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## **Acknowledgements**

I am greatly appreciative to Professor Colin Tredoux for his patience, guidance and assistance in the writing of this dissertation. Acknowledgement and appreciation also goes to Pedro Wolf and Tarah Swanepoel for their assistance and facilitation at the beginning of my research process and for encouraging me.

Thank you to Kathryn Pahl for her assistance and support regarding the statistical component of this study.

I could never have accomplished this project without the ongoing support of my amazing family. My sincerest thanks to my incredible husband for his love, encouragement and patience throughout this project. Thank you to my wonderful mother and siblings for their faith in me, and for being there during this process.

**Declaration**

1. I acknowledge that plagiarism, which is using another's work and to present it as one's own, is wrong.
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**Signed**

Signed by: Nurain Tisaker

Date: 18 July 2016

Word Count (Chapters 1 - 5 and References): 23 139

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## **Abstract**

Based on extensive research from the USA, Europe and Asia into mental health symptoms, it has been suggested that mental health might be influenced by social networking use, and specifically Facebook. It is evident that there is a gap in studies and local research into mental health and social networking. From a South African perspective, there appears to be no known research conducted in this field, and therefore the rationale for the present study was based on the observation that, as a large proportion of South African internet users also use Facebook, it would be fruitful to focus on whether mental health symptoms were influenced by Facebook use in a South African setting.

The study adopted a quantitative approach to explore different hypotheses. The hypotheses included whether more Facebook activity might correlate with an increase in feelings of depression (Hypothesis 1); whether there was a correlation between individuals with low self-esteem and their level of Facebook activity (Hypothesis 2); and whether high narcissism scores in individuals indicated a correlation with increased or high levels of Facebook activity (Hypothesis 3). A total of 336 participants who were students from the University of Cape Town (UCT) completed the survey, which comprised several questionnaires.

The first questionnaire required participants to provide their demographic information. The second measure addressed their Facebook online activity, requiring that participants indicate how many times they check their Facebook page each day, the time spent on Facebook per session, and how they accessed Facebook. Other questionnaires assessed the psychological constructs of depression, self-esteem and narcissism, using existing scales. These included the Beck Depression Inventory (BDI-II); the Centre for Epidemiologic Studies Depression Scale (CES-D); the Rosenberg Self-esteem Scale (RSES); and the Narcissism Personality Inventory (NPI-16). The data were analysed across several

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steps, including descriptive statistics, to explore demographics (i.e. age, sex and race); then participants' scores on the psychological constructs (BDI-II, CES-D, RSES, and NPI-16) were explored to gain an overall impression of the sample and a basic understanding of how participants scored on the various psychological constructs. Thereafter Pearson correlations were calculated to assess whether participants' scores on the psychological constructs correlated with their Facebook activity, as measured by their time spent, the number of times they checked Facebook, and their method of access.

The results indicated that there was no significant relationship between Facebook activity and the psychological constructs explored. This finding contradicts various studies discussed in the literature review, some of which suggest that Facebook use could have a negative effect on depressive symptoms, self-esteem and narcissistic traits, and some which suggest that Facebook use could have a positive effect on mental health.

*Keywords:* social networking, Facebook, depression, self-esteem, narcissism, mental health, social media, mental wellbeing, university students, young adults.

## **Chapter 1**

### **Introduction**

People have in recent years become more and more dependent on internet use and, in addition, on social media. With technology advancement, gaining access to the internet and connecting to social networking sites is less complex, making worldwide communication with others easily accessible. Internet users have embraced this means of communication, using it to expedite existing friendships and forge new relationships. As social media is viewed as a 'faceless' and non-threatening form of easy communication, internet users who might have had difficulty in forming relationships in the past, have been presented with the means of encountering numerous relationships and friendships, in the safety of cyberspace (Selfhout, Branje, Delsing, ter Bogt, & Meeus, 2009).

However, this facility has come at a price, as studies indicate that social media use can trigger negative feelings and thoughts that may result in symptoms of depression, and that it may promote a false view of one's self-esteem and, conversely, also narcissism. The present study has taken these studies into consideration by attempting to analyse and examine the relationship between the psychological constructs of depression, narcissism and self-esteem, and social media (i.e. Facebook) activity. This aim was achieved by measuring usage in relation to the amount of time that users spend on Facebook, the frequency of access to social media, and the method of access to the network and social media.

The impact of social media has been a topical issue, especially in the 21st century and as studies reflect a connection with mental health. The present study has furthered this issue with the intention of establishing its validity. A sizeable sample of students was used to establish a possible connection between the use of social media, concentrating on Facebook as an example, to establish a link between its continued use and negative effects on constructs such as depression, self-esteem and narcissism.

The initial investigation reflected that, in South Africa, the negative effects of social media use have been largely neglected in research, and therefore the present study addresses a gap in the literature. The rationale was accordingly based on the large proportion of South African internet users who also used Facebook (13 million active users, recorded in November 2015), and it would therefore be appropriate to determine a possible link between mental health symptoms and Facebook use, as such a study within a South African context would broaden available research (Internet World Stats, 2015).

### **Background**

The intention of the present study was to provide a critical analysis of the reviewed articles, show their link to the main topic, and finally provide a synthesis that would add value to the subject and existing research, rather than merely listing and describing different articles loosely relating to the topic. The evaluation of the reviewed articles is therefore presented in meaningful form, to serve as a framework for the approach to the central theme, namely the effect on mental wellbeing of Facebook use.

As there is currently limited research in the field (from a local perspective), the present study aims to address this hiatus. Previous research has indicated that an extensive amount of information and research has been conducted in other continents and countries, such as the USA, Europe and Asia. The present study was guided by the latter studies, using them as a benchmark for focusing on local research. Based on the sample used in the present study, patterns of social media use and the results thereof were detected, enabling the effects to be determined, as established by quantitative research.

### **Research on social networks**

There is an overwhelming amount of research and information on the topic of internet use. A basic search on the Web of Science platform produced 3143 articles published in the last 10 years. The research was refined to try to include only that most relevant to the

hypotheses of the present study (reflected later in this chapter). As discussed in the introduction, it has become inevitable for internet users to engage with social networking as a means of quick and easy access to personal and social interaction (Gonzales & Hancock, 2011). The intention of internet users is often to initiate or further friendships by visiting social network sites such as Twitter and Facebook, which serve as internet-based platforms that enable users to compile a profile of themselves, listing personal details such as hobbies and background information. In addition, they invite and add friends, and in this manner connect with others around the globe, at the same time having access to these friends' profiles (Boyd & Ellison, 2007). Such social networking sites have created the opportunity for users of all ages to engage with one another and expand friendships (Subrahmanyam, Reich, Waechter, & Espinoza, 2008). Social networking sites are particularly popular amongst millennials (i.e. those born between the early 1980s and early 2000) or those known to have grown up in the 'iGeneration', being those young adults who have grown up with social networking as part of their everyday lives (Rosen, Whaling, Rab, Carrier, & Cheever, 2013). Accordingly, this generation appear comfortable with the idea of having an online presence and view it as a normal way of expressing and presenting themselves (Hunt, Atkin, & Krishnan, 2012). Facebook, created by Mark Zuckerberg, remains the social networking site of choice around the world, boasting 1.65 billion monthly active users (Statista, 2016).

