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Publication metadata

Title: I love my selfie! An investigation of overt and covert narcissism to understand selfie-posting behaviors within three geographic communities.

Author(s): Christina Shane-Simpson, Anna M. Schwartz, Rudy Abi-Habib, PiaTohme, RitaObeid

Journal: Computers in Human Behavior

DOI/Link: <https://doi.org/10.1016/j.chb.2019.106158>

How to cite this post-print from LAUR:

Shane-Simpson, C., Schwartz, A. M., Abi-Habib, R., Tohme, P., & Obeid, R. (2020). I love my selfie! An investigation of overt and covert narcissism to understand selfie-posting behaviors within three geographic communities. *Computers in Human Behavior*, DOI, 10.1016/j.chb.2019.106158, <http://hdl.handle.net/10725/12423>

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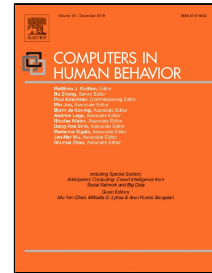
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# Journal Pre-proof

## I Love My Selfie! An Investigation of Overt and Covert Narcissism to Understand Selfie-Posting Behaviors within Three Geographic Communities

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PII: S0747-5632(19)30370-X  
DOI: <https://doi.org/10.1016/j.chb.2019.106158>  
Reference: CHB 106158

To appear in: *Computers in Human Behavior*

Received Date: 18 May 2019  
Accepted Date: 03 October 2019

Please cite this article as: Christina Shane-Simpson, Anna M. Schwartz, Rudy Abi-Habib, Pia Tohme, Rita Obeid, I Love My Selfie! An Investigation of Overt and Covert Narcissism to Understand Selfie-Posting Behaviors within Three Geographic Communities, *Computers in Human Behavior* (2019), <https://doi.org/10.1016/j.chb.2019.106158>

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I Love My Selfie! An Investigation of Overt and Covert Narcissism to Understand Selfie-Posting  
Behaviors within Three Geographic Communities

Christina Shane-Simpson<sup>1</sup>

Anna M. Schwartz<sup>2,3</sup>

Rudy Abi-Habib<sup>4</sup>

Pia Tohme<sup>4</sup>

Rita Obeid<sup>5</sup>

<sup>1</sup> University of Wisconsin Stout, <sup>2</sup> Boston College, <sup>3</sup> College of Staten Island, City University of  
New York, <sup>4</sup> Lebanese American University, <sup>5</sup> Case Western Reserve University

Correspondence concerning this article should be addressed to:

Christina Shane-Simpson

[Shane-simpsonc@uwstout.edu](mailto:Shane-simpsonc@uwstout.edu), 715-232-2478, Assistant Professor, Department of Psychology

University of Wisconsin Stout, Harvey Hall 473, 721 3rd Street East, Menomonie, WI 54751

No potential conflicts of interests are reported by the authors.

## Abstract

What drives selfie-posting on social media? Although several studies suggest that narcissistic traits predict online behaviors, there exist different types of narcissism that may influence specific types of online behavior. In the prior literature, two types of narcissism are frequently considered, overt narcissism (external expressions of narcissism) and the utility of using the broader construct as opposed to specific sub-components, are a matter of ongoing debate in the literature, the current study first explores the factor structure of covert narcissism and then clarifies which type of narcissism predicts selfie-posting. In addition to personality traits, one's community membership (e.g., culture) may also shape one's selfie-posting. Therefore, the current study investigated whether selfie-posting could be predicted by narcissism, demographics, and community membership. Participants from the Midwest US ( $n = 194$ ), Northeast US ( $n = 276$ ), and Lebanon ( $n = 260$ ) took an online survey. Results revealed a two-component structure for covert narcissism, suggesting that this variable should be considered multidimensional in nature. Selfie-posting frequency was predicted by gender, geographic community, and grandiose narcissism. Participants who were female, from the Northeast, and reported more grandiose narcissism posted selfies more frequently. Findings suggest that selfie-posting is favored by those with more histrionic tendencies (grandiose narcissism) and that community norms, including those which shape gendered behavior, likely play a role in the use of social media sites.

*Keywords:* Covert Narcissism, Overt Narcissism, Selfies, Culture, Online Communities, Gender

## I Love My Selfie! An Investigation of Overt and Covert Narcissism to Understand Selfie-Posting Behaviors within Three Geographic Communities

### 1.0 Introduction

The rapid evolution of technology over the past 10 years has enabled individuals to take selfies (via front-facing cameras on smartphones) and share them instantly via robust and high-speed internet/Wi-Fi connections. Self-images can be modified using filters to portray one's "best self" to their online community, while online users can also more passively view selfies posted by those in their online social network. On the internet, individuals can consume information, while also contributing new information on a broad variety of subjects. Like the way that writing, as a new symbolic system, effectively changed our cognition and vernacular thousands of years ago (Olson, 1996), the modalities of the internet are likely to change our communication, cognition and behavioral patterns today. Selfies are a relatively new medium through which internet users express themselves. Consequently, the uses and psychological motivations for the uses of this medium are still poorly understood in the current literature.

As selfie-taking has become more mainstream, researchers have begun to explore the connection between user motivations and selfie-posting on social network sites (SNSs). The term *selfie* predates the concept of a front-facing camera. The front-facing camera was first introduced on either the Sony Ericsson Z1010 mobile phone (Quito, 2017) or the Motorola A835 (Motorola A835, 2003) in 2003, while the first documented use of the term "selfie" dates back to 2002 (Kruszelnicki, 2014; A Brief History of the Selfie, 2014). Both Steve Jobs and earlier designers of front-facing cameras, like the designers of the Sony Ericsson Z1010, had envisaged the utility of the feature to be video-conferencing for business executives. However, by 2015 Apple had

included a pre-generated folder in Photos of “Selfies,” prompting one of the most googled queries for iOS 9 to be, “How do I delete the selfie folder,” (Quito, 2017).

Yet it was not until 2010 that the ability to take self-portraits arguably became more widely accessible, when several pieces of technology converged to facilitate easy selfie-taking. Apple’s iPhone 4 included a new front-facing camera with high-resolution quality (Quito, 2017). The speed of wireless internet – which increased with the change to 4G cellular infrastructure – could handle the bandwidth required for rapid photo uploads (Friedman, 2013). In 2010, the Instagram photo-sharing and social networking service was released and introduced auto-filters, allowing users to easily alter their photos. Finally, cementing the arrival of the new medium, the word *selfie* was added to the Oxford English Dictionary in 2013 (Oxford Dictionaries Word of the Year, 2013): *A photograph that one has taken of oneself, especially one taken with a smartphone or webcam and shared via social media* (Selfie, 2019). Access to smartphones is also widely available in the US; a recent Pew Research Report shows that even 68% of younger teens (13-14 years) report owning or having access to a smartphone (Pew Research Center, 2015). Due to this ease of accessibility and frequent use, research is needed to explore the purpose and functionality of selfie-posting, in addition to user motivations for selfie-posting.

SNS behaviors have been predicted by both demographic (e.g., age; Davenport, Bergman, Bergman, & Farrington, 2014) and personality factors of the user (Panek, Nardis, & Konrath, 2013; Wang et al., 2012, 2018), psychological research is still needed to connect behaviors with underlying psychological characteristics such as personality. Researchers have already begun to hypothesize and investigate the relationship between selfie-posting — an act of self-presentation — and its relationship to one of the most-studied personality factors, narcissism (e.g., Arpacia, Yalçınb, Baloğluc, & Kesicib, 2018; Barry, Doucette, Loflin, Rivera-Hudson, &

Herrington, 2015; Barry, Reiter, Anderson, Schoessler, & Sidoti, 2017; Lee & Sung, 2016; March & McBean, 2018; Ryan & Xenos, 2011). For example, Kim, Lee, Sung and Choi (2016) applied a focal theory from research on motivation, the Theory of Planned Behavior (TPB; Ajzen, 1985; 1991; 2011), to draw connections between self-presentations and social media to intentions to post. In applying this theory, they illustrated empirical connections between attitudes towards selfie-posting, subjective norms, one's perceived behavioral control, and finally narcissism, as these were the best determinants of one's intentions to post. The authors (Kim, Lee, Sung, & Choi, 2016) suggest that the original TPB model might need to encompass personality traits, such as narcissism, which can also predict online behaviors. As in the current paper, much of the research highlights that the relationships between personality and social media behavior are more complex than originally hypothesized.

For instance, researchers have consistently struggled to agree on the level of specificity that should be used when measuring personality traits, such as narcissism, as they relate to SNS behaviors. Prior research focuses on *general narcissism* as a construct, while neglecting a more precise measurement of the subcomponents or factors found within narcissism (e.g., overt narcissism; Miller, Lynam, Hyatt, & Campbell, 2017). This lack of specificity may prevent researchers from finding relationships between narcissism and online behavior (e.g., no relationship found by Shane-Simpson, Manago, Gaggi, & Gillespie-Lynch, 2018). Difficulties in measuring narcissism likely stem from the complex nature of the construct itself; narcissism may be expressed more actively through visible behaviors, such as declaring one's sense of entitlement (overt narcissism), or expressed through more internal/hidden behaviors such as an individual who avoids interactions in which they feel their entitlement will not be respected (covert narcissism). Similarly, online behaviors can be characterized as both public and private.

