the model. Assumption seven showed (after removal of two outliers) that there were no studentized deleted residuals greater than ±3 standard deviations, no leverage values greater than 0.2, and no values for Cook's

distance above 1. The dependent variable did not initially pass the assumption of normality. If the variance is proportional to the mean, square-root transformation is preferred (Manikandan, 2010). This happens more in cases where variables are measured as counts, which all of the variables were, excluding gender. After the dependent variable was transformed using the square-root method, the final assumption of normality was met upon inspection of the histogram, as well as the Shapiro-Wilk statistic of .581.

Responses to the NPI

The NPI is composed of 40 forced-choice paired items. The NPI is scored by the sum of the narcissistic responses as indicated by the answer key. There is no cut-off for subclinical narcissism, and total scores range from 0-40, with scores closer to 40 indicating subclinical narcissism. The NPI mean was 13.33 (SD = 5.86), which was slightly lower than the expected mean (M=20). The range of scores for the NPI was 2 to 30. These values indicate that the participants did not choose the most extreme answers, which would have indicated subclinical narcissistic attitudes.

Table 2

NPI Frequency Statistics

		Frequency	Percent	Valid percent	Cumulative percent
Valid	2	1	1.1	1.1	1.1
	4	4	4.3	4.3	5.4
	5	1	1.1	1.1	6.5
	6	4	4.3	4.3	10.8
	7	8	8.6	8.6	19.4
	8	3	3.2	3.2	22.6
	9	3	3.2	3.2	25.8
	10	5	5.4	5.4	31.2
	11	6	6.5	6.5	37.6
	12	8	8.6	8.6	46.2
	13	11	11.8	11.8	58.1
	14	7	7.5	7.5	65.6
	15	4	4.3	4.3	69.9
	16	6	6.5	6.5	76.3
	17	1	1.1	1.1	77.4
	18	3	3.2	3.2	80.6
	19	3	3.2	3.2	83.9
	20	1	1.1	1.1	84.9
	21	4	4.3	4.3	89.2
	22	3	3.2	3.2	92.5
	23	3	3.2	3.2	95.7
	24	1	1.1	1.1	96.8
	27	1	1.1	1.1	97.8
	29	1	1.1	1.1	98.9
	30	1	1.1	1.1	100.0
	Total	93	100.0	100.0	

Data Analysis Results

R^2 for the overall multivariate regression model was 5% with an adjusted R^2 of 0, a small size effect according to Cohen (1988). See Table 4. R^2 is the percentage of the total variation that can be explained by this regression model. The largest value will always occur with all of the predictor variables included, even if those variables do not significantly contribute to the model. R^2 will only decrease or stay the same as variables are removed. The adjusted R^2 utilizes the variances instead of variations, and unlike the R^2, will actually increase with fewer variables or smaller sample sizes (Cohen, Cohen, West & Aiken, 2003). There were likely too many independent variables in this model and too small a sample size, which created an inflated model with no predictive value. Future directions in variable selection as well as sample size are discussed in chapter 5.

Research Questions 1 and 2

The first research question was designed to examine whether the numbers of profile picture changes, shared content, photo uploads, and Facebook friends have significant positive correlations with NPI scores. The second research question asked which set of the above-mentioned variables best predict higher NPI scores by stepwise multiple regression. The hypotheses were tested using Pearson's *r* coefficient of correlation. There was no statistically significant correlation between the numbers of profile picture changes (r (91) = -.07, p = .249), shared content (r (91) = .08, p = .230), photo uploads (r (91) = -.02, p = .436), and Facebook friends (r (91) = -.04, p = .343) with NPI scores. SPSS will not compute a stepwise multiple regression if none of the

independent variables significantly predicts the dependent variable. With regard to the research questions, this researcher failed to reject the null hypotheses.