### **Assessing human behaviour via social networking**

Conventional methods of the study of human behaviour have in recent years expanded to the use of social networking platforms as a means to examine human behaviour. With internet use having become habitual in people's daily lives, it has become inevitable to explore the association between the constant use of social networking sites and its impact on human behaviour. Research studies have begun exploring various aspects of Facebook and have categorised these investigations into several groups. To examine who uses Facebook

and what they do while on the social networking platform, the first category of research was in collecting descriptive data of Facebook users, whilst the second group explored motivations for why users utilise the social networking platform (Wilson, Gosling, & Graham, 2012). Another category of research examined the role of Facebook in social interactions and sought to explain how Facebook influences relationships amongst groups and individuals (Thompson & Lougheed, 2012). In this regard, the following category investigated the characteristics of friendship connections (Wimmer & Lewis, 2010). Other research was concerned with the concept of privacy and sought to explain why people disclose personal details on Facebook, despite the potential risks (Wilson et al., 2012). The final category of research explored how users present themselves and behave on Facebook, dependent on their personality traits (Buffardi & Campbell, 2008; Ivcevic & Ambady, 2012; Krämer & Winter, 2008; Mehdizadeh, 2010). Based on this wide array of research that has become possible through accessing social networking sites, it is apparent that this platform offers an opportunity for the understanding of various aspects of human behaviour. This presents a fascinating opportunity for research, revealing patterns of behaviour, the search for human interaction, albeit via cyber communication, and how this behaviour becomes a dependence, often with negative side-effects.

Notably, this research has also shown that online behaviour is not isolated from behaviour in daily human interactions. As a result, the behaviour observed via online platforms such as Facebook can be understood as being determined by the same psychological mechanisms that underlie normal interpersonal interactions, allowing us to explore human behaviour in another context (Bergman, Fearington, Davenport, & Bergman, 2011).

Of particular interest for this research study is that literature exploring the influence of Facebook use on symptoms of depression, self-esteem and narcissism has been explored. For

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the most part, the literature was inconclusive, generating mixed results when exploring various psychological constructs and Facebook use; and, in particular, the research exploring the impact that social networking has on depressive symptoms yielded mixed results. Various studies have stated that there is an association between depressive symptoms and social networking activity (Davila et al., 2012; Jelenchick, Eickhoff, & Moreno, 2013; Moreno et al., 2011; Pantic et al., 2012; Tandoc, Ferrucci, & Duffy, 2015), with one study linking a long-standing form of depression (persistent depressive disorder) with internet addiction (Rosen et al., 2013). Another example is a study exploring the effects of general internet use amongst young adults, where it was reported that greater internet use predicted an increase in depressive symptoms over a period of one year (Kraut et al., 1998).

The literature exploring self-esteem and its associations with social networking involvement has, as indicated, generated varied results. In the study by Mehdizadeh (2010), who examined how self-esteem was manifested on Facebook, results suggested that participants who scored lower on a self-esteem scale were more inclined to spend more time on the social networking platform. In contrast, Krämer & Winter (2008) found that self-esteem was not related to StudiVZ activity (a German social networking website similar to Facebook (Krämer & Winter, 2008; Mehdizadeh, 2010).

However, when examining the research exploring the link between social networking use and narcissistic traits, more conclusive evidence appears. In two separate studies, Buffardi & Campbell (2008) and Mehdizadeh (2010) hypothesised that individuals who scored high on the Narcissism Personality Inventory (NPI-16) would demonstrate a significantly positive association between the amount of time they spent on Facebook per session and the number of times Facebook was checked per day. The results supported their hypothesis, with positive associations being observed amongst self-promoting content and high scores on the NPI-16.

### **Purpose of the study**

Review of the literature indicated a paucity in local research on social networking and mental health; the current research intended to address this lack by conducting a study with a sample of local participants. The main intention was to examine whether social networking, and specifically Facebook use, would provide evidence for an association between the psychological constructs of depression, narcissism and self-esteem and Facebook activity, where Facebook activity was measured in relation to the amount of time that users spent on Facebook, how frequently they accessed Facebook, and their method of access to Facebook.

### **Research design**

A quantitative approach was used to conduct the research. Questionnaires known to have good reliability and validity indices were used as they were effective in measuring the psychological constructs to be measured for the purpose of the research. Participants completed several questionnaires; including the Beck Depression Inventory (Beck et al., 1996), the Centre for Epidemiologic Studies Depression Scale (Radloff, 1977), the Rosenberg Self-Esteem Scale (Rosenberg, 1989) and the Narcissism Personality Inventory (Ames, Rose & Anderson, 2006).

### **Sample**

All participants in the study were undergraduate students from the University of Cape Town, between the ages of 18 and 24 years old. The average participant was 19 years old and all were classified racially as white. All were Facebook users, and were requested to complete the various questionnaires.

A total of 336 participants answered the questionnaires via the Student Research Participation Programme (SRPP) site on the UCT Vula system. This programme requires that undergraduate students take part in a certain number of studies as part of their courses at the university. Of these students, 100 participants met with members of the research team to have



specific information from their Facebook manually coded. All participants were required to take part in some form of psychological research through the SRPP for duly performed (DP) purposes as part of their qualification.

### **Significance of the study**

As indicated in the various examples cited in the current chapter and in the ensuing sections, international studies have indicated that Facebook and other social networking sites may well have a significant influence on mental health, affecting self-esteem, feelings of depression and personality characteristics, especially amongst young adults.

The present study will be of benefit to research in the South African context as it may shed light on the influence that social networking has on users from a local perspective. Additionally, the findings may benefit those in the helping professions (e.g. doctors, psychologists and social workers) in identifying clinical symptoms that may arise in various settings as a result of Facebook use.

### **Hypotheses**

For the purpose of the present research study, the following hypotheses were examined:

H1: Amount of Facebook activity will correlate with depression scores (as measured by the BDI-II and CES-D).

H2: Amount of Facebook activity will correlate with self-esteem scores (as measured by the RSES).

H3: Amount of Facebook activity will correlate with narcissism scores (as measured by the NPI-16).

### **Theoretical framework**

At present, there is no specific theoretical framework that exists for examining the relationship between mental health and its relationship with social networking activity. To

understand what might motivate users to engage in social networking, social comparison theory was utilised. This theory proposes that, through comparing themselves with others, individuals evaluate their own abilities, weaknesses and strengths (Festinger, 1954). This theory further illustrates that, as a result of comparison with others, individuals may feel positively or negatively about themselves. An aspect of social comparison theory concerns the various emotional consequences of social comparison. For example, individuals who compare themselves with others more frequently, tend to have negative emotional responses because of comparing themselves with others whom they perceive as being ‘worse off’ than themselves (i.e. downward social comparison) (Buunk and Gibbons, 2006). However, comparing oneself to others perceived as being ‘better off’ than oneself (i.e. upward comparison) has yielded inconsistent results.

According to de Vries & Kühne (2015), social comparison theory not only accounts for what may motivate social networking activity, but also takes into account symptoms of depression, levels of self-esteem and narcissistic traits that may emerge when engaging in online social network. This theory was as a result used as a framework in explaining the possible association between depression, self-esteem and narcissistic traits and social networking activity.