Based on these definitions, one might expect that public behaviors can be predicted by more overt forms of narcissism and private behaviors predicted by covert narcissism. However, these relationships contain additional complexities.

The relationship between narcissism and SNS behavior is complicated by other, possibly overlapping, personality traits (such as self-esteem) and demographic factors (such as gender) (e.g., March & McBean, 2018; Sorokowski et al., 2015) that also predict online behaviors. If specific demographic factors contribute differentially to selfie-posting behavior, this would suggest that community and cultural norms may be shaping the expression of SNS behavior. Furthermore, the internet has unique properties of connectivity that afford the creation of communities which are otherwise geographically separated, bridging a gap between individuals of varying regions around the world. Unfortunately, it remains unknown whether the digital milieu of the internet is indeed creating new communities that transcend these traditional geographic boundaries. Alternately, it may be that digital community boundaries are still defined by face-to-face, in-person social networks which are largely replicated in digital spheres. Consequently, the current study was designed to build upon the prior literature by first clarifying the relationship between narcissism and SNS behavior, and then determining whether demographic variables, including gender, age, and geographic community are predictive of SNS behavior.

### **1.1 Narcissism as a Multidimensional Construct**

Since the turn of the century, social scientists have referred to the myth of Narcissus when attempting to explain the human tendency towards solipsism (Ellis, 1898 via Gnambs & Appel, 2018). The titular character, so besotted by his own reflection in the surface of a pond, spurns the romantic advances of the nymph Echo, resulting in her dissolution into the haunting,



eponymous sound. Narcissus himself metamorphosizes into a flower, losing his humanity to his vanity. This early story fuels the current definitions and ways in which narcissism is conceptualized in the research literature.

Narcissism was integrated into the DSM-III in 1987, spurring an increase in research on the construct (Cain, Pincus, & Ansell, 2008). Wink (1991) proposed two dimensions of narcissism, referred to as grandiosity-exhibitionism narcissism (also called overt narcissism) and vulnerable narcissism (also called covert narcissism) (also see Hendin & Cheek, 1997). There are several sources that can lead to confusion regarding the naming conventions on this topic. Upon reviewing the literature on narcissism and its measurement, Miller and colleagues (2017) concluded that researchers often fail to distinguish between overt and covert narcissism (referred to in that case as grandiose and vulnerable), which has led to a lack of coherence in the prior literature. In summarizing the ongoing debates within this literature, they point out that there is no consensus on the meaning of narcissism or its central qualities. For the sake of parsimony, this paper will consistently use the term *overt narcissism* to refer to the commonly researched construct of grandiose/overt narcissism.

A growing body of research on the internal factor structure of overt narcissism suggests a three-factor structure of overt narcissism in the NPI (Narcissistic Personality Inventory; the original 40-item measure used to assess narcissism, Raskin & Terry, 1988): leadership/authority, grandiosity-exhibitionism, and entitlement/exploitativeness (Ackerman et al., 2011; Gentile et al., 2013). Leadership/authority narcissism includes elements of both self-awareness and one's perceptions about their own abilities, while grandiose exhibitionism narcissism assesses both self-involvement and self-obsession (March & McBean, 2018). Individuals who rank high in entitlement/exploitative narcissism may feel that they deserve more respect/admiration than

others and may be more likely to take advantage of other people (March & McBean, 2018). Although past studies have often neglected to compare/contrast the components of overt narcissism as they relate to SNS behaviors, recent studies (see Barry et al., 2015; March & McBean, 2018; Weiser, 2015) are beginning to explore these relationships.

The second dimension of narcissism, *covert narcissism*, has received less attention in the literature (Miller et al., 2017). This type, called by various names in the literature that include vulnerable, hypersensitive and covert narcissism, may be more difficult to observe because it is the inhibition of the narcissistic tendency, not the lack of narcissistic tendencies. For this reason, we chose to use the term *covert narcissism* in this paper. However, it should be noted that all three terms are most likely interchangeable, as the inhibition of narcissistic trait seems to capture the most essential quality of the construct and clearly identifies how it differs from its close cousin, overt narcissism.

Covert narcissism has only recently garnered exploration into its possible internal component structure, with the current authors finding only one journal article (Fossati et al., 2009) and one conference presentation analyzing its internal factor structure (Stone & Bartholomay, 2019). Each of these two studies generated two factors from covert narcissism: oversensitivity to judgment/rejection sensitivity and egocentrism/self-centeredness (first terms listed were used by Fossati et al., 2009, while the second terms were used by Stone and Bartholomay, 2019). Someone high in oversensitivity to judgment might be more perceptive of negative feedback from others, e.g., adolescents might rank higher in this trait due to their increased awareness and sensitivity to their peers. When an individual (internally) expresses heightened concerns toward their own well-being, above their friends and family, they are engaging in egocentrism. Due to this seemingly complex structure of covert narcissism,

additional research is needed to clarify whether covert narcissism should be considered a unidimensional or multidimensional construct.

In contrasting the two dimensions of narcissism, covert narcissism is characterized by elements of dependency, submissiveness, introversion, shame, and low trust. Fossati and colleagues (2009) suggest that covert narcissism is related to the Big Five personality dimension of neuroticism. Miller and colleagues' (2017) recent review of the descriptors of overt narcissism identified high extraversion from the Big Five as a central feature. This may explain the cluster of overt narcissistic traits found in prior research, such as assertiveness, agency, activity/pro-activity, and even warmth. Yet overt narcissism also has elements of callousness and entitlement, exhibitionism, arrogance, manipulateness, and of course, grandiosity. Interestingly, Fossati and colleagues (2009) characterized covert and overt narcissism as two faces of the same trait, describing the relationship between covert narcissism and overt narcissism as sharing a common deficit in the representation of self- and other- images. Both forms of narcissism, however, unite in their high concentrations of antagonism and low agreeableness which are likely encapsulated by the entitlement and egocentrism factors of overt and covert narcissism respectively.

## **1.2 Narcissism Predicting Social Media Preferences and Behaviors**

While some studies identified links between SNS behaviors and the broadest, holistic measures of narcissism (e.g., aggregate scores from the NPI-16, NPI-40) (Davenport et al., 2014; McCain & Campbell, 2018; Panek et al., 2013; Sheldon & Bryant, 2016), others found that levels of narcissistic traits do not predict the frequency and intensity of SNS use (Bergman, Farrington, Davenport, & Bergman, 2011). For example, Shane-Simpson and colleagues (2018) found that narcissism (measured as general narcissism via NPI-16) did not predict participants' social media site preference. The lack of a relationship found between narcissism and social

media preference in some studies may stem from two measurement issues: 1) the type of social media behaviors assigned as the outcome variable and, 2) whether the internal factor structure of narcissism was used in the predictive models.

First, SNS use is composed of consumptive behaviors (e.g. scrolling, clicking, liking, sharing) and original content creation and sharing (OCC&S). It can be posited that consumptive behaviors have less of a relationship with overt narcissism than OCC&S behaviors on SNSs. In particular, selfie-posting seems to be the most likely candidate for an OCC&S use that would be linked with narcissism due to its self-presentational values. Indeed, researchers found that those who reported more narcissistic traits were more likely to cite certain motivations for site use, e.g., gathering more friends, indicating that SNS use was linked to narcissism (Bergman et al., 2011). These researchers noted that motivations for use might begin with one's personality traits, in which more narcissistic individuals may pursue their narcissistic desires through social media venues. Mehdizadeh (2010) found that those with more narcissistic traits (overt narcissism was used) posted more self-promotional content through their main photo, general photos, status updates, and notes on Facebook. These findings align with other studies identifying a relationship between overt narcissism and specific SNS behaviors such as writing content on SNSs (e.g., status updates, comments), posting visual content (including photos of oneself), and membership in interest groups<sup>1</sup> (Gnams & Appel, 2018; McCain & Campbell, 2018). Similarly, other studies illustrate the role of overt narcissism in predicting selfie-posting and other selfie-related behaviors. For example, in two studies, McCain and colleagues (2016) revealed that overt

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<sup>1</sup> Note that the social media literature has not yet consistently defined and categorized behaviors such as writing content, posting visual content, and joining groups.

narcissism was positively related to taking selfies, posting more selfies, experiencing a positive affect when taking selfies, and self-presentation motives.

Although overt narcissism has been linked with specific behaviors, fewer studies have linked covert narcissism with specific SNS behaviors. In one of the few studies exploring covert narcissism and SNS behaviors, Sheldon and Bryant (2016) surveyed 239 college students about their social media use, motivations for media use, and covert narcissistic traits. Those who reported more covert narcissism were more likely to use Instagram to *appear cool* or for the *surveillance of others*. Covert narcissism was also (positively) related to the amount of time participants spent editing their Instagram photos. These prior studies highlight a need for researchers to measure both overt and covert narcissism together to determine the role of different types of narcissism in predicting SNS behavior.

Linking the overt and covert research, McCain and Campbell (2018) explored both types of narcissism and social media behaviors that included time spent online, status update frequency, number of friends/followers, and selfie-posting frequency. The researchers found, after reviewing 62 studies, that overt narcissism was positively correlated with all of the social media behaviors studied, whereas covert narcissism was not linked to social media use. This supports the distinction between overt narcissism as a predictor of OCC&S social media behaviors, whereas the inwardly directed covert narcissism was not predictive of (active) behaviors. Overall, this literature suggests that both overt and covert narcissism can predict SNS behavior, but the specific behaviors or cognitions predicted (the dependent variables) might differ based on the type of narcissism measured.