Research Question 3

The third and final research question was designed to explore whether gender would moderate the relationship between the numbers of profile picture changes, shared content, photo uploads, or Facebook friends. Because gender is categorical variable, a one-way ANOVA was conducted to ascertain whether there were any statistically significant differences between the means of profile picture changes, shares, photos, Facebook friends, age, and NPI scores between males and females. The assumptions for a one-way ANOVA require the presence of a continuous dependent variable (NPI); an independent variable that is categorical with two or more independent groups (gender); independence of observations; no significant outliers; and normally distributed data.

There was homogeneity of variances, as assessed by Levene's test for equality of variances (Profile Picture changes $p = .298$, Shares $p = .927$, Facebook Friends $p = .908$, Age $p = .472$, NPI $p = .644$). The assumption of homogeneity of variances was violated for the photos variable, as assessed by Levene's test for equality of variances ($p = .002$). Therefore, photos were not interpreted as part of the ANOVA.

There were no statistically significant differences in the means of profile picture changes (F (1,91) = 1.511. $p = .222$), shares (F (1,91) = .015. $p = .902$), Facebook friends (F (1,91) = 1.983. $p = .162$), age (F (1,91) = .000. $p = .990$), or NPI scores (F (1,91) = 1.511. $p = .222$), between male and female groups. This researcher failed to reject the null hypothesis.

Table 3

Correlations

		NPI	Profile picture changes	Shares	Photos	Friends
Pearson correlation	NPI	1.000	-.071	.077	-.017	-.043
	Profile picture changes	-.071	1.000	.063	.395	.043
	Shares	.077	.063	1.000	.081	.133
	Photos	-.017	.395	.081	1.000	-.044
	Friends	-.043	.043	.133	-.044	1.000
Sig. (1-tailed)	NPI	.	.249	.230	.436	.343
	Profile picture changes	.249	.	.275	.000	.342
	Shares	.230	.275	.	.220	.102
	Photos	.436	.000	.220	.	.336
	Friends	.343	.342	.102	.336	.

Note. $N = 93$.
*$p < .05$.

Table 4

ANOVA

		Sum of squares	*df*	Mean square	*F*	Sig.
Profile picture changes	Between groups	5.410	1	5.410	1.511	.222
	Within groups	325.752	91	3.580		
	Total	331.161	92			
Shares	Between groups	105.899	1	105.899	.015	.902
	Within groups	635780.380	91	6986.598		
	Total	635886.280	92			
Friends	Between groups	438200.747	1	438200.747	1.983	.162
	Within groups	20104366.952	91	220927.109		
	Total	20542567.699	92			
Age	Between groups	.025	1	.025	.000	.990
	Within groups	13931.803	91	153.097		
	Total	13931.828	92			
NPI	Between groups	89.367	1	89.367	2.641	.108
	Within groups	3079.299	91	33.838		
	Total	3168.667	92			

Summary

The findings from the correlational regression analyses and one-way ANOVA reveal that all three null hypotheses should be kept, and that the alternative hypotheses should be rejected. Specifically, there were no statistically significant relationships between NPI scores and profile picture changes, shares, friends, and photo uploads. Additionally, gender did not appear to moderate any relationships between profile picture changes, shares, friends, or photo uploads. However, examination of the model revealed that further analysis of the independent variables should be explored, specifically concerning which variables should be left out of the model. I address the findings and conclusions for the study in Chapter 5. Limitations are addressed, and recommendations for future action and further research are provided.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to examine the relationship between NPI scores and Facebook friends, shares, photo uploads, profile picture changes, and gender. Research in the area of Facebook and subclinical narcissism is inconsistent. Twelve articles have explored similar variables, including self-reported numbers of status updates (Alloway et al., 2014; McKinney, Kelly, & Duran, 2012), profile pictures (Bergman et al., 2011; Kapidzic, 2013), number of Facebook friends (Buffardi & Campbell, 2008; Ong et al., 2011; Rosen et al., 2013), self-reported frequency of use (Mehdizadeh, 2010; Pettijohn et al., 2012; Ryan & Xenos, 2011), and NPI scores (Carpenter, 2011; Davenport et al., 2014) .The one variable that the 12 studies have in common is that all of them used self-reported data with regard to Facebook activity. Therefore, this study was designed to expand on the previously used methods and replace subjective (self-report) data with objectively collected data.