### **Other chapters**

The remaining chapters of the present thesis are structured as follows:

Chapter 2 reviews the current academic research relating to the relationship between depression, self-esteem and narcissism and Facebook activity. Central to this review, social comparison theory is discussed and utilised as an underlying theory to explore what may motivate Facebook activity and its relationship with depression, self-esteem and narcissism.

Chapter 3 explores the study’s aims and methodology, expanding on the research design, sampling used, data collection measures as well as data analysis and ethical issues. In

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Chapter 4, test results are presented, and data analysis outlined. Chapter 5 discusses the results in relation to current academic literature and reviews suggestions for future research as well as limitations of the present study.

## Chapter 2

### Literature review

#### 2.1 Introduction

Communication between people has never been easier. Internet communication in the form of email, Facebook, Skype and messenger services are some of the rapid forms of online communication. However, being able to communicate quickly and efficiently has not been without detractions. Internet users, who gravitate towards social media platforms such as Skype, WhatsApp and Facebook, tend to become habitual users, and maintaining this need has attracted the possibility of users exhibiting symptoms of depression and decreasing levels of self-esteem (Kraut et al., 1998). There is currently a growing apprehension about the impact of technology and its influence on psychological health. One of many studies investigating negative influences of consistent social network use, suggests that there are negative consequences for psychological health as a result of technology use (Rosen, Cheever and Carrier, 2012). Furthermore, the impact of engaging with social networking sites such as Facebook and Twitter has been found to affect individuals negatively, influencing the presentation of psychological symptoms related to depressive disorders, personality disorders and general self-esteem (Rosen, et al., 2013).

Researchers have conducted several studies and found a connection between continuous use of social media and symptoms of depression, lower self-esteem and, conversely, of narcissism. The present study concurs with this view, reinforcing this theory in a local context, as there are insufficient existing research data in South Africa to support the suggestion of a link between mental wellbeing and habitual use of social media as has been established by international studies. As digital forms of communication are more and more commonplace and incorporated into individuals' daily lives, they have become more prevalent, creating a need to address the issue by means of studies and analyses of frequent

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social media use. Last year (2015), as many as 3.2 billion people used the internet, according to Internet World Stats (2015), reinforcing the fact that social interaction has become more and more digital, rather than face to face. In addition to using social media as a platform to share information with many people at once, Facebook has also been used by its users to stay up to date with news and current events/trends (Statista, 2015). The platform has also been used by individual business owners, small organisations and large corporations to market their businesses, advertise events and to receive feedback from existing or prospective customers (Waters, Burnett, Lamm and Lucas, 2008).

More recently, social networking sites such as Facebook, Twitter and Google+ have enabled an alternative way for people to socialise and interact with likeminded people, broadening their social community and sharing hobbies and interests. This expanding digital social interaction does, however, have limitations, as there is a suggestion of dependence based on persistent use on the one hand, while on the other providing ways to find new friends, romance or groups with shared interests. This development has as a result attracted interest from theorists and psychologists alike to explore the implications of social network use.

Studies indicate a possible link between the consistent use of social online platforms and symptoms of depression, and other negative aspects of mental wellbeing (Morgan & Cotten, 2003; Pantic, 2014; Youn et al., 2013). Statistically, the most popular online social networking platform, Facebook, is reported to have on average 1.59 billion active users per month and 968 million active users per day (Facebook Key Fact, 2015); and more than a billion people, at the time of writing this thesis, use Facebook mobile products, accessing the platform via smart phones (Facebook Key Fact, 2015 and Statista, 2015). As Facebook was created as a network to connect university students, its 'target' age group at that time was those aged 18–24 years. In more recent years, demographically, Facebook has seen a growth

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in users both under the age of 18 years and over 24 years (Social Network Demographics, 2015). The current average age distribution demonstrates that people between the ages of 18 and 29 years utilise social networking sites more frequently overall, with this demographic representing 87% of Facebook users. The present study has based qualitative research on this 'ballpark' age group.

However, it is not only younger age groups who indicate habitual and consistent daily use of networks to communicate socially. Social Network Demographics (2015) report that adults  $\geq 35$  years comprised 65% of Facebook users during 2015. In South Africa, more than 11.8 million of the more than 24 million internet users, access Facebook by means of tools such as laptops, smart phones and PC tablets (World Wide Works, 2014).

As a result of this easy access to social networks, the potential risks of developing psychological symptoms may increase. In their study, Ellison, Steinfield, and Lampe (2007) enrolled 800 undergraduate students from Michigan State University to explore whether Facebook use resulted in the development and maintenance of social resources through their relationships with others. The study determined that those with low self-esteem increased social connections via Facebook use. Based on the findings by Ellison et al. (2007) as well as Bargh, McKenna, & Fitzsimons (2002), it is suggested that since relationship building links to wellbeing, self-esteem and life satisfaction, there is clear evidence supporting the notion that Facebook users may build a reliance on social networking use in order to enhance their own psychological wellbeing.

Based on an international sample of 1026 users who completed an online survey exploring how they use Facebook, McAndrew and Sun Jeong (2012) found that young female users and in particular those who were not in a devoted relationship were the most active users on Facebook. The study found that female subjects had a tendency to have more Facebook friends and were more inclined to spend more time on Facebook. These users were

found to be more motivated to use their profile pictures as a way of creating and managing how they are perceived by their friends. The study also concludes that older females and other older Facebook users would spend equally more time on Facebook, but were more concerned with family activity. In contrast, the study suggests that male users tend to use Facebook in a different way than females do, depending on their own current relationship status (McAndrew and Sun Jeong, 2012).

Although a causal relationship between mental health and Facebook use has not yet been established, it is suggested here that the latter be explored.

### **2.2. Social comparison theory**

This section discusses social comparison theory as a means to establish a context for the current study.

Individuals often compare themselves with others such as family members, friends and even celebrities, and through these comparisons a person may be influenced by others in various ways. According to the social comparison theory as set out by Festinger (1954), individuals are able to evaluate their own abilities, weaknesses and strengths through comparing themselves with others. According to Gibbons and Buunk (1999), individuals may also try to enhance their self-esteem and perceptions of themselves by comparing themselves with others. Consequently, they may feel positively or negatively about themselves. This behaviour extends to, and is influenced by, Facebook and other social media use, as outlined by the various studies which are discussed further.

Mussweiler et al. (2006) maintains that people tend to relate information about others' limitations and successes to themselves. Festinger (1954) theorised that individuals may compare themselves with others owing to their need to evaluate themselves and their abilities, particularly when there is no standard objective way in which to evaluate the self.

One of the aspects of research exploring social comparison behaviour focuses on why individuals compare themselves with others. According to this research, people may compare themselves with others to assess their own emotions and personality traits, and this may serve as a means to form opinions (Lee, 2014). In addition, comparison with others may allow individuals to enhance their self-esteem, and make informed decisions and judgements (Gibbons & Buunk, 1999; Mussweiler, 2006). It has also been found that individuals who engage in more self-reflection and who tend to be more aware of themselves around others are inclined to compare themselves with others more frequently. In addition, those who are interested in what others are feeling are more frequently inclined to engage in social comparison compared with those who may not be as concerned with what others are feeling (Gibbons and Buunk, 1999).