The lack of a relationship found between narcissism and SNS behavior might also result from a lack of studies that measure the internal factor structure of either overt or covert

narcissism, which may in turn affect whether a model successfully predicts SNS behaviors like selfie-posting. Overt narcissism is composed of at least three subscales, each of which may differentially predict varied types of engagement on SNSs. Studies find that both grandiose and leadership factors of overt narcissism, as well as general narcissism (assessed with the NPI-13), are positively related to selfie-posting frequency (March & McBean, 2018; Sung, Lee, Kim, & Choi, 2016; Weiser, 2015). McCain and Campbell (2018) noted that the lack of relationship between covert narcissism and SNS use might result from measurement “noise” when researchers fail to account for the internal factors of covert narcissism. While only two pieces of research (Fossati et al., 2009; Stone and Bartholomay, 2019), to our knowledge, have examined a component structure of covert narcissism, none have explored SNS behaviors in the context of a factored covert narcissism construct. Due to the limited research exploring and replicating this multidimensional structure of covert narcissism, the current study sought to explore whether the two-component structure replicated with a more diverse sample of participants.

### **1.3 Narcissism, Selfie-Posting, and Community Norms**

Relationships between the dimensions of narcissism and selfie-posting are complicated by the many variables that may moderate, mediate, or predict selfie-posting. For instance, studies suggest that relationships between narcissism and selfies may depend upon the gender of the participant (see Sorokowska et al., 2015; Weiser, 2015) or culture/region (see Lee & Sung, 2016; reviews by Gnambs & Appel, 2018; McCain & Campbell, 2018). Yet almost no research has explored the nature of emergent communities afforded by social networking. Prior to the arrival of SNSs, communities were often geographically-bounded, as in you were only able to exist in a social network of people who lived in your city/region and those networks were dependent on neighborhood boundaries or, at most fluid, institutional networks through work, school, etc.

Long-distance communication needed to pass through either tightly controlled mass media channels or through one-to-one communication devices, like the phone, that may have provided weaker affordances than SNSs for the building of social networks. With sites such as Facebook, Twitter, and Instagram, users can expect to reach almost every acquaintance and even accrue mass followings, creating posts intended for millions of viewers and distributing them instantaneously with no limitations regarding such things as distance or time zone, and few with regards to country.

Sociologists, social psychologists, and anthropologists, all of whom study culture, know that communities develop implicit agreements about how to behave, speak, dress, and even think. These implicit agreements are referred to as norms. Norms set the expectations for gendered behavior in a society (Diekmann & Goodfriend, 2006), and these expectations may replicate or change in SNSs (see Shane-Simpson & Gillespie-Lynch, 2017). However, because SNSs have different affordances than previous communities, we know relatively little about the creation of norms surrounding specific social media behaviors (e.g., selfie-posting). Even so, prior literature highlights how identities may be governed by social norms. For instance, a prior study found that gender was linked with selfie-promotional content and posting on one's personal page (Mehdizadeh, 2010). As another influencer of social norms, one's culture may also encourage certain behaviors on SNSs, although this predictive relationship is made more complex by other personal characteristics that influence one's online behavior (e.g., narcissism). Prior research has found that culture served as a significant moderator for the relationship between grandiose narcissism and SNS behavior, accounting for 17% of the variance between samples (Gnambs & Appel, 2018). Interestingly, the cultural variable more strongly related to power-distant cultures (e.g., China, India; Gnambs & Appel, 2018), or cultures where there is a

stronger tolerance among the less powerful members of the society where power is distributed unequally. This relationship suggests that cultural differences in predictive models of SNS behaviors might be explained by broad constructs which have been used to psychologically characterize cultures (e.g. Gelfand et al., 2011; Hofstede, 1983).

Even different SNSs may act as boundaries, similar to traditional geographic boundaries, creating different community norms depending on the affordances of each site. Evidence for this is suggested by McCain and Campbell (2018) who found that the relationship between overt narcissism and selfie-posting could be moderated by the SNS. In fact, the conceptualization of SNSs as communities was supported by McCain and Campbell's findings that both culture and the site used (mostly Facebook and Twitter) moderated relationships between grandiose narcissism and social media use. Positive relationships between overt narcissism in the US, Europe, or Asia, were less predictive of selfie-posting than in Russia, highlighting the role of culture in predicting social media behavior (McCain & Campbell, 2018). These findings suggest that research is needed to explore selfie-posting as it relates to narcissism across different SNSs, with SNSs being viewed as community contexts with differing norms. Combining each of the aforementioned predictors of SNS behavior, research is still needed to investigate whether narcissism (measured as a multicomponent variable), demographics, and/or culture can predict selfie-posting behaviors.

## **2.0 Current Study**

The three sites from which we collected data were chosen to explore whether selfie-posting was differentially predicted by narcissism and across geographic community. Some cross-cultural researchers conceptualize culture as intra-nationally homogenous and internationally heterogenous (Hofstede, 1983), but other cultural psychologists and anthropologists



have pointed out the inherent intra-national variability that is obvious to an American citizen who might consider the differences between regional cities such as Savannah, Georgia and Los Angeles, California (Gelfand et al., 2011). These intra-US differences were used as a rationale for data collection from two US-based sites in varying geographic communities, the Northeast US and the Midwest US. The additional site for data collection, Lebanon, was identified due to cultural differences that might exist across nations, writing systems, and languages. Through data collection at these three sites, the current study was designed to address the following research questions:

RQ1: What is the factor structure of covert narcissism?

H1: Recent studies highlight a two-factor structure of covert/vulnerable narcissism (Fossati et al., 2009; Stone & Bartholomay, 2019). Consequently, the research team hypothesized that the same two-factor structure would be found with covert narcissism.

RQ2. Which demographic variables and dimensions/types of narcissism are related to selfie-posting frequency?

H2: Prior meta-analytic studies suggest that only overt narcissism is predictive of selfie-posting behaviors and social media use more generally (Gnambs & Appel, 2018; McCain & Campbell, 2018). Furthermore, prior studies suggest that demographic variables (e.g., age; March & McBean, 2018; Sorokowska et al., 2015) and culture (Gnambs & Appel, 2018; McCain & Campbell, 2018) may also predict selfie-posting. Consequently, the researchers hypothesized that factors of overt narcissism and gender would predict selfie-posting frequency.

### **3.0 Material and Methods**

#### **3.1 Participants**

Data was collected from three sites: two in the United States (Northeast and Midwest) and one additional site in Lebanon, a country in the Middle East. All participants were students enrolled in a college or university. In the United States, participants were recruited through psychology subject pools where students registered in Introductory Psychology courses received course credit for completion of an online survey. In Lebanon, the study was advertised to students across various Introductory Psychology courses and students were not compensated for their participation.

A total of 730 students were recruited from three geographic communities: Midwest US ( $n = 194$ ), East Coast US ( $n = 276$ ), and Lebanon ( $n = 260$ ). Participant ages ranged from 18 to 26 ( $M = 19.61$ ,  $SD = 2.45$ ) and ethnicities varied greatly based on the geographic community of data collection (see Table 1).

(Table 1)

Using an online survey delivered through Qualtrics, participants were asked about their demographics, types of narcissistic traits (leadership, grandiose, entitlement, and vulnerable; Gentile et al., 2013; Hendin & Cheek, 1997), and selfie-posting behavior on Facebook and Instagram. More than half of the participants (67%) identified as female, 31% identified as male, 1% chose an *other* identity, and 1% did not self-identify.

### 3.2 Measures

**3.2.1 Overt Narcissism.** As an increasingly complex psychological construct, narcissism was assessed with two scales to encompass the two dimensions of narcissism: overt and covert narcissism. The revised Narcissistic Personality Inventory (NPI-13; Gentile et al., 2013) included 13 items that assessed three factors of overt/grandiose narcissism: leadership/authority, grandiose/exhibitionism, and entitlement/exploitativeness. For the leadership/authority and the

entitlement/exploitativeness subscales, participants were asked to indicate their level of agreement with each statement on a scale from *Strongly Agree* (5) to *Strongly Disagree* (1). Sample leadership/authority statements included, *I like having authority over other people*, and, *I am a born leader*. Sample entitlement/exploitativeness statements included, *I find it easy to manipulate people*, and, *I expect a great deal from other people*. For the grandiose/exhibitionism subscale, participants were again asked to indicate their level of agreement with a series of statements such as, *I like to show off my body*, and, *I know I am a good person because everybody keeps telling me so*. Response options ranged from *Describes me extremely well* (5), to *Does not describe me* (1). Reliability was moderate to high for the overt narcissism subscales: leadership/authority  $\alpha = .84$ , grandiose narcissism  $\alpha = .81$ , and entitlement narcissism  $\alpha = .75$ .