Interpretation of the Findings

In Chapter 2, I explained there has been no consistent research addressing the issue of self-reported Facebook activity and NPI scores. Findings of this study revealed that there were no significant relationships between the NPI, and profile picture changes, gender, friends, photo uploads, or shares. When controlling for profile picture changes, Facebook friends, shares, photos, and gender, only 5% of the variance was accounted for by NPI scores. According to social learning theory, learning is a purely cognitive process than can take place through simple observation of the actions of others, even without direct reinforcement (Bandura, 1966). Social learning theory can possibly explain why

activities, such as posting photos, news articles, and acquiring Facebook friends, have become the new way of sharing information.

The results of this study provide an argument against the assumption that sharing photos and updates about oneself on social media is symptomatic of narcissistic traits. A lack of significant relationships between NPI scores and Facebook activity demonstrated that another motivation for social media use may be occurring. Perhaps users have learned through the observation of others that Facebook is an effective way of communicating and connecting with others. The idiom "a picture is worth a thousand words" may best sum up the trend of sharing photographs as a quicker, more effective way of sharing a story. In a study by Mendelson and Papacharissi (2010), researchers found that the closer the relationships shared among friends, the more frequently they appeared in photos with others. These photos served as proof of individuals' closeness to their peer group based on both the quantity and nature of the pictures displayed.

Facebook also appears as a way for users to share and celebrate their ethnic heritages, as well as communicate about societal issues involving race. Grasmuck, Martin, and Zhao (2009) executed a qualitative analysis of the favorite quotes of Facebook users and found marked differences between ethnic groups. For example, the quotations selected by African Americans were highly infused with inspirational quotations about racial injustice from literature and popular culture, as well as religiously themed quotes. In contrast, Caucasian and Vietnamese students favored short, one-liner quotes that echoed themes relating to acceptance and sometimes social exclusion. The

authors noted that Caucasian and Vietnamese students almost never selected quotes that signaled racial or ethnic identification.

Clearly, Facebook is providing a complex communication and sharing service to its users. A Facebook user can upload a batch of video clips and photos with captions and convey the experience of an event in real time. This learning is then reinforced when Facebook users meet face-to-face with other users and discuss what they observed on Facebook and how it impacted them. Similar to how e-mail replaced letter writing, social media has simply made it easier to share with others and may not fulfil a narcissistic need to self-promote as once hypothesized.

NPI Scores

Participants in the study did not endorse extremely low or high scores on the NPI. Restriction of range was an issue with NPI scores. The range of scores in this study was 2-30, and the majority of scores fell between 10 and 16 out of a possible 40 (Table 4). The value of *r* will be greater if there is more variability among observations (Goodwin & Leech, 2006). A broader range of scores that traveled closer to 40 would have provided an unrestricted range, and a better chance of a relationship. An explanation for the lack of extreme scores on the NPI could be that participants chose the least narcissistic choice of the paired options, because they truly agreed with it or it appeared as the most acceptable answer. Participants were not made aware that they were taking the NPI but could have detected the dichotomy in the answer choices and selected the least narcissistic answer.

It is possible that participants did not endorse extreme scores because they identified with the least narcissistic choice. The mean NPI score for this study provided

some evidence against the idea that participants were motivated to choose socially acceptable answers. If this had been the case, then scores would have been extremely low, rather than falling just below the expected mean. It is more likely that participants were less narcissistic overall.