Another notable aspect of social comparison theory relates to the various emotional outcomes that result from social comparison. Focusing on the direction of comparison and the affective consequences that this may have, Buunk and Gibbons (2006) give the example that individuals who compare themselves with others more frequently, tend to have negative emotional responses based on comparing themselves with others they perceive as being 'worse off' than themselves. This is referred to as downward social comparison. However, a perception of upward comparison (being 'better off' than others) has yielded inconsistent results, as Buunk et. al (1990) established that individuals with high self-esteem were more inclined to feel positively from comparison with others, irrespective of whether the comparison was upward or downward. Other research has contended that downward comparison tends to enhance self-esteem, generate more positive affect and reduce feelings of depression. Upward comparison, on the other hand, tends to create negative emotional experiences, including feelings of depression (Lee, 2014). These views support the theory by Festinger (1954) which suggests that self-perceptions are partly based on how individuals are



doing compared with others, and more specifically that perceiving oneself unfavourably leads to negative self-perceptions, poor self-esteem and feelings of depression (Festinger, 1954; de Vries & Kühne, 2015). These theories place the present study in context, as they extend to social media use.

### **2.2.1. Studies reinforcing social comparison amongst young adults**

Several studies have explored the social comparison behaviour amongst adolescents and young adults, with many of these conducted to explore students' social comparison in their environments and also predominantly conducted to investigate why adolescents and young adults tend to engage in social comparison. The results of the studies indicated that adolescents and young adults use social comparison as a way to evaluate themselves, especially in relation to academic performance (e.g. Aboud, 1985 and Butler, 1998 as cited in Lee, 2014). Social comparison was also found to influence identity development and was more prominent in young adults than their younger counterparts. Comparisons between individuals was pronounced amongst close friends and those perceived to be from a similar socio-economic background (Lee, 2014).

Interestingly, it has been established that students, rather than adults, tend to engage more frequently in social comparison behaviour. This finding is based on the premise by Johnson & Knobloch-Westerwick (2014) that students are more susceptible to peer influence and that it is understandable for students to seek validation through social comparison. In addition, young adults, namely university students, are known to engage more frequently with social networking sites such as Facebook (Ellison, et al., 2007). Bearing the foregoing in mind, social comparison and the influence it has on social networking use are important to explore as they may affect an individual's sense of wellbeing and overall self-esteem, as I explore in the present research study. The next section focuses more specifically on social comparison in the context of Facebook use.

### **2.2.2. Social comparison based on Facebook use**

As previously discussed, younger adults are inclined to seek validation from others in various ways. Based on this approach, Chou and Edge (2012) state that social networking sites, such as Facebook, are infamous for giving viewers the impression that others are better off and that their lives are more fulfilling than theirs. According to Zhao, Grasmuck, & Martin (2008), since Facebook users tend to control how their online friends may perceive them (a theory known as impression management), it stands to reason that these users may choose to present themselves and their experiences in a positive or more glamorous manner, for example by sharing photos where they may look their best or when surrounded by big social groups (Zhao, et al., 2008).

The latter rationale is reinforced as, according to Pempek, Yermolayeva and Calvert (2009), a considerable amount of time spent on social networking sites involves users viewing glamourised photos, boastful status updates and profiles of their friends. As a result, the perceptions of how others are experiencing their lives may influence how users perceive themselves, because their self-perceptions are in part based on how well they appear to be doing in comparison with others (Festinger, 1954; Pempek et al., 2009).

It is understood that viewing others' social networking profiles on Facebook is amongst the most widespread activity on social networks (Pempek et al., 2009). Based on the stance that Facebook users mainly view others' profiles in a bid to compare themselves, the social information that users come across may influence their self-perceptions through social comparison (Festinger, 1954). This idea is further demonstrated by Johnson and Knobloch-Westerwick (2014), who established that viewing the Facebook profile of a person who is perceived as physically attractive or more successful can influence self-esteem in a negative way, and also influence how one views or perceives oneself. Furthermore, negative self-perceptions are known to predict depressive symptoms and low self-esteem, while a more

positive self-perception may foster higher self-esteem and is said to be related to improved subjective wellbeing (Sowislo & Orth, 2013).

Lee (2014) has demonstrated that the frequency of social comparison is related to the amount of time a person spends on Facebook. The study comprised 199 university students from Michigan State University where the result implied that a person who uses Facebook more regularly tends to compare themselves with others more frequently. The study explored the relationship between Facebook use and social comparison frequency and how the latter is related to commonly occurring negative feelings that result from comparisons made on Facebook (Lee, 2014). Evidence based on Lee's study indicates that amongst young adults, those who access Facebook regularly tend to engage more frequently in social comparison behaviour. Furthermore, this type of social comparison is essentially negative, as it has been associated with the sense that Facebook friends are 'better off' (Lee, 2014).

The concept that others are better off has been reinforced by Chou and Edge (2012), who published an article where they explored the potential impact of students' perception of others' lives when using Facebook. The study involved 425 university students and suggested that users who tend to regularly use Facebook are more likely to believe that their Facebook friends are having richer experiences or more exciting life experiences than they are (Chou & Edge, 2012). The results are not unexpected, given the idealised self-presentation that occurs on Facebook (Pempek et al., 2009). Consistent with social comparison theory, negative social comparison influences self-perception, more specifically where the viewer sees other people as doing better than themselves (Festinger, 1954). With Facebook users posts and photos often portraying them as more popular and physically attractive, negative social comparison may be expected to occur with Facebook use (Zhao et al., 2008).

In a study by Vogel, Rose, Roberts and Eckles (2014), their research indicated that negative self-perception as a result of social comparison was as a result of social networking

use. These negative self-perceptions more commonly occurred amongst young adults who tended to be more depressed, or presented with lower self-esteem. As a result, Facebook use may negatively affect wellbeing by intensifying negative social comparison. In addition, this effect would foster poor self-perception amongst young adults who may already present with low self-esteem or symptoms of depression. This dynamic ties in with previous research that suggests that social networking site activity can affect self-perceptions and wellbeing in both a positive or a negative way through various routes. The route that is stronger may depend on the individual user and the activities they engage with on the social networking site itself. For example, social interaction is said to have a positive effect by enhancing social capital, as positive feedback is more likely. On the other hand, looking at others' posts may have a negative effect on wellbeing through social comparison (Vogel et al., 2014). This explanation is therefore in line with social comparison theory (Festinger, 1954). In the next section, the focus is on aspects of social comparison, linking it to mood and personality.

### **2.2.3 The influence of social comparison on mood, self-esteem and personality**

According to Krizan and Bushman (2011) and Nicholls and Stukas (2011), individuals who tend to show narcissistic traits are often more inclined to engage in social comparison in both upward and downward social comparisons. In addition, Krizan and Bushman (2011) state that narcissists tend to engage more frequently in downward comparisons (i.e. comparing oneself to someone perceived to be inferior) as this appeared to elicit positive emotions and higher self-esteem for themselves. Narcissists were also more inclined to perceive themselves as being better off than other important persons in their lives, and viewed themselves as superior. Nicholls and Stukas (2011) were of the opinion that upward comparisons resulted among those with more narcissistic traits rejecting others who they perceive to be 'better than' than them (Lee, 2014; Nicholls & Stukas, 2011). This evidence is in keeping with the principles of social comparison theory as outlined by

Festinger (1954), and validates the sense that social comparison processes play a role in narcissists' pursuit for admiration and status (Krizan & Bushman, 2011).