**3.2.2 Covert Narcissism.** Covert (i.e. vulnerable or hypersensitive) narcissism was measured using an adapted version of the Hypersensitive Narcissism Scale (Hendin & Cheek, 1997). The first item of this scale was omitted due to a technological error in data collection. Participants were asked to indicate how characteristic a series of statements were of them on a 5-point Likert scale ranging from *Very characteristic* (5) to *Very uncharacteristic* (1). Sample statements included, *I dislike sharing the credit of an achievement with others* and, *I often interpret the remarks of others in a personal way* ( $\alpha = .78$ ).

**3.2.3 Selfie-posting behaviors.** Participants were first given a brief definition for Selfie: *A picture you take of yourself without the aid of somebody else, using a selfie-stick, headphones or your hand*. Following this definition, the frequency of selfie-posting was assessed by asking participants, *how often do you post a selfie on Facebook or Instagram?* Responses were provided on a 5-point Likert scale ranging from *Less than once or twice a month* (1) to *More than twice a day* (5). Participants could also respond by indicating that they *Don't use Facebook or Instagram*

or could respond with the *Prefer not to answer* response option. These latter responses (don't use and prefer not to answer) were not included in the following analyses.

#### 4.0 Analytic Plan

To examine whether covert narcissism should be explored as a unidimensional or multidimensional construct, a principal component analysis (PCA) was run for the 9-item scale. The PCA process is often used to reduce many variables into a smaller number of variables, or components, by identifying the items that share the most variance (see Abdi & Williams, 2010). This strategy allows researchers to use a reduced set of variables to more easily interpret patterns in the data. Dimension reduction via PCA was chosen for the current study to reduce the number of items to a smaller number of components in order to better explore relationships between the internal structure of covert and overt narcissism.

In addition, covert and overt narcissism have been reported as being negatively correlated, and yet they also share variance (Wink, 1991). After the PCA, two sets of correlations were conducted. First, an analysis of the zero-order relationships was conducted between the overall means of overt and covert narcissism. This approach was used to replicate the original findings by Wink (1991) that uncovered how overt and covert narcissism were separable and possibly opposing ends of a single spectrum. Secondly, the three factors of overt narcissism and the two factors of covert narcissism were analyzed using zero-order correlations. Exploring the relationships between internal factors may reveal where there are commonalities and where the two constructs of overt and covert narcissism diverge. These explorations may help us better understand the nature and facets of the construct of narcissism in general, strengthening our ability to predict SNS behavior. Then, each of the components within overt and covert narcissism were systematically run as separate variables in the subsequent analyses.

A linear regression was used to explore which demographic variables and types of narcissism significantly predicted selfie-posting frequency on Facebook and Instagram. Two follow-up analyses were run using nominal regressions to explore differences in the prevalence of narcissism between men and women (via binomial logistic regression) and between the three sites of data collection (via multinomial logistic regression).

## 5.0 Results

### 5.1 Principal Component Analysis for Covert Narcissism

A PCA was run to explore whether covert narcissism should be analyzed as a unidimensional or multidimensional construct. Loadings below .3 were suppressed in the pattern matrix. Direct oblimin rotation with kaiser normalization was used to account for expected communality between the extracted factors. Findings from the factor analysis (Table 2) align with prior studies (Fossati et al., 2009; Stone & Bartholomay, 2019) and suggest that covert narcissism items load onto two factors labeled as oversensitivity to judgment and egocentrism. Of the variance explained by the analysis, 36% was explained by the first component alone, and 16% was explained by the second component alone.

(Table 2)

Correlations failed to replicate earlier findings from Wink (1991) that overt and covert narcissism are inversely related to one another, showing instead that the overall means of overt and covert narcissism are significantly and positively related to one another,  $r = .23, p < .001$ . In evaluating the converging and diverging relationships of the factors of overt and covert narcissism, we uncovered some patterns: Zero-order correlations showed that the entitlement factor of overt narcissism held the strongest relationship to both the oversensitivity to judgment ( $r = .26, p < .001$ ) and egocentrism ( $r = .32, p < .001$ ) factors of covert narcissism. However, the

grandiose factor of overt narcissism was not significantly related to oversensitivity to judgment,  $r = .07, p = .075$ , but was significantly related to egocentrism,  $r = .09, p = .022$ . The leadership factor of overt narcissism followed the same pattern as the grandiose factor, showing a lack of relationship with oversensitivity to judgment, where grandiose narcissism was not significantly related,  $r = -.02, p = .643$ . Again, like the grandiose factor of overt narcissism, the leadership factor showed a significant and positive relationship to egocentrism,  $r = .17, p < .001$ .

## 5.2 Relationships Between Demographics, Types of Narcissism, and Selfie-Posting

Out of the 619 participants who responded, 68% ( $n = 421$ ) reported posting less than once or twice a month, while 24% ( $n = 148$ ) posted once or twice a month, 5% posted once or twice a week ( $n = 33$ ), 1% ( $n = 8$ ) posted once or twice a day, and only 1% ( $n = 9$ ) posted more than twice a day<sup>2</sup>.

A linear regression model was used to determine whether gender, age, geographic community, and each type of narcissism (leadership/authority narcissism, grandiose/exhibitionism narcissism, entitlement/exploitativeness narcissism, egocentrism component of covert narcissism, and oversensitivity to judgment component of covert narcissism) predicted selfie-posting frequency on Facebook and Instagram.

(Table 3)

Selfie-posting was only predicted by gender, geographic community, and grandiose narcissism, but was not predicted by leadership narcissism, entitlement narcissism, or either component of covert narcissism (Table 3). Post hoc testing revealed that female participants ( $M$

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<sup>2</sup> Note that participants were provided with a definition of a selfie prior to this question: *A picture you take of yourself without the aid of somebody else, using a selfie-stick, headphones or your hand.*

= 1.42,  $SD = .86$ ) reported more selfie-posting than males ( $M = 1.05$ ,  $SD = .71$ ) ( $t(467) = -5.77$ ,  $p < .001$ ;  $d = .44$ ). There was a significant effect of geographic community on selfie-posting,  $F(2, 676) = 10.76$ ,  $p < .001$ ;  $\eta^2 = .03$ . Participants from the Northeast US reported the most frequent posting ( $M = 1.51$ ,  $SD = 1.00$ ), followed by those from Lebanon ( $M = 1.20$ ,  $SD = .73$ ) and those from the Midwest US ( $M = 1.20$ ,  $SD = .71$ ). Selfie-posting frequency was also positively correlated with grandiose narcissism from overt narcissism,  $r(664) = .17$ ,  $p < .001$ .

A follow up analysis to the linear regression model in Table 3 was conducted to explore the relationship between gender and covert narcissism using the factors identified by Gentile (2013) for overt narcissism and the components identified in Table 2. A binomial logistic regression was performed to ascertain the relationship between gender and the three overt and two covert subcomponents of narcissism. The logistic regression model was statistically significant,  $\chi^2(5) = 27.64$ ,  $p < .001$ , explaining 5.3% (Nagelkerke  $R^2$ ) of the variance in gender, and correctly classifying 68% of the cases. Of the five predictor variables, only two were statistically significant: egocentrism and oversensitivity to judgment subcomponents of covert narcissism. Those who ranked higher in egocentrism covert narcissism were 1.62 times more likely to be male than female, whereas those who ranked high in oversensitivity to judgment covert narcissism were .7 times less likely to be male than female.

(Table 4)

A second follow up analysis to the linear regression model in Table 3 was conducted to explore the relationship between site (Northeast US, Midwest US, and Lebanon) and covert narcissism subcomponents using the factors identified by Gentile (2013) for overt narcissism and the components (Table 2). A multinomial logistic regression was performed, showing a statistically significant model,  $\chi^2(10) = 179.03$ ,  $p < .001$ , explaining 24.3% (Nagelkerke  $R^2$ ) of

the variance in site. For the comparison between the Northeast US and the Midwest US, four of the five predictors were statistically significant: leadership, grandiose, and entitlement subcomponents of overt narcissism as well as the egocentrism subcomponent of covert narcissism. For the comparison between Lebanon and the Midwest US, only three of the five predictors were statistically significant: leadership and entitlement subcomponents of overt narcissism, as well as the oversensitivity to judgment subcomponent of covert narcissism. For the final comparison between Lebanon and the Northeast US, four of the five predictors were again significant.

(Table 5)

Only the grandiose and entitlement subcomponents of overt narcissism were significant, but both the egocentrism and oversensitivity to judgment subcomponents of covert narcissism were significant (Table 5).

## 6.0 Discussion

Previous research has reached equivocal conclusions about the relationship between narcissism and specific SNS behaviors. Historically, many studies assessed narcissism as a unidimensional (or at least single bipolar) construct, while social media behavior was measured (simplistically) as one general activity rather than a suite of activities. The current study illustrates the multidimensional nature of narcissism, while also suggesting that the subcomponents of both overt and covert narcissism (e.g., two components of covert narcissism or three components of overt narcissism), vary in their utility to predict online behavior. This suggests that the factored forms of these constructs are the most useful for helping us predict and understand online behavior. In addition, the current study illustrates how previous models used



to predict online behaviors (e.g., Theory of Planned Behavior) might require a revision or expansion that includes new understandings of the predictors for online behavior.