Table 4 (NPI Frequencies Statistics) illustrates that the range of scores was 2-30, with the majority of the sample scoring just 13 (11.8%). The second most frequent score was 12 (8.6%). The third most frequent was 14 (7.5%). That is not to say that some participants did not score higher on the NPI. Among participants, 1.1% scored 27, 29, and 30, which would indicate more subclinical narcissistic attitudes as the scores travel closer to 40. Narcissistic Personality Disorder is diagnosed in 2-16% of clinical populations and 0.5-1% of the general population, with 50-75% of those diagnosed being male (American Psychiatric Association, 2013). It is unknown what percentage of the general population exhibits subclinical narcissism, but the distribution of the NPI scores is similar to the distribution of NPD in the general population. Given that subclinical narcissism is similar to clinical narcissism but exists to a lesser degree (Bergman et al., 2011), the NPI scores may be an accurate representation of the sample. However, it should also be pointed out that the majority of participants were female (75.3%), which could also explain the lower rates of subclinical narcissism, considering that narcissism is found more in males than females (American Psychiatric Association, 2013).

Other Explanations for Findings: Staying Connected

Prior findings that associated social media, such as Facebook and Twitter, with higher levels of subclinical narcissism may have been correct at the time that the studies

were conducted (Bergman et al., 2011; Carpenter, 2011; Davenport et al., 2014). It may be that in the last quarter of 2016, people used Facebook and Twitter because of a desire to stay connected and up to date on the latest news around the world. This would be consistent with the work of Bergman et al. (2011), who stated that perhaps there is nothing narcissistic about this desire and that social media could now just be the way in which people across generations share what is going on in their lives.

Gender and staying connected. The urge to stay connected and share with others appears to be strongly related to gender. Thompson and Lougheed (2012) found that nine of 10 undergraduate women reported that Facebook was part of their everyday activities. Hoffman (2008) asserted that when it comes to social media activities, women far exceed men in the time that they spend on these websites. Perhaps females are spending more time on Facebook as a gender, rather than due to subclinical narcissistic traits.

Implications

Given the lack of significant findings, results from this study contribute to the small but growing literature indicating that subclinical narcissism may not play a role in Facebook use. These results may point to a more positive view of social media use, rather than the negative, narcissistic stigma that it has garnered in previous years. As of the second quarter of 2016, Facebook had 1.71 billion monthly active users (Statistica, 2016). Perhaps in earlier studies, when Facebook was still relatively novel, the assumption of narcissism was intuitive because most users were college students. Now, in the last months of 2016, Facebook is clearly a permanent fixture in the lives of 1 of 7 people on the planet, and not just the younger generations.

Social Change

Chapter 2 highlighted the various negative connotations that social media sites like Facebook and Twitter have acquired through the media and scholarly literature. New technology has always created skepticism with older generations, whose members tend to forget what was said about the technology of their time. For example, Socrates warned that writing would foster forgetfulness in learners because they would not use their memories. He also despised the written word because "it cannot defend itself in dialogue, and thus cannot effectively teach anything worth knowing" (Plato, 399-347 BCE).

Gessner was a Swiss scientist who attempted to index every available book in the 16th century and published the *Bibliotheca universalis.* After the invention of the printing press, he wrote a book that described how the modern world would become overwhelmed with information and how the overabundance was both "confusing and harmful" to the mind (Bell, 2010). The same dire warnings were issued after the emergence of the radio, television, personal computer, and Internet. Perhaps these fears and accusations are only part the natural evolution of technology.

Changing popular opinion: millennials are not narcissistic. Facebook use is not the only variable that researchers have associated with narcissism. Millennials (those who are currently between 20 and 36 years of age) have been called narcissistic by several news outlets (television and print). This study had generational diversity (Table 2), with the majority of participants falling one standard deviation above and below the age of 37. Inadvertently, this study found that the Millennial generation (as well as older generations) scored well below the expected mean on the NPI. These results challenge

older studies that found Millennials to be more narcissistic than earlier generations. This is important because Millennials are beginning to emerge into the job market and may be faced with these biases before their merits are evaluated.

One of the most cited studies in popular news media is that by Twenge et al. (2008), who conducted a meta-analysis of 85 samples of American college students from 1982-2006. The authors found that the mean score for the NPI in samples collected in 1982 was 15.06, and the mean for samples collected in 2006 was 17.29, with a small-to-medium effect size (.20 and .50) in accordance with Cohen (1977). This is not a large change, only 2.23 points over a span of 24 years. This means that younger generations only endorsed two more questions than previous generations, yet this statistic was used to provide proof and justification by many articles and news media outlets.