Fuhr and Hautzinger (2015) explored the effects of social comparison processes on mood and self-esteem. Their study hypothesised that upward comparisons (i.e. perceiving that another person was performing better) would have a negative effect on mood and self-esteem, while downward comparisons would elicit the opposite effect. They concluded that negative affect was amplified during upward comparison, while positive affect was decreased, amongst their sample. In contrast, downward comparison resulted in subjects initially experiencing positive affect (Fuhr & Hautzinger, 2015). These results appear to corroborate the results of Appel, Crusius, and Gerlach (2015).

### **2.3. Classifying depression**

The present study hypothesises that depression may be an unexpected result of consistent Facebook use. To explore this hypothesis further, the concept of depression is now discussed.

According to Sadock & Sadock (2009), depressive symptoms are characterised when an individual experiences loneliness, feelings of despair and sadness, poor self-esteem as well as excessive feelings of guilt and self-criticism. Other symptoms may include impairment of vegetative functioning, which results in disturbances of sleeping and eating, in addition to isolation from social groups (Sadock & Sadock, 2009).

For the symptoms to qualify as a diagnosis, they need to result in clinically significant distress or impair the functioning of an individual socially, occupationally or in another important area of their life. In addition, the symptoms should not be a result of the direct physiological effects of a general medical condition (e.g. thyroid problems) or a substance (e.g. medication or drugs of abuse) (APA, 2013).

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As a result of embarking on an unfamiliar transition from the familiarity of high school to a new university environment, most first-year university students, which this study comprises, are believed to experience challenges in adjusting to unfamiliar support structures, access to health resources and general acclimatisation to their new university environment (Whitehill, Brockman, & Moreno, 2013). As stated by Youn et al. (2013), all of these unfamiliar changes may lead to symptoms of depression and low self-esteem, affecting students' academic performance and physical health, as well as substance misuse and maladaptive eating behaviour. According to Hunt and Eisenberg (2010), depression is amongst the most common health issues affecting university students today (as cited in Moreno et al., 2011; Whitehill, Brockman, & Moreno, 2013; Youn et al., 2013).

Research suggests that 25%–33% of students report that depressive symptoms hampered their ability to perform normal activities at least once in the past year, while 6%–10% reported having considered suicide over the same period (Whitehill et al., 2013). In the study by Whitehill et al. (2013), the authors intended to explore whether university students tended to reveal their feelings of depression using their Facebook status updates as a means to make this disclosure. The results suggested that Facebook profiles represent an opportunity to identify individuals experiencing depressive symptoms. In a similar study, Youn et al. (2013) screened their student participants for depressive symptoms using Facebook. They found that 26.7% of students who participated in their research study screened positive for having major depressive disorder, while 14.2% had received some form of treatment for depression.

A study by Smith, Muir and Blackwood (2004) examined the probability of depression in young adults and adolescents. The latter and similar studies bring to the fore the reality that this category, namely younger adults, are at risk of presenting with depression. This finding has a bearing on the present study, which focused on university students in the same category. According to Radloff (1991), the occurrence of depression amongst children

and adolescents has been well established, although there are possible differences in factors such as definition of rates and measurement of depression. (The latter study was based on the frequently used self-report scale assessing symptoms of depression, the Centre for Epidemiologic Studies Depression (CES-D) Scale, and was administered to a sample of high school and college students.)

A study by Van Voorhees, Fogel, Houston, Cooper, Wang and Ford (2005) examined beliefs and attitudes about depression and, more specifically, negative beliefs and attitudes about the treatment of depression and the likelihood that this could prevent some individuals, particularly young adults, from accepting a diagnosis of depression, influencing the treatment thereof. In the study by Van Voorhees et al., the aim was to examine the links between the severity of depressive symptoms, beliefs and attitudes about treatment, social norms and factors from the past that might influence whether a diagnosis of depression is accepted or not. The study established the existence and prevalence of depression in young people, and extended to determine beliefs related to this condition.

As the present study focuses on young adults who are consistent users of Facebook, the studies cited support particular hypotheses that the present study investigates. The research cited reinforces the notion that young adults need validation, and display symptoms of, among other things, depression. According to Stein et al. (2001), experiencing social anxiety disorder (SAD) may predict depressive disorder later on in life amongst adolescents and young adults. Several studies have determined or suggested that there is an association between social anxiety and the earlier onset of symptoms for major depression. For example, one study examined the association between early onset of anxiety and depression in young adults and adolescents in the context of family patterns of transmission in depressive high-risk families (Stein et al. 2001). The latter has bearing on the present study, which targets

mainly young adults (university students), and discusses an association between social networking and mental health, such as depression.

### **2.3.1. The association between depression and self-esteem**

In clinical practice, depression and self-esteem are often interlinked. However, a causal relationship does not necessarily exist between the two constructs, and there are controversies about how the classic and more contemporary models of depression differ. Several researchers have proposed that depression and self-esteem are in essence one construct, representing opposite poles of the same dimension. This view considers depression to be synonymous with low self-esteem. From this perspective, self-esteem may play a role in the aetiology of depressive symptoms. For example, according to the cognitive theory of depression, self-criticism and negative beliefs about the self may predispose the onset and maintenance of depressive symptoms in addition to being a symptom of depression. In contrast, low self-esteem is understood as a consequence of depression, rather than being seen to cause depression (Sowiso and Orth, 2013).

### **2.3.2. The association between depression and social networking activity**

In general, the research exploring the effect that social networking has on depressive symptoms has yielded mixed results. Kraut et al. (1998) is of the view that there is now extensive support indicating that excessive use of the internet, including e-mailing, viewing video clips and social network engagement, is related to depression. Various studies have shown that depressive symptoms are positively associated with social networking activity (Davila et al., 2012; Jelenchick, Eickhoff, & Moreno, 2013; Moreno et al., 2011; Pantic et al., 2012; Tandoc, Ferrucci, & Duffy, 2015), with one study linking a long-standing form of depression (persistent depressive disorder) with internet addiction (Rosen et al., 2013). In a study exploring the effect of general internet use amongst young adults, it was reported that



greater internet use predicted an increase in depressive symptoms over a period of one year (Kraut et al., 1998).

It has been established that the amount of time spent on the internet is not associated with clinical symptoms. Instead, 'depressive symptoms were associated with the quality of social networking interaction rather than the quantity' (Davila et al., 2012, p.72). In their study, Davila et al. (2012) explored the social networking behaviour of 334 undergraduate students and focused specifically on social networking engagement (instead of general internet activity) and the association with depressive symptoms. Their study established that interactions on social networking sites that are experienced as being negative were related to an increase in depressive symptoms. For example, the act of 'unfriending' (i.e. removing someone from a friends list) was shown to be strongly related to negative emotional responses. As young adults are dependent on the approval of others, as discussed in relation to social comparison theory, acts such as losing a Facebook friend (unfriending) could have a negative effect on mental wellbeing. On the whole, the study by Davila et al. (2012) reflected that the quality of time spent on social networking sites was not associated with depressive symptoms. This finding contradicts the study by Pantic et al. (2012) in Croatia, who reported that depressive symptoms were convincingly associated with the amount of time spent on Facebook by high school students (Pantic et al., 2012).