A more targeted look at specific SNS behaviors reveals a range of measurable behaviors, including both OCC&S and consumption-based behaviors, each of which may be differently predicted by demographic characteristics and personality traits. The current study finds that gender, geographic community (or culture), and the grandiose factor of overt narcissism predicted self-posting frequency on Facebook and Instagram. Findings from this study also emphasize the increasingly complex role of geographic community/culture in developing or enforcing online social norms for SNSs. Varied frequencies of selfie-posting were found between linguistic communities and even between geographic communities within the same linguistic community and nation (the US). These findings suggest an ongoing role of physical proximity in shaping community norms even in unbounded digital spaces with seemingly instantaneous global access.

### **6.1 The Two-Factor Structure of Covert Narcissism**

Given that the factors of overt narcissism can predict specific SNS behaviors (Gnambs & Appel, 2018; March & McBean, 2018; McCain & Campbell, 2018; Panek et al., 2013; Sung et al., 2016; Weiser, 2015), the current researchers first explored whether covert narcissism also contained a unique factor structure, and then, if multiple factors existed, how those factors might account for the variance in predicting selfie-posting. If each narcissism dimension of narcissism cleanly breaks down into multiple factors, this raises additional questions about the types of behaviors associated with each subcomponent of covert and overt narcissism. For example, overt narcissism may be related to histrionic tendencies, attention-seeking behaviors, attempts to control and dominate others by seeking attention, both seeking and feeling entitled to attention,

and then viewing one's behavior as inhabiting leadership roles. Consequently, selfie-posting might allow individuals who rank high in overt narcissism to fulfill their attention-seeking desires.

Although both covert and overt narcissism share characteristics such as a sense of entitlement (Hendin & Cheek, 1997), covert narcissism has a component of rejection sensitivity which is more likely tied to interpreting other people's behaviors internally in specific ways rather than enacting behaviors intended to shape the group around you due to your sense of self. Validating a prior study by Stone and Bartholomay (2019) as well as work by Fossati and colleagues (2009), the current study found that covert narcissism factored into two components, labeled as egocentrism and oversensitivity to judgment. Stone and Bartholomay (2019) used confirmatory factor analysis to assess the factor structure of covert narcissism in a broad national sample covering the span of adulthood using a random sample of 400 participants from 50,000 users' data from OpenPsychometrics.org, a website that collects data from people who are interested in taking personality tests. Their factor structure is nearly identical to our current findings with two exceptions. Due to a programming error in the current research, the original item, "I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others," from Hendin and Cheek (1997) was removed from the current analyses. Secondly, and possibly due to the missing item or the differences between factor analysis and PCA, Stone and Bartholomay found one cross loading item, "I dislike being with a group unless I know that I am appreciated by at least one of those present," whereas we found this item to load only on the component of oversensitivity to judgment.

Fossati and colleagues (2009) also evaluated the internal factor structure of Hendin and Cheek's (1997) covert narcissism scale with both psychiatric outpatients ( $N = 366$ ) and non-

clinical volunteers ( $N = 385$ ) in Milan, Italy using Procrustes Analyses and PCAs. Their first factor matched the current findings, except for one difference. The item, “I feel that I have enough on my hands without worrying about other people’s troubles,” loaded on our second factor, egocentrism, instead of on the first factor, as theirs did. However, the current loading pattern appears to have higher face validity than theirs did. Their second factor matched ours except for the absence of the missing item previously mentioned. As an added element of the Fossati and colleagues (2009) study, their clinical outpatients followed a slightly different pattern than their non-clinical participants. There were differences between the clinical and non-clinical sub-populations in Fossati’s sub-samples in that two items, “I easily become wrapped up in my own interests and forget the existence of others,” and “I dislike being with a group unless I know that I am appreciated by at least one of those present,” were cross-loaded in the non-clinical sample (more weakly loading onto factor 1, oversensitivity to judgment), and neither was cross-loaded in the clinical sample, despite the clinical diagnoses being varied and not necessarily being related to narcissism or even personality disorders. Note that the second item above, “I dislike being with a group unless I know that I am appreciated by at least one of those present,” is the same item that was cross-loaded for Stone and Bartholomay (2019). Otherwise, all three non-clinical populations, from Fossati and colleagues (2009), Stone and Bartholomay (2019) and the sample reported in the current study had roughly the same factor structure. This is even more interesting given the fact that Fossati’s samples were from Milan, Italy, Stone and Bartholomay’s participants were sampled across the US, and the current sample were taken from two US regions and from Lebanon. These congruencies display a cross-cultural consistency in the internal factor structure of covert narcissism, despite the fact that narcissism is expressed with different frequencies and in attitudes and behaviors that vary across geographic regions.

As an additional analysis, the subfactors of each dimension of narcissism were investigated across gender to determine whether the genders differ in their narcissistic qualities. This question was particularly interesting because the inward directedness of covert narcissism, as well as the term ‘vulnerable’ or ‘hypersensitive,’ align with societal expectations of femininity, whereas the terms often used to describe overt narcissism (e.g., leadership) have a more masculine quality (Drake, Primeaux & Thomas, 2018). In our study, the egocentrism factor of covert narcissism was associated with being male, while the oversensitivity to judgment component was associated with being female. As a possible explanation for this finding, the egocentrism factor of covert narcissism is conceptually similar to the entitlement factor of overt narcissism and they may constitute an overlap between the two constructs (Gentile et al., 2013). Oversensitivity to judgment, on the other hand, has strong face-validity for representing a particularly feminine form of narcissism, a notion supported by these findings. Consequently, although covert narcissism did not predict selfie-posting in the current study, some subfactors of covert narcissism may map more strongly onto a given gender according to the gender norms in a society. Future research may want to investigate how gender interacts with theoretical models mapping intentions to post onto attitudes about selfie-posting and perceived behavioral control (Kim, et al., 2016), as these components of the TPB provide fertile ground for exploring aspects of the oversensitivity to judgment dimension of covert narcissism. For example, do individuals who are oversensitive to judgment lack perceived behavioral control? Do participants high in oversensitivity to judgment have different attitudes about selfie-posting?

## **6.2 Grandiose Narcissism Predicts Selfie-Posting**

Our findings support research that has identified connections between narcissism and SNS behaviors, while also clarifying which subfactor of narcissism is linked with self-

presentation behavior on social media. Theoretically, covert and overt narcissism are expected to overlap such that both include a sense of entitlement (Gentile et al., 2013). This is clearly represented by the entitlement subcomponent of overt narcissism (Gentile et al., 2013) and the egocentrism subcomponent in covert narcissism (Fossati et al., 2009; Stone & Bartholomay, 2019). However, as predicted, entitlement was not predictive of selfie-posting frequency. Covert narcissism, with its hallmarks of an outward appearance of sensitivity, shyness, insecurity, and passivity, but internal fantasies of ultimate success and power, lack of empathy, and sense of entitlement (Miller & Maples, 2011), may predict other online behaviors, or perhaps specific internal intentions and attitudes about how others will react to one's own posts. These internal feelings about postings may be difficult for researchers to effectively measure and may not be overtly expressed in one's online behaviors. Even so, future research might consider novel ways to explore potential links between the subcomponents of covert narcissism and SNS behaviors. For instance, pop-up surveys or think-aloud methods implemented during SNS use might reveal how participants are feeling as they engage in different online behaviors, or even their reactions to other people's selfies might better associate with covert narcissistic tendencies.

Supporting our original hypothesis and the prior literature on social media behavior (Gnambs & Appel, 2018; McCain & Campbell, 2018), the overconfidence and inflated self-esteem commonly associated with grandiose narcissism might be fulfilled through selfie-posting. We predict that this fulfillment might occur within a bidirectional cycle, reinforcing personality with behavior and vice versa. For example, an individual with higher grandiose narcissism posts selfies more frequently; they then receive positive feedback from followers because they have effectively curated their online social network to include only those individuals who will praise and provide positive feedback back to the user. That individual then feels positively about

themselves as a result of all this positive feedback, and these positive feelings result in additional selfie-posting to maintain or even heighten one's positive feelings about one's self. Although this cycle is merely speculation based on the current findings, additional studies should explore whether grandiose narcissism and selfie-posting (or other self-presentation) behaviors might reinforce themselves over time and how these behaviors may adapt to the ever-changing nature of SNSs.

We also hypothesize that the lack of relationships in prior studies (Bergman et al., 2011; Mehdizadeh, 2010; Shane-Simpson et al., 2018) found between overt narcissism and general social media behaviors, or selfie-posting, specifically, may result from a lack of exploration into the specific subcomponents of overt narcissism. When overt narcissism has been analyzed as one variable, neglecting a measurement of the subcomponents within it (e.g., leadership, entitlement), the "extra noise" created by those unrelated subcomponents may obscure a significant relationship between grandiose narcissism and social media behavior. Furthermore, the operationalization of social media behaviors has, historically, been too broad in the prior literature (Bergman et al., 2011). This broad conceptualization likely captures an abundance of differentially motivated behaviors in its purview when grandiosity is more specifically an antecedent of self-presentational behavior. Previous researchers identify how behaviors might be differentiated by whether the person is consuming or creating content (Pagani, Hofacker, & Goldsmith, 2011), but with such a broad variety of behaviors encompassed in the term "social media," these behaviors have resisted clear categorization.