There are many variables that could cause the endorsement of two additional forced-choice statements. Parenting styles drastically changed from the 1980s to 2006 and even to the present day. Parental acceptance, inductive discipline, nonpunitive punishment practices, and consistency in childrearing have consistently been associated with positive developmental outcomes in children (Gray & Steinberg, 1999). This type of parenting could have contributed to children having higher self-esteem and a sense of being special and valued.

Misleading data. *Time Magazine* featured a cover story entitled “The Me Me Me Generation: Millennials Are Lazy, Entitled Narcissists Who Still Live With Their Parents: Why They’ll Save Us All” (Stein, 2013). The cover featured a Millennial posing for a selfie on a smartphone. The article cited research from the National Institutes of

Health (NIH) that stated, “58% more college students scored higher on a narcissism scale in 2009 than in 1982,” and yet failed to have a citation or a reference list so that the data could be examined by the reader. Furthermore, a brief literature search found a different perspective from three authors at NIH in a 2010 paper. Roberts, Edmonds, and Grijalva (2010) explored data from three studies, as well as their own, and concluded something different. Roberts et al. (2008) combined data from the meta-analyses of Donnellen et al. (2009), Trzesniewski et al. (2008), and Twenge and Foster (2008), as well as their own and found “little to no trend over time” in their meta-analysis.

Many variables change from generation to generation, but none have captured the public eye as much as the alleged “Millennial narcissism epidemic”. For example, the Flynn Effect is the gain in intelligence test scores over time. This means that younger generations tend to have higher intelligence test scores than the generations before them, due to several variables such as improvements in education and technology (Flynn, 2006). Such a change between generations is empirically supported and significant enough to change death penalty laws and yet is not discussed in popular media. Developmental trends are no different. Roberts et al. (2010) stated that every generation of young people is more narcissistic than their elders, not because of cultural changes, but due to age-related developmental trends. This study may lead to positive social change by adding to the small but growing pool of literature that questions the labeling of Millennials as the “Me Me Me Generation” (Stein, 2008).

Limitations of the Study

External Validity

All of the participants were contacted through the Walden participant pool, flyers, LinkedIn, and Facebook. Given the broad global range of Walden's students, it can be assumed that participants were geographically spread throughout the United States and possibly other countries. Seventy-five percent of the sample consisted of female participants, making the study less generalizable to men. The lack of equal gender distribution could have impacted the lack of high scores on the NPI. There is no literature on the distribution of subclinical narcissism in the general population, but 50-75% of clinical narcissism cases are observed in males (American Psychiatric Association, 2013). Furthermore, the lack of variability in the sample (75% female) could have contributed to the lack of correlations. The range of scores in this study was 2-30, and the majority of scores fell between 10 and 16 out of a possible 40 (Table 4). The value of *r* will be greater if there is more variability among the observations (Goodwin & Leech, 2006). A broader range of scores that traveled closer to 40 would have provided an unrestricted range, and a better chance of a relationship. Perhaps having more males in the sample would have increased NPI scores allowing for some type of relationship.

Internal Validity

Social desirability bias may have been problematic when participants were taking the NPI. Although anonymous surveys decrease social desirability bias (Ahern, 2005), participants may experience pressure to answer questions in a socially acceptable manner (Krumpal, 2013). This can be especially true when questions focus on perceived negative

personality traits, such as subclinical narcissism, although the participants were not made aware that the survey was the NPI.

The lack of extreme NPI scores (scores that traveled closer to 40) and range restriction were also issues for this study. Scores did not exceed 30 (out of 40) in this study but instead clustered around 13 (Table 4). That means that about 25% of possible test scores were not present, which drastically impacted correlation. Whenever a range is restricted, correlation will be reduced.