A new phenomenon termed 'Facebook depression' has been suggested by O'Keeffe and Clarke-Pearson (2011), and has been defined as a form of depression that develops when individuals spend a substantial period of time on Facebook, which results in the display of symptoms of depression. It has been suggested that those Facebook users who spent more time on the social networking site performing impression management (i.e. controlling how their online friends may perceive them), displayed more symptoms of major depression (Krämer & Winter, 2008; Mehdizadeh, 2010; Rosen et al., 2013). News reports have begun

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to document the occurrence of suicide notes in the form of Facebook status updates, which have led researchers to try to understand whether this may be related to underlying depressive symptomatology (Clerkin, Smith, & Hames, 2013; Whitehill et al., 2013). When threats of suicide appear on users' profiles, Facebook has now partnered with the National Suicide Lifeline (NSL) in the United States, which allows users who may notice Facebook content suggestive of suicide to report it directly to the NSL via a link on their Facebook page. In practice, this evidence may suggest that social networking profiles might allow the identification of those at risk of suicide, which may shed further light on individuals who experience depressive symptoms in general (Whitehill et al., 2013).

The study by Moreno et al. (2011) looked at disclosed references of depression on users' Facebook status updates, and not whether Facebook use was associated with feelings of depression. The intention of that study was to explore whether university students disclosed symptoms of depression on Facebook, with the aim of identifying those at risk of major depression. Findings from the study suggest that those who receive encouragement from their online friends were more inclined to discuss their depressive symptoms on Facebook. Based on the study, the recommendation has been put forward that social networking sites could provide an opportunity for debunking the myths and stigma related to mental health conditions which may allow the identification of users who may be at risk of depression through the frequent display of symptoms of depression on their Facebook profiles (Moreno et al., 2011). Facebook use, however, does not always lead to negative repercussions, as is discussed in the next paragraph.

While several studies, including those of Davila et al. (2012) and Kraut et al., (2002), have demonstrated that lengthy internet use and the quality of time spent on Facebook may be related to depressive symptoms, numerous studies have recognised the positive outcomes that internet use, and particularly social network engagement, could have on mental

wellbeing (Blease, 2015; Jelenchick et al., 2013; Junco, 2013; Selfhout et al., 2009). One study found that adolescents using the internet to maintain existing social connections (via social networking sites, instant messaging and online chat rooms) had a tendency to experience greater social connectedness with others, affecting their overall mental wellbeing. It is understood that social networking sites enable adolescents to achieve tasks that are important to them offline, on an online platform as well. These tasks include connecting with family and friends, making new friends, as well as sharing and exchanging pictures. Participation through social networking sites is also said to offer adolescents further benefits, extending to their view of themselves, their community and others, while also providing opportunities for socialisation, communication with a wider network, learning opportunities and access to healthcare information (O’Keeffe & Clarke-Pearson, 2011). Other studies also highlight that individuals experience a decrease in depressive symptoms and perceived feelings of loneliness owing to their engagement with social network connections. This reportedly increases self-esteem and individuals’ sense of social support (Ellison et al., 2007; Steinfield, Ellison, & Lampe, 2008).

In a study designed to examine the influence of symptoms of depression and anxiety on the frequency and quality of social networking experiences, data suggest that characteristic symptoms of depression do not result in changes regarding how frequently the internet is used, and specifically social networking sites. Studies are yet to explore whether the quality of online experiences is associated with symptoms of depression (Davila et al., 2012; Feinstein, Bhatia, Hershenberg, & Davila, 2012). In the next section, self-esteem is discussed in relation to the present study on the effects of Facebook use on mental wellbeing.

#### **2.4. Characteristics of self-esteem**

Self-esteem generally reflects one's judgement and evaluation of oneself; it is one's attitude toward the self. As this state of mind is subjective, it can arguably be affected by outside factors, such as the ability to attract friends. As a great deal of activity and interpersonal contact is currently online, the evaluation of oneself extends to social media and social networking sites.

According to Sadock and Sadock (2009), self-esteem can be understood as the extent to which individuals value their own sense of self-worth based on achievements, perceived failures and success, and the perception of how much one is valued by others in general, including family members and peers. The primary features of healthy self-esteem are often associated with a positive perception of physical appearance and high value in relationships with family and peers. Secondary features relate to specific talents, academic and/or work-related achievements, and athletic abilities (Sadock and Sadock, 2009). Individuals normally base their self-esteem on the perceptions and views of relatives and peers, and a perception of one's own view of a positive and aesthetically pleasing appearance. How much an individual is valued by society, employers, the community and peers is also an indicator of how the individual will view their sense of self.

Individuals possess a fundamental need to enhance and maintain their self-esteem through engaging in activities or with others. Accordingly, it is to be expected that individuals will endeavour to present themselves in idealised ways in face-to-face relationships and those shared online. Facebook and other social networking sites may have a part to play in how individuals present themselves online, as a means of managing their self-esteem. An expanding body of research has started exploring the influence that Facebook and other social networking sites play in potentially affecting temporary states of self-esteem (Wilson, et al., 2012). As social networking sites enable users to reveal details about

themselves, including personal reflections via status updates and photos, these sites could have the function of making users mindful of their own imperfections and deficits that would affect their self-esteem negatively. As a result, users may choose to represent themselves selectively, showing a positive bias to highlight aspects of themselves which may raise their self-esteem online, as this may present an opportunity to express themselves in an idealised way which in turn may raise their self-esteem (Krämer & Winter, 2008).

### **2.4.1 The association between self-esteem and social networking activity**

Overall, the literature exploring self-esteem and social networking involvement has generated mixed results. Certain studies have reported either a negative or positive relationship with various types of internet use, whereas some studies have reported no significant relationship at all between internet use and self-esteem. Considering individuals' fundamental human need to enhance self-esteem, engaging with peers and receiving feedback concerning the self becomes important for wellbeing and self-esteem. This function is now likely to occur during online communication or social networking engagement (Harman, Hansen, Cochran, & Lindsey, 2005).

In the study by Mehdizadeh (2010) who examined how self-esteem is manifested on Facebook, results suggested that Facebook activity has a significant negative association with self-esteem. Participants who in particular scored lower on the self-esteem scale (i.e. the Rosenberg Self-esteem Scale) revealed spending more time on Facebook per session and reported logging onto the social network more frequently. Similarly, Kalpidou, Costin, & Morris (2011) concluded that spending more time on Facebook is associated with low self-esteem when they correlated the minutes spent on Facebook with self-esteem. Their study established that students who spent a significant amount of time on Facebook were classified as having low self-esteem compared with other participants who spent less time on the social networking site (Kalpidou, Costin, & Morris, 2011). Contrary to these results, Krämer &

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Winter (2008) found that self-esteem was not associated with StudiVZ activity (a German social networking website similar to Facebook (Krämer & Winter, 2008; Mehdizadeh, 2010).