Wink (1991) first identified covert narcissism (characterized by neuroticism) as separate from overt narcissism (characterized by exhibitionism): using PCA to extract two factors from 6 separate measures of narcissism, he noted that half of the measures showed high loadings on the

first factor and the other half loaded on the second factor. A negative correlation (no p-value reported) between the mean of the three measures that loaded on the first factor with the mean of the three that loaded on the second factor led him to conclude that vulnerable and grandiose narcissism existed on a single, bipolar scale. However, using the ratings of expert clinicians, Thomas and colleagues (2012) simply identified vulnerable narcissism as a separate construct with little overlap, raising the question of whether the two constructs are “two faces of the same coin,” an issue which we feel has not been completely resolved by the literature and requires further study.

The current study proposes a hypothesis for future investigations; the overlap between covert and overt narcissism lies in the entitlement factor of overt narcissism and the egocentrism factor of covert narcissism, which we propose may be tapping into the same latent construct. On the other hand, the oversensitivity to judgment component of covert narcissism is uncorrelated with the leadership component of overt narcissism, suggesting a divergent validity. The grandiose factor of overt narcissism, which seems conceptually central to overt narcissism, was not significantly related to oversensitivity to judgment, again suggesting a divergent validity. By way of contrast, the egocentrism factor of covert narcissism was positively related to all of the 3 overt factors. Based on this pattern of relationships, we now wonder if oversensitivity to judgment and leadership are the differentiating characteristics that separate covert narcissism from overt narcissism, and egocentrism and entitlement are the common basis of both types of narcissism. Perhaps the fear of others’ judgments, underlying the oversensitivity to judgment component of covert narcissism, might account for its lack of relationship with selfie-posting frequency. People with high oversensitivity to judgment may ruminate over the details of their posts or agonize over how they will be interpreted and thus post less frequently because of

avoidance or the amount of time required to curate a post to their satisfaction. Our findings question Wink's (1991) original conclusion that overt and covert narcissism are opposing constructs on a single bipolar dimension, and propose some future research questions: Are egocentrism and entitlement overlapping latent psychological variables? Is oversensitivity to judgment a type of narcissism? Is the leadership component central to narcissism? If so, is it the other side of the coin from oversensitivity to judgment, or are the two simply unrelated?

### **6.3 Gender and Geographic Community Predict Selfie-Posting**

Interestingly, the current study found that both demographic characteristics and regional location of the user predicted their selfie-posting frequency. This is not surprising, given that the social expectations of others can greatly shape our behaviors. The ways in which we interact with others through SNSs may reflect our overt demographic characteristics, such as gender, and individuals may choose to behave in ways that accurately represent their demographics.

In the current study, women engaged in more selfie-posting than men. Gender norms surrounding appearance and self-presentation may govern how women and men behave on SNSs. Women are often socialized to try to appear conventionally attractive, more so than men (Sheppard & Johnson, 2019). Since women in many societies are expected to spend considerable time on their public appearance and self-presentation in the offline space, it is unsurprising that selfies may preferentially attract women. Selfies may allow women a sense of control where they can alter or revise their appearance through filters and editing before posting the picture online. Consequently, in cultures where women strive to present their best face forward, selfies may provide an effective avenue by which they can express themselves within the constraints of their surrounding cultural norms.



Online social norms likely govern how individuals use each SNS. Prior studies have found that age can predict social media site preference (Shane-Simpson et al., 2018), but that age differences in use may be decreasing over time (Pew Research Center, 2013). While the current study did not find that individuals use each site differently depending on their age, age was trending towards being negatively related to selfie-posting frequency. These borderline findings may result from the restricted age range (18 to 26-year-olds) in the current study. Thus, it is possible that with a broader range of age included in the research sample, and future research should consider including samples of varying age ranges, all of which would represent the average SNS user. Differences in SNS use may also result from cohort differences in how people behave online, in which their behaviors likely reflect the social norms of their age cohort. For instance, there may be heightened pressure on certain age cohorts (e.g., those who are single or dating in their 20's) to more frequently update their profiles via selfies. They also likely experience a heightened pressure to present a positive self-image on social media (Perloff, 2014). Combined with certain types of narcissistic traits (e.g., grandiose narcissism), a combination of specific gender (female) and age (18 or 19 years old) norms may result in an amplified motivation to post selfies and post them frequently. Furthermore, these norms may reflect regional or cultural differences that intersect with demographic characteristics.

The current study found interesting differences in selfie-posting frequency that were dependent upon the geographic community in which the sample was collected, where participants from the Northeast US reported the most frequent selfie-posting, followed by those from Lebanon and the Midwest US. These site differences support the idea that cultural communities vary in their norms for SNS behaviors, in addition to varying norms of offline behaviors. As an alternative explanation, SNS behaviors might be driven by personality traits in

different ways in different communities. Under this explanation, models predicting specific types of SNS behaviors are likely to vary depending on the sampled population. Furthermore, this would suggest that relationships between narcissism and SNS use might vary if assessed in different cultural or geographic communities.

These findings also pose additional questions surrounding norm formation on SNSs. For instance, how do communities create themselves by defining their own membership boundaries through SNS use? This is an empirical question which has yet to be addressed systematically in the media literature. However, by including Lebanon, we were able to include participants from a site that not only speaks a different language than the comparison sites (Northeast US and Midwest US), but is also non-European. Furthermore, Lebanese participants use a non-Latin script, amplifying the chances for discontinuity amongst the communities by creating a language and graphemic barrier to block interactions even with the facility of social media. Thus, if we saw systematic differences between Lebanon and not between the two US-based sites, we would suggest that further research, 1) consider the ways that language and script create barriers to forming digital communities, and that 2) geography does not provide a barrier to the formation of online communities on SNSs. However, we saw intra-US differences as well as differences between Lebanon and the Northeastern site. Thus, a more promising avenue for future research would be to investigate how physical geography may continue to play a role in emerging norms on SNSs, thereby separating regions of the US (e.g., Northeast and Midwest).

Varied findings across the samples might also be explained through similarities between the upper middle-class Lebanese participants and the middle-class Midwestern US participants, with a differentiation between the Northeastern US (mixed working and middle class) sample and the other two sites. The current findings may also illustrate the complexities of community

compositions, with the Lebanese and Midwestern US sample showing more similar profiles in terms of class, whereas the Northeastern sample was likely more internally heterogeneous. Due to the site differences identified in the current study, future research should begin to conceptualize both personality and demographic variables as culturally dependent, while also considering how communities can overlap in either time, space, or both.

### 7.0 Limitations

There are several limitations to the current study which provide opportunities for future researchers to build on this work and continue to clarify the relationships between selfie-posting and a suite of personality and demographic factors. First, self-report measures may not reflect actual online behaviors (e.g., selfie-posting frequency) such that the behavior may be under/over reported by participants. Additionally, although there has been an increasing amount of focus on the measurement of narcissism in the literature, confusion remains in defining the types of narcissism and factors of types of narcissism. While Miller and colleagues (2017) have helped to resolve some of the confusion, more work is needed to develop reliable measures of narcissism with clear validation connecting those measures to constructs and explanations for their psychological implications. Similarly, terms surrounding narcissism and its dimensions, facets, types, etc., require additional clarification in the general personality literature. Since narcissism does not have positive connotations, it is particularly important to understand what it means to call non-clinical populations narcissistic, especially given the new components identified within covert narcissism (e.g. egocentrism seems more classically narcissistic than rejection-sensitivity).

As a final measurement issue, we asked participants about their active posting of selfies on Facebook and Instagram, meaning that, for the sake of specificity, we left certain types of behavior out of our investigation. Would the results have changed if we asked people separately

about their selfie-taking behaviors for images which they do not post on social media? Would the results have been different if we separated Instagram from Facebook, or investigated the behaviors on other sites, such as Twitter? Some research has suggested that varying sites associate with different types of narcissism just as they demand different types of content contributions (Panek et al., 2013).

We had two limitations with regards to sampling. First, we hoped to increase attention to the lack of research on the role of culture in personality and vice versa, particularly with regard to the understanding of emerging digital communities on social media. Although the sampled sites (Northeast US, Midwest US, and Lebanon) provided interesting data, three sites are not nearly enough to fully understand the complexity of cultural differences and how they are shaped differently by geographic barriers versus the alternate types of barriers encountered on the internet. Second, to understand whether age is a cohort issue or a life-stage issue, longitudinal data would be needed, especially given that age was trending toward being significant as a predictor of selfie-posting in the current findings. Because our data was restricted to emerging adults aged 18 to 26 years, we do not have a real sense of how age might play a role in social media behaviors. This investigation would require far broader cross-sectional data from varied age cohorts. Furthermore, longitudinal data collection could help researchers establish whether age differences are cohort related or life-stage related (e.g. do people take more selfies because they came of age when selfies were hot and new, or do they take more selfies because they are young and seeking to display their beauty to attract a mate).

## 8.0 Conclusions

Demographic variables (e.g., gender), geographic community, and certain types of narcissism (e.g., grandiose) can predict selfie-posting behaviors. Based on the current findings, it

is advised that future studies refrain from measuring narcissism as one personality factor, and instead, narcissism should be investigated as a multidimensional construct consisting of numerous personality descriptors that may be differentially related to SNS behavior. The specific methods by which narcissism is measured in a study may dramatically impact the power of a model in predicting SNS behavior. In addition, each dimension of narcissism carries with it varied outward or inward behaviors that can be expressed in unique ways on varying SNSs. Consequently, the current findings should be explored with other SNSs so that the affordances which differ from Facebook and Instagram, to Twitter and SnapChat can be better understood.