Ambiguous temporal precedence between the variables may have impacted correlational relationships. Although Facebook activity, such as the number of friends, shares, photo uploads, and profile picture changes was counted and compared to NPI scores, the actual numbers for each activity were vague because there were no expected frequencies of Facebook activity, nor were there any obvious patterns. Due to a lack of research in this area, it is also unknown whether one variable influenced another, resulting in lower NPI scores and no significant relationships.

Recommendations for Future Research

Facebook activities and their psychological underpinnings are relatively new areas of research. To date, this study is the first to capture Facebook activity and data-mine the contents for the specific words *shared*, *profile picture*, *friends*, and *photo*. Future studies should develop a methodology that would allow researchers to discriminate between photos that are uploaded in batches and single photos. Currently, if a person uploads 50 photos at one time, the keyword *photo* will only come up one time.

Whereas if 50 photos are uploaded one at a time, the *photo* keyword will be counted 50 times and provide an actual account of the activity.

Future studies should also investigate the role of gender in Facebook use. Females appear to be using Facebook more than men (Hoffman, 2008; Thompson & Lougheed, 2012), and 75% of the participants who volunteered for this study were female. It would be interesting to see what psychological factors could explain the gender differences in Facebook use. At the very least, it would be fascinating to see if an all-male study revealed any relationships between NPI scores and Facebook use.

Conclusion

Although the results from this study did not indicate relationships between NPI scores and Facebook profile picture changes, shares, friends, photos, or gender, important insights were gained about the lack of relationship between age and subclinical narcissistic traits. There continues to be a lack of research on the relationship between psychological factors and Facebook use, and this study responded to the needs of the literature by showing a lack of relationship between subclinical narcissism and Facebook use. The researcher hopes that the explanation of the limitations and the recommendations for future research will promote studies aimed at broadening our current knowledge of what psychological underpinnings motivate people to use social media outlets like Facebook.

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Appendix A: Informed Consent

Informed Consent Agreement
Please read this agreement carefully.

You must be at least 18 years of age to give your consent to participate in research. To print this informed consent, right click and choose “print”.

The researcher is in no way connected to or employed by Facebook or its affiliates. Please see Facebook terms and use for questions concerning the right to collect data from Facebook users.

You are invited to take part in a research study of the interpersonal interactions between people on a social media website, specifically the amount of posts that the “average” person authors in a given time period and how this relates to psychological theories. The researcher is inviting adult Facebook users to be in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Megan Gramm, who is a doctoral student at Walden University.

Background Information:

The researcher is only interested in an evaluation of these variables, and how they are related to one another. The researcher is NOT interested in any specific individual, their pictures, or what they say.

Rather than asking you to sign a consent form, the researcher is asking you to “friend” this page if you consent to permitting the researcher to observe your visible Facebook interactions with others. This means that at any time, you may “unfriend” this page and be immediately withdrawn from the study, no questions asked. Your continued “friendship” with this page signifies understanding of and agreement with the following terms.

At no time will ANY of your information be shared with anyone other than the researcher, to include friend lists, relationship status, location, pictures, descriptions of pictures, posts, description of posts, or any other content that you choose to share. The only type of data that will be extracted will be the text content of your Facebook page, which will be converted into numbers of specific behaviors, for example, the amount of posts that you authored in one year, or the number of pictures that you posted in a year.

Other types of data (if available) include gender and age, but no names or locations or other information which could identify you.

Procedures:
Duration of your participation: about one month. Three months your activity (such as how many times you've changed your profile picture) will be collected. This can be collected by copy and paste, and takes only a few minutes. The data is converted to text only, so that your images stay on your page, and are not taken. The text is then queried for key phrases and counted. To clarify, you will not be observed for three months, but rather, three months of your activity will be collected.

Your confidential information will be safeguarded by use of coding (instead of your name, you will be Participant 1, 2, 3, etc) - and excel spreadsheets, as well as the folder they are stored in, will be password protected and stored on an external hard drive (that is also password protected) that will remain with the researcher at all times. Your privacy settings may remain as they are and will not be asked to change.