Self-esteem was not related to frequency of social network engagement or the number of online connections by users in a study that explored the type of reactions that users received to their online profiles on social networking sites. Valkenberg, Patti, Schouten, Alexander and Peter (2006) maintain that, instead, Facebook users who received more negative responses from their social network connections reported lower self-esteem, while those who received positive responses reported greater 'social self-esteem'. 'Social self-esteem' was measured by perceptions of one's physical appearance, romantic appeal and close relationships in relation to positive feedback received from Facebook friends (Valkenberg, Patti, Schouten, Alexander & Peter, 2006). The longitudinal study by Ellison et al. (2007) found that Facebook use resulted in an improvement in building social connections and, in particular, those participants who presented with low self-esteem described experiencing additional benefits from their social connections as a result of Facebook use. Building relationships with others and improving social connections has been especially related to greater measures of self-esteem, wellbeing and overall life satisfaction (Rosen et al., 2013). According to Harman, Hansen, Cochran, & Lindsey (2005), self-esteem and general wellbeing can be enhanced and nurtured when individuals receive feedback from peers and are involved with them, which is more expected via social networking activity. Facebook indicates a significant portion of such communication as outlined in various examples. One such example is that depressed Facebook users who are more inclined to have low self-esteem may post depressing status updates, whereas others may post more upbeat comments and status updates.

Social networking sites such as Facebook may provide an easier platform for users with low self-esteem to connect with individuals beyond their immediate social relationships,

and its use may facilitate communication. This factor may be particularly appealing to users with lower self-esteem, as they may be inclined to use the platform in initial social interactions to alleviate possible rejection by others, suggesting why those with low self-esteem seem to benefit more from their Facebook use in comparison with users with higher self-esteem. Persons with low self-esteem may experience more challenges in approaching people and, as a result, may not form social relationships that may be vital in enhancing social self-esteem (McAndrew & Jeong, 2012).

Amongst university students, levels of self-esteem were associated with involvement of various online behaviours (Tazghini & Siedlecki, 2013). For example, users with low self-esteem experienced a greater feeling of belonging and connectedness with their Facebook connections. Lower self-esteem was also linked with accepting friend requests from strangers and ‘untagging’ (i.e. removing a tag or link to photos and/or posts that the user or friends may publish on Facebook) oneself from posts. During a qualitative analysis with these participants, users who scored higher in self-esteem reported more positive aspects of Facebook use and highlighted activities such as being able to share photos, experiences and thoughts as positive (Tazghini & Siedlecki, 2013).

Tazghini and Siedlecki (2013) refer to the phenomenon of accumulating and displaying Facebook friends as a manner in which to measure social capital. This significant study observed that being able to display the number of Facebook friends on one’s page or profile enhanced self-esteem. A part of their study examined the relationship between self-esteem and Facebook use in a sample of college-age participants, similarly to the current study. Based on the findings of their study, Tazghini and Siedlecki (2013) found that there were indications that participants’ level of self-esteem was associated with various online behaviours, including feelings of connectedness to Facebook friends. A positive effect for users of Facebook with low self-esteem is the option of expanding their Facebook friend list,

thus increasing their social capital, visible to all their Facebook friends and, in some cases, to the online public (based on the individual's privacy settings). The activity of increasing one's Facebook friend list is posited to be a way to enhance self-esteem. Conversely, those with high self-esteem enjoyed the activity of sharing their thoughts, ideas and images with other users, which reinforces the positive effect of Facebook use, as opposed to reading posts that one might find annoying. With both the enjoyable and annoying activities and experiences, there is a connection to the reinforcement of wellbeing and mental health. The next section aims to show a connection between Facebook and self-esteem by discussing relevant studies.

### **2.4.2. Associations between self-esteem and Facebook**

According to Gonzales and Hancock (2011), viewing one's own Facebook profile reportedly enhances self-esteem through developing some self-awareness. The results of their study were based on 63 students who revealed that Facebook had a positive influence on self-esteem. Furthermore, the results demonstrated that self-esteem is enhanced by editing personal information about the self or selectively self-promoting. The study also concluded that participants who viewed their Facebook profiles were inclined to have higher self-esteem than that of a control group, most notably when they edited their personal profiles. Additionally, the study showed that viewing the Facebook profiles of others had no influence on self-esteem. The authors of the study concluded that Facebook pages tend to represent a more 'socially desirable representation,' allowing Facebook users to appraise a more 'refined' perception of themselves that would inevitably enhance their self-esteem. Essentially, producing and editing one's profile would enhance self-esteem because users can choose the type of information they share about themselves, generally presenting more positive experiences or successes that would enhance self-esteem (Gonzales & Hancock, 2011). In doing so, Facebook may allow users to compensate for low self-esteem by selecting



how they present themselves and what they share, which would then have a positive effect on their self-esteem (Ellison et al., 2007).

Facebook use was found to be beneficial for students' socialisation at universities and tended to produce better social learning outcomes. An overall improvement in self-esteem was associated with Facebook use, particularly in collectivist cultures, as shown by the study by Nadkarni and Hofmann (2012). In these instances, Facebook may function as a supportive network for individuals, where it has been hypothesised that those from collectivist cultures are more inclined to engage in friendships and form connections with friends on Facebook from whom they can rely on for support (Nadkarni & Hofmann, 2012; Vogel et al., 2014).

Facebook use is also said to improve users' self-esteem by increasing the users' sense of belonging. As Facebook allows users to visualise their social connections, this is said to enhance and validate users' self-esteem. This was evident amongst a group of university students in the USA, where the number of Facebook friends and positive self-presentation influenced users' subjective wellbeing and self-esteem in a study that explored the association between Facebook use and subjective wellbeing (Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013; Toseeb & Inkster, 2015).

The next section reviews narcissism, and its connection to Facebook use will be discussed, as illustrated in a variety of studies.

### **2.5. Classifying narcissism**

The term of narcissism was originally used in psychoanalysis to refer to a pathological state. In its broadest sense, narcissism describes having an interest or concern with the self across a broad continuum (Cooper, 1992). The latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM 5; American Psychiatric Association, 2013) specifies criteria for diagnosing narcissistic personality disorder. The DSM 5 classifies it as a disorder marked by a 'pervasive pattern of grandiosity, lack of empathy and need for

admiration, which starts by early adulthood and is present in a variety of contexts' (APA, 2013). Further diagnostic criteria include: fantasies of unlimited power or success; a sense of entitlement; feelings of their own specialty; arrogant in attitude and interpersonal exploitation (APA, 2013). Narcissists are often seen by others as being exhibitionistic, attention seeking and concerned about their own and/or others' physical appearance. Those with narcissistic traits often overvalue their attractiveness and put a significant amount of effort into being well-groomed and fashionable (Vazire & Gosling, 2004). Narcissists also tend to be experienced by others as being socially skilled and appearing confident in initiating relationships, although they may seek out relationships that could enhance their own status, resulting in favourable views of themselves (Gentile, Twenge, Freeman, & Campbell, 2012).