The review of the prior literature included in this report also highlights the importance of operationalizing social media behavior, in which predictive models for online behavior should isolate the specific forms of behavior being measured. For instance, although the current study focused on content creation and sharing behaviors, other studies may find that consumptive behaviors are not predicted by the same subcomponent of narcissism. Finally, this study illustrates the significant role that culture appears to play in predicting SNS behavior. Future studies should use caution in generalizing relationships between personality and SNS behavior across cultures, and perhaps, prior studies linking personality and SNS behavior should be re-examined from a cross-cultural perspective to ensure the global validity of these predictive models of behavior.

## References

- A brief history of the selfie. (2013, October 15). Retrieved from [https://www.huffpost.com/entry/selfie-history-infographic\\_n\\_4101645](https://www.huffpost.com/entry/selfie-history-infographic_n_4101645)
- Abdi, H., & Williams, L. J. (2010). Principal component analysis. *Wiley Interdisciplinary Reviews: Computational Statistics*, 2(4), 433-459.
- Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. (2011). What does the Narcissistic Personality Inventory really measure? *Assessment*, 18, 67–87.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11-39). Springer: Berlin, Heidelberg.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Ajzen, I. (2011). The theory of planned behaviour: reactions and reflections. *Psychology & Health*, 26(9), 1113-1127.
- Arpacia, I., Yalçınb, S. B., Baloğluc, M., & Kesicib, S. (2018). The moderating effect of gender in the relationship between narcissism and selfie-posting behavior. *Personality and Individual Differences*, 134, 71-74.
- Barry, C. T., Doucette, H., Loflin, D. C., Rivera-Hudson, N., & Herrington, L. L. (2015). “Let me take a selfie”: Associations between self-photography, narcissism, and self-esteem. *Psychology of Popular Media Culture*, 6(1), 48-60.
- Barry, C. T., Reiter, S. R., Anderson, A. C., Schoessler, M. L., & Sidoti, C. L. (2017). “Let me take another selfie”: Further examination of the relation between narcissism, self-

- perception, and instagram posts. *Psychology of Popular Media Culture*, 8(1), 22-33. doi: <http://dx.doi.org/10.1037/ppm0000155>
- Bergman, S. M., Fearington, M. E., Davenport, S. W., & Bergman, J. Z. (2011). Millennials, narcissism, and social networking: What narcissists do on social networking sites and why. *Personality and Individual Differences*, 50, 706–711.
- Cain, N. M., Pincus, A. L., & Ansell, E. B. (2008). Narcissism at the crossroads: Phenotypic description of pathological narcissism across clinical theory, social/personality psychology, and psychiatric diagnosis. *Clinical Psychology Review*, 28(4), 638-656.
- Davenport, S. W., Bergman, S. M., Bergman, J. Z., & Fearington, M. E. (2014). Twitter versus Facebook: Exploring the role of narcissism in the motives and usage of different social media platforms. *Computers in Human Behavior*, 32, 212-220.
- Diekmann, A. B., & Goodfriend, W. (2006). Rolling with the changes: A role congruity perspective on gender norms. *Psychology of Women Quarterly*, 30(4), 369-383.
- Drake, C. E., Primeaux, S., & Thomas, J. (2018). Comparing implicit gender stereotypes between women and men with the implicit relational assessment procedure. *Gender Issues*, 35(1), 3-20. Retrieved from <https://doi.org/10.1007/s12147-017-9189-6>
- Fossati, A., Borroni, S., Grazioli, F., Dornetti, L., Marcassoli, I., Maffei, C., & Cheek, J. (2009). Tracking the hypersensitive dimension in narcissism: Reliability and validity of the Hypersensitive Narcissism Scale. *Personality and Mental Health*, 3(4), 235-247.
- Friedman, L. (2013). The app store turns five: A look back and forward. Retrieved from <http://www.macworld.com/article/2043841/the-app-store-turns-five-a-look-back-and-forward.html>

- Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., ... & Aycan, Z. (2011). Differences between tight and loose cultures: A 33-nation study. *Science*, *332*(6033), 1100-1104.
- Gentile, B., Miller, J. D., Hoffman, B. J., Reidy, D. E., Zeichner, A., & Campbell, W. K. (2013). A test of two brief measures of grandiose narcissism: The Narcissistic Personality Inventory–13 and the Narcissistic Personality Inventory-16. *Psychological Assessment*, *25*(4), 1120.
- Gnambs, T., & Appel, M. (2018). Narcissism and social networking behavior: A meta-analysis. *Journal of Personality*, *86*(2), 200-212.
- Hendin, H. M., & Cheek, J. M. (1997). Assessing hypersensitive narcissism: A reexamination of Murray's Narcism Scale. *Journal of Research in Personality*, *31*(4), 588-599.
- Hofstede, G. (1983). National cultures in four dimensions: A research-based theory of cultural differences among nations. *International Studies of Management & Organization*, *13*(1-2), 46-74.
- Kim, E., Lee, J. A., Sung, Y., & Choi, S. M. (2016). Predicting selfie-posting behavior on social networking sites: An extension of theory of planned behavior. *Computers in Human Behavior*, *62*, 116-123. <https://doi.org/10.1016/j.chb.2016.03.078>
- Kruszelnicki, K. S. (2014, August 12). A brief history of the selfie. Retrieved from <http://www.abc.net.au/science/articles/2014/08/12/4065062.htm>
- Lee, J. A., & Sung, Y. (2016). Hide-and-seek: Narcissism and “selfie”-related behavior. *Cyberpsychology, Behavior, and Social Networking*, *19*(5), 347-351.
- March, E., & McBean, T. (2018). New evidence shows self-esteem moderates the relationship between narcissism and selfies. *Personality and Individual Differences*, *130*, 107-111.



McCain, J. L., Borg, Z. G., Rothenberg, A. H., Churillo, K. M., Weiler, P., & Campbell, W. K.

(2016). Personality and selfies: Narcissism and the Dark Triad. *Computers in Human Behavior*, *64*, 126-133.

McCain, J. L., & Campbell, W. K. (2018). Narcissism and social media use: A meta-analytic review. *Psychology of Popular Media Culture*, *7*(3), 308.

Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook.

*Cyberpsychology, Behavior, and Social Networking*, *13*, 357–364.

Miller, J. D., Lynam, D. R., Hyatt, C. S., & Campbell, W. K. (2017). Controversies in narcissism. *Annual Review of Clinical Psychology*, *13*, 291-315.

Miller, J. D., & Maples, J. (2011). Trait personality models of narcissistic personality disorder, grandiose narcissism, and vulnerable narcissism. *The handbook of narcissism and narcissistic personality disorder: Theoretical approaches, empirical findings, and treatments*, 71-88.

Motorola A835. (2003, September 16). Retrieved from

[https://www.phonearena.com/phones/Motorola-A835\\_id696](https://www.phonearena.com/phones/Motorola-A835_id696)

Olson, D. R. (1996). *The world on paper: The conceptual and cognitive implications of writing and reading*. Cambridge, UK: Cambridge University Press.

Oxford Dictionaries Word of the Year 2013 is... (2013, November 30). Retrieved from

<https://en.oxforddictionaries.com/word-of-the-year/word-of-the-year-2013>

Pagani, M., Hofacker, C. F., & Goldsmith, R. E. (2011). The influence of personality on active and passive use of social networking sites. *Psychology & Marketing*, *28*(5), 441-456.

- Panek, E. T., Nardis, Y., & Konrath, S. (2013). Mirror or Megaphone?: How relationships between narcissism and social networking site use differ on Facebook and Twitter. *Computers in Human Behavior*, 29(5), 2004-2012.
- Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex Roles*, 71(11-12), 363-377.
- Pew Research Center. (2013, September 12). It's a woman's (social media) world. Retrieved from <http://www.pewresearch.org/fact-tank/2013/09/12/its-awomans-social-media-world/>.
- Pew Research Center. (2015, April 9). Teens, social media & technology overview 2015: Smartphones facilitate shifts in communication landscape for teens. Retrieved from <https://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/>
- Quito, A. (2017, October 26). Front-facing cameras were never intended for selfies. *Quartz*. Retrieved from <https://qz.com/1104742/front-facing-cameras-were-never-intended-for-selfies/>
- Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, 54, 890-902.
- Ryan, T., & Xenos, S. (2011). Who uses Facebook? An investigation into the relationship between the Big Five, shyness, narcissism, loneliness, and Facebook usage. *Computers in Human Behavior*, 27(5), 1658-1664.
- Selfie. (2019). In *Oxford English Dictionary Online* (3<sup>rd</sup> ed.), Retrieved from <https://www.oed.com/>

- Shane-Simpson, C. and Gillespie-Lynch, K. (2017). Examining potential mechanisms underlying the Wikipedia gender gap through a collaborative editing task. *Computers in Human Behavior, 66*, 312-328.
- Shane-Simpson, C., Manago, A., Gaggi, N., & Gillespie-Lynch, K. (2018). Why do college students prefer Facebook, Twitter, or Instagram? Potential tensions between privacy and self-disclosure, and implications for social capital. *Computers in Human Behaviors, 86*, 276-288.
- Sheldon, P., & Bryant, K. (2016). Instagram: Motives for its use and relationship to narcissism and contextual age. *Computers in Human Behavior, 58*, 89-97.
- Sheppard, L. D., & Johnson, S. K. (2019). The femme fatale effect: Attractiveness is a liability for businesswomen's perceived truthfulness, trust, and deservingness of Termination. *Sex Roles, 1-18*.
- Sorokowski, P., Sorokowska, A., Oleszkiewicz, A., Frackowiak, T., Huk, A., & Pisanski, K. (2015). Selfie posting behaviors are associated with narcissism among men. *Personality and Individual Differences, 85*, 123-127.
- Stone, B. M., & Bartholomay, E. M. (2019). A multidimensional Hypersensitive Narcissism Scale explains gender-dependent manifestations of covert narcissism [PowerPoint slides]. Retrieved from [www.midwesternpsych.org](http://www.midwesternpsych.org).
- Sung, Y., Lee, J. A., Kim, E., & Choi, S. M. (2016). Why we post selfies: Understanding motivations for posting pictures of oneself. *Personality and Individual Differences, 97*, 260-265.