You will be asked to complete one short survey, which will be sent to your Facebook inbox. This will take you about 5 minutes.

If surveys are not completed within two weeks of "friending", the participant will be "unfriended". No more than 1 reminder, sent via Facebook message, will be sent before the participant is "unfriended".

Voluntary Nature of the Study:

All research participation is voluntary, and you have the right to withdraw at any time, without prejudice, should you change your mind about being part of this study. You are entitled to ask questions
and to receive an explanation prior to your consent/participation.
While it is important that the researcher gather fully completed surveys, the participant has the right to discontinue and unfriend if they do not want to answer survey questions.

Risk/ Benefits of the Study:

Possible Risks:
1) Risks involve giving the researcher access to your Facebook activity, which some people might find to
be intrusive.

Possible Benefits:
1) When your participation is complete, you will be given an opportunity to learn about the study
results, which may be useful to you in your course or in understanding yourself and others.

2) A short summary of the results will be shared with participants on the same homepage as this
informed consent.
2) You will have an opportunity to contribute to psychological science by participating in this research.

Payment:
No compensation is available for this study.

Privacy/Confidentiality:
You will be assigned a code number which will protect your identity. All data will be kept in secured files, in accordance with the standards of the University, Federal regulations, and the American Psychological Association. No one will be able to know which are your Facebook activity trends. Finally, remember that it is not the person's responses that interest the researcher; only trends in Facebook activity. No data will be posted on this page.

Opportunities to Question/Contact:
Any questions about this research, or if you would like a copy of this informed consent emailed to you, contact Megan Gramm at megangramm@gmail.com .

If you should have any questions about your rights as a participant, please contact the Walden University Institutional Review Board (IRB) at phone number 1-612-312-1210, or email address IRB@waldenu.edu.
IRB Approval Number: 03-28-16-0308494.Expires: March 27, 2017. Thank you.

Appendix B: Flyer

Research Participants Needed

Trends in Facebook Use

- Are you 18 or older?
- Do you actively use Facebook?

If you answered yes to both questions, you are eligible to participate in a Facebook research study.

The purpose of this study is to compare certain trends in Facebook use with specific psychological theories of motivation and behavior. Participants will not receive any monetary compensation.

For more information, including informed consent, please visit:

https://www.facebook.com/leigh.gramm

or email the researcher at megangramm@gmail.com for a link to the study

Users must friend this page in order to be added to the study.

Walden University Institutional Review Board (IRB) Approval Number: 03-28-16-0308494, expiration 03-27-2017

Appendix C: NPI

Narcissistic Personality Inventory (NPI)

1. __A. I have a natural talent for influencing people.
   B. I am not good at influencing people.

2. __ A. Modesty doesn't become me.
   B. I am essentially a modest person.

3. __ A. I would do almost anything on a dare.
   B. I tend to be a fairly cautious person.

4. __ A. When people compliment me I sometimes get embarrassed.
   B. I know that I am good because everybody keeps telling me so.

5. __ A. The thought of ruling the world frightens the hell out of me.
   B. If I ruled the world it would be a better place.

6. ___A. I can usually talk my way out of anything.
   B. I try to accept the consequences of my behavior.

7. ___A. I prefer to blend in with the crowd.
   B. I like to be the center of attention.

8. __ A. I will be a success.
   B. I am not too concerned about success.

9. __ A. I am no better or worse than most people.
   B. I think I am a special person.

10. _ A. I am not sure if I would make a good leader.
    B. I see myself as a good leader.

11. _ A. I am assertive.
    B. I wish I were more assertive.

12. ___A. I like to have authority over other people.
    B. I don't mind following orders.

13. __ A. I find it easy to manipulate people.
    B. I don't like it when I find myself manipulating people.

14. __ A. I insist upon getting the respect that is due me.
    B. I usually get the respect that I deserve.

15. __ A. I don't particularly like to show off my body.
    B. I like to show off my body.

16. __ A. I can read people like a book.
    B. People are sometimes hard to understand.

17. __ A. If I feel competent I am willing to take responsibility for making decisions.
    B. I like to take responsibility for making decisions.

18. __ A. I just want to be reasonably happy.
    B. I want to amount to something in the eyes of the world.

19. __ A. My body is nothing special.
    B. I like to look at my body.

20. __ A. I try not to be a show off.
    B. I will usually show off if I get the chance.

21. __ A. I always know what I am doing.
    B. Sometimes I am not sure of what I am doing.

22. __ A. I sometimes depend on people to get things done.
    B. I rarely depend on anyone else to get things done.

23. __ A. Sometimes I tell good stories.
    B. Everybody likes to hear my stories.

24. __ A. I expect a great deal from other people.
    B. I like to do things for other people.

25. __ A. I will never be satisfied until I get all that I deserve.
    B. I take my satisfactions as they come.

26. _ A. Compliments embarrass me.
    B. I like to be complimented.

27. __ A. I have a strong will to power.
    B. Power for its own sake doesn't interest me.

28. __ A. I don't care about new fads and fashions.
    B. I like to start new fads and fashions.

29. __ A. I like to look at myself in the mirror.
B. I am not particularly interested in looking at myself in the mirror.

30. __ A. I really like to be the center of attention.
B. It makes me uncomfortable to be the center of attention.

31. __ A. I can live my life in any way I want to.
B. People can't always live their lives in term of what they want.

32. __ A. Being an authority doesn't mean that much to me.
B. People always seem to recognize my authority.

33. __ A. I would prefer to be a leader.
B. It makes little difference to me whether I am a leader or not.

34. __ A. I am going to be a great person.
B. I hope I am going to be successful.

35. __ A. People sometimes believe what I tell them.
B. I can make anybody believe anything I want them to.

36. __ A. I am a born leader.
B. Leadership is a quality that takes a long time to develop.

37. _ A. I wish somebody would someday write my biography.
B. I don't like people to pry into my life for any reason.

38. __ A. I get upset when people don't notice how I look when I go out in public.
B. I don't mind blending into the crowd when I go out in public.

39. __ A. I am more capable than other people.
B. There is a lot that I can learn from other people.

40. ___A. I am much like everybody else.
B. I am an extraordinary person.

Appendix D: List of Flyer Locations

1. Eileen's Bakery and Café, 1115 Caroline Street, Fredericksburg, Va 22401 (540) 372-4030
2. Salem Church Library, 2607 Salem Church Road, Fredericksburg, Va 22408 (540) 785-9267
3. Starbucks: Westwood Center LLC, 2001 Plank Rd, Fredericksburg, Virginia 22407 (540) 361-1348
4. Starbucks: Central Park, 1670 Carl D Silver Parkway Fredericksburg, Virginia 22407 (540) 785-2288
5. Hyperion Expresso, 301 William St, Fredericksburg, Va 22401 (540) 373-4882

Appendix E: LinkedIn Announcement

“I am currently seeking participants for my dissertation study. Inclusion criteria: Adults 18+ with an active Facebook account. Exclusion criteria: Participants cannot have a personal, familial, or work relationship with me. Please view/save/print the informed consent at https://www.facebook.com/leigh.gramm . If you wish to participate, please friend this page. You will be required to complete one short survey that will take approximately 5 minutes. This will be sent to you through Facebook’s instant messenger application. Feel free to re-post. Thank you for contributing to original research in the field of psychology! “

Appendix F: Facebook Communication

“Hello. Recently, you joined a research study under the Facebook name “Clinical Observation Dissertation”. This page is now called “Leigh Gramm”, in order to comply with Facebook’s terms of use. In the “Informed Consent”, you were promised a short summary of the results upon completion of the study. Please add yourself to this Facebook page to gain access to the results summary upon completion of the study. Thank you for your time”.

Appendix G: Survey With Demographic Questions

* 41. Please enter the participant code consisting of a number and letter given to you by the researcher-Example: 5F

* 42. What is your age?

* 43. What is your gender?

Female

Male