- Thomas, K. M., Wright, A. G., Lukowitsky, M. R., Donnellan, M. B., & Hopwood, C. J. (2012). Evidence for the criterion validity and clinical utility of the Pathological Narcissism Inventory. *Assessment, 19*(2), 135-145.
- Wang, J. L., Jackson, L. A., Zhang, D. J., & Su, Z. Q. (2012). The relationships among the Big Five Personality factors, self-esteem, narcissism, and sensation-seeking to Chinese University students' uses of social networking sites (SNSs). *Computers in Human Behavior, 28*(6), 2313-2319.
- Wang, Y., Xie, X., Wang, X., Wang, P., Nie, J., & Lei, L. (2018). Narcissism and selfie-posting behavior: the mediating role of body satisfaction and the moderating role of attitude toward selfie-posting behavior. *Current Psychology, 1*-8.
- Weiser, E. B. (2015). #Me: Narcissism and its facets as predictors of selfie-posting frequency. *Personality and Individual Differences, 86*, 477-481.
- Wink, P. (1991). Two faces of narcissism. *Journal of Personality and Social Psychology, 61*, 590-597.

### **9.0 Acknowledgements**

The authorship team would like to thank Catherine Deutsch for her support in editing and proofing this manuscript in preparation for journal submission. We would also like to express our greatest gratitude toward our anonymous manuscript reviewers. Their constructive feedback helped the authors to strengthen both the clarity and focus of the current paper.

Journal Pre-proof

## NARCISSISM, SELFIES, AND COMMUNITY

**Highlights**

- Covert narcissism consists of two factors: egocentrism and oversensitivity to judgment.
- Selfie-posting frequency can be predicted by grandiose narcissism.
- Female participants posted more selfies than males.
- Selfie-posting frequency varies by geographic community: Northeasterners posted the most.

Journal Pre-proof

Table 1

*Participants' Demographic Information*

	<b>Midwest US</b>	<b>East Coast US</b>	<b>Lebanon</b>
<b>Gender</b>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>
Male	74 (39)	103 (38)	58 (22)
Female	114 (61)	171 (62)	201 (78)
<b>Ethnicity</b>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>
Black/African-American	6 (3)	17 (6)	N/A
Black Latino	N/A	13 (5)	N/A
White	163 (88)	97 (36)	3 (1)
White Latino	1 (<1)	59 (22)	1 (<1)
Latino Unspecified	2 (1)	4 (2)	1 (<1)
Asian	8 (4)	27 (10)	3 (1)
Middle Eastern/North African	N/A	17 (6)	251 (97)
West Indian/Caribbean	N/A	29 (11)	N/A
Native Hawaiian/Pacific Islander	5 (2.7)	N/A	N/A
African	N/A	7 (3)	N/A

<b>Socio-Economic Status</b>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>
Did not complete high school	3 (1.5)	36 (13.0)	26 (10)
Graduated from high school	39 (20.0)	102 (37.0)	38 (14.6)
Some college credit, no degree	49 (25.1)	50 (18.1)	45 (17.3)
Bachelor's degree	56 (28.7)	36 (13.0)	110 (42.3)
Master's degree	25 (12.8)	15 (5.4)	25 (9.6)
PhD/MD/JD	0 (0.0)	4 (1.5)	13 (5.0)
Other/Prefer not to answer/Missing	23 (11.8)	14 (12.0)	3 (1.2)

*Note.* Percentages are in parentheses. Socioeconomic status was measured by mother's level of education.



Table 2

*Factor Loadings for 9 Items of the Hypersensitive Narcissism Scale*

<i>Items</i>	<i>Component 1: Oversensitivity to Judgment</i>	<i>Component 2: Egocentrism</i>
1. My feelings are easily hurt by ridicule or by the slighting remarks of others.	0.88	
2. When I enter a room, I often become self-conscious and feel that the eyes of others are upon me.	0.78	
6. I often interpret the remarks of others in a personal way.	0.78	
8. I dislike being with a group unless I know that I am appreciated by at least one of those present.	0.53	
4. I feel that I have enough on my hands without worrying about other people's troubles.		0.81
7. I easily become wrapped up in my own interests and forget the existence of		0.64

others.

5. I feel that I am temperamentally  
different from most people. 0.57

3. I dislike sharing the credit of an  
achievement with others. 0.41

9. I am secretly "put out" or annoyed  
when other people come to me with  
their troubles, asking me for my time  
and sympathy. 0.74

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*Note.*  $N = 716$ . One item was removed from the original scale due to an error during Qualtrics data collection. Items are sorted by the strength of the factor loading coefficient. Cronbach's alpha of Component 1: Oversensitivity to Judgment was .77, while Cronbach's alpha of Component 2: Egocentrism was .68.

Table 3

*Linear Regression Predicting Selfie-Posting Frequency by Gender, Age, Geographic Community, Leadership Narcissism, Grandiose Narcissism, Entitlement Narcissism, Egocentrism Covert Narcissism, and Oversensitivity to Judgment Covert Narcissism*

<i>Variable</i>	<i>B</i>	<i>SE B</i>	<i>Exp B</i>	<i>p-values</i>
(Constant)	1.09	0.35		0.001
Gender	0.38	0.07	0.21	<.001*
Age	-0.03	0.01	-0.07	0.057
Geographic Community	-0.14	0.04	-0.13	0.001*
Socio-Economic Status	-0.02	0.02	-0.03	0.416
Leadership Narcissism	0.01	0.04	0.02	0.740
Grandiose Narcissism	0.14	0.04	0.16	<.001*
Entitlement Narcissism	-0.03	0.05	-0.04	0.450
Oversensitivity to Judgment Covert Narcissism	-0.01	0.04	-0.01	0.823
Egocentrism Covert Narcissism	0.06	0.05	0.05	0.266

Note.  $R^2 = .10$ ,  $F(9, 619) = 7.94$ ,  $p < .001$ . An asterisk indicates significance at the .05 level.

Table 4

*Binomial Logistic Regression of Narcissism (Overt and Covert) Across Gender*

		<i>B</i>	<i>SE</i>	<i>p</i>
	Intercept	-0.24	0.44	.58
Overt Narcissism	Leadership	-0.02	0.11	.83
	Grandiose	-0.18	0.10	.07
	Entitlement	0.15	0.12	.18
Covert Narcissism	Egocentrism	-0.48	0.10	<.001
	Oversensitivity to Judgment	0.35	0.13	.007

*Note.* The reference category is Female.

Table 5

*Multinomial Logistic Regression of Narcissism (Overt and Covert) Across the Three Geographic Regions*

		<i>B</i>	<i>SE</i>	<i>Wald</i>	<i>p</i>	
		Intercept	-0.45	0.52	0.74	.39
Northeast US vs. Midwest US <sup>a</sup>	Overt Narcissism	Leadership	-0.33	0.13	6.13	.01
		Grandiose	0.31	0.12	6.31	.01
		Entitlement	0.73	0.15	24.59	<.001
	Covert Narcissism	Egocentrism	-0.49	0.13	14.91	<.001
		Oversensitivity to Judgment	0.21	0.16	1.84	.18
		Intercept	-2.17	0.60	13.26	<.001
Lebanon vs. Midwest US <sup>a</sup>	Overt Narcissism	Leadership	-0.38	0.14	7.30	.01
		Grandiose	-0.08	0.13	0.36	.55
		Entitlement	1.61	0.17	90.09	<.001
	Covert Narcissism	Egocentrism	0.17	0.13	1.75	.19
		Oversensitivity to Judgment	-0.52	0.17	9.63	<.001

		Intercept	-1.72	0.53	10.74	<.001
	Overt Narcissism	Leadership	-0.06	0.12	0.21	.65
		Grandiose	-0.38	0.11	12.69	<.001
Lebanon vs.		Entitlement	0.87	0.15	35.61	<.001
Northeast US <sup>b</sup>	Covert Narcissism	Egocentrism	0.66	0.12	31.79	<.001
		Oversensitivity	-0.73	0.15	24.35	.00
		to Judgment				

*Note.* <sup>a</sup>Reference category is Midwest US; <sup>b</sup>Reference category is Northeast US.