### **2.5.1 Narcissism as a personality trait**

As a personality trait, narcissism is healthy and normal in individuals possessing variable degrees of narcissism. Individuals with a typical degree of narcissism may appear similar to more pathological or clinical forms of the personality, although to a lesser degree. Typical narcissists may believe they are unique and special and may hold a relatively positive view of themselves, taking pride in their appearance. Pathological narcissism involves individuals who require the approval and attention of others, and who may seek out admiration from external sources as a means to maintain or enhance their self-esteem (Gentile et al., 2012). Social networking sites may as a result present as an ideal opportunity for narcissists to gratify their needs, as these platforms tend to enable superficial connections from numerous users, allowing one to believe that there are valuable interpersonal benefits.

Online relationships may appeal to narcissists who may typically prefer forming superficial relationships, rather than meaningful emotional investments required in real-life connections. In addition, another way for narcissists to uphold their exaggerated self-view is to show competitiveness and dominance in social conditions. In light of the latter, Facebook

may be a perfect vehicle to show their competitiveness in comparison to their online friends. This tendency may be evident in narcissists who claim a significant number of social networking friends, as this may uphold their grandiosity and also create a large online audience, providing a platform where they may exhibit their perceived strengths. They may also perceive gaining more social networking friends than others as a form of competitiveness with others (Bergman, Fearington, Davenport, & Bergman, 2011). The next section reviews differences and connections between self-esteem and narcissism.

### **2.5.2. The association between narcissism and self-esteem**

Self-esteem, which is understood as a general positive appraisal of the self, is often associated with narcissism. Individuals who present with higher narcissistic traits (i.e. grandiose narcissism) generally tend to report high levels of self-esteem. There are, however, a number of differences between self-esteem and narcissism. Individuals with high self-esteem have a tendency to evaluate themselves as superior when compared with other individuals across a number of traits, whereas those who present with narcissism tend to rate themselves as superior on particular traits only. For example, individuals with high self-esteem are more inclined to perceive their romantic partners in a positive light, while those with narcissistic traits perceive themselves as being better than their romantic partners. Individuals with high self-esteem and those narcissistic traits both tend to perceive themselves in a positive way; however, those with high self-esteem tend to show more positive regard towards others. In addition, narcissists tend to show little commitment to relationships and may continue searching for alternative partners, exploiting them for increasing their own self-esteem (Gentile et al., 2012).

The grandiose category of narcissism is often associated with high self-esteem and self-determined evaluation, compared with vulnerable narcissists who tend to present with low-esteem and are dependent on others when evaluating themselves (Rohmann, Neumann,

Herner and Bierhoff, 2012). By extension, Facebook users such as those discussed in the various studies in the present thesis, tend to exhibit both low and high self-esteem. By engaging in Facebook activity, they reinforce feelings of both types of narcissism. As the narcissist has a grandiose view of his or her own talents and craves admiration, it would be natural or almost automatic to be attracted to an outlet such as a social networking site, to find such gratification (Rohmann, Neumann, Herner, & Bierhoff, 2012).

### **2.5.3. Categories of narcissism**

The current section reviews the different categories of narcissism, followed by its link to social networking, which concludes the discussion on the topic. One of the significant perspectives used to understand narcissistic personalities has been the psychodynamic model. Psychologists Heinz Kohut (1966) and Otto Kernberg (1975; see Bosson et al., 2008 for a full review) developed the ‘mask model’. Regardless of these authors’ different views, both agree that the grandiosity as expressed by narcissists tends to serve as a mask that intends to conceal underlying feelings of insecurity and inferiority. The positive self-evaluations as portrayed by those with narcissistic personality traits are not thought to be an entirely accurate self-perception, but are instead viewed as a disguise or mask to conceal underlying feelings of low self-esteem. This model proposes that, at the core of narcissism, the self-concept appears grandiose, yet is experienced as extremely vulnerable (Marčinko et al., 2014).

This vulnerable self-concept is understood as a reason for why those with narcissistic traits seek feedback from their environment in order to gain affirmation, which may enhance their feelings of self-worth. Social networking platforms where users may post status updates or photos with the underlying motive of receiving feedback via likes or comments, may in turn be used as a source of feedback to fuel a sense of self-worth. Being rejected socially and

experiencing feelings of failure leads narcissists to feel vulnerable, threatening their self-esteem and self-worth (Zeigler-Hill & Besser, 2013).

Another researcher who also recognised the variations related to narcissistic personality disorder was the personality researcher Paul Wink (as cited in Tritt, Ryder, Ring, & Pincus, 2010). Wink (1991) concluded with evidence to validate the dual nature of narcissism by identifying two aspects that underlie narcissism. These dimensions were labelled 'grandiosity-exhibitionism' (grandiose or overt narcissism) and 'vulnerability-sensitivity' (vulnerable or covert narcissism). The more overt or grandiose form of narcissism possesses a stronger need to maintain an exaggerated self-image that tends to be more exhibitionistic, requiring affirmation from others to increase feelings of self-worth. In contrast, vulnerable narcissists tend to vacillate between feeling superior and inferior, possessing grandiose fantasies while presenting with a fragile sense of self-worth. According to Rohmann et al. (2012), vulnerable narcissists tend to resemble the clinical presentation of narcissism. Marčinko et al. (2014) propose that vulnerable narcissists tend to exhibit stronger traits related to dependency, neuroticism, perfectionism and low self-esteem. Vulnerable narcissists are more likely to be associated with depressive traits or severe depression, compared to the more grandiose form. They are particularly susceptible to depressive symptoms as a result of their self-worth being reliant on affirmation from their social environment. As a result, their true self is habitually disregarded for a more favourable image that they have to defend and uphold (Anastasopoulos, 2007).

#### **2.5.4. The association between narcissism and social networking activity**

Since narcissists are known to manage themselves well in the context of more superficial relationships (as opposed to more meaningful and committed relationships), social networking platforms may provide them with the kind of arena they desire in order to self-regulate via their friend networks, photos and posts. Considering that these sites enable more

shallow connections with others and encourage brief spurts of communication (i.e. via wall posts, status comments and likes), those with narcissistic traits may be more inclined to use social networking sites more frequently. Although some users do use these platforms to maintain deeper social connections as well, often the real attraction is enabling users to maintain as many relationships as they want (e.g. many users have hundreds or thousands of connections). According to Vazire & Gosling (2004), social networking sites are seen as highly controlled environments, allowing users to have complete control over how they present themselves to their connections, unlike real social settings. As narcissists are known to be boastful and motivated to talk about themselves, they may be particularly drawn to the fact that they can use personal social networks or profiles to select more appealing photos of themselves or share status updates or descriptions that tend to be more self-promoting. This bias allows the person to have full control of how they present themselves on the online platform (Cooper, 1992). Social interactions via social networking may be engaged with for the intention of seeking validation for grandiose self-views by posting content that is self-promoting. Instead of social approval being their primary focus, narcissists may choose to be admired by others via their posts (Morf and Rhodewalt, 2001 as cited by Collins & Stukas, 2008).

As social media use increases, scientific research and popular media appear to have gained momentum in exploring the association between narcissism and social networking activity. In separate studies, Buffardi & Campbell (2008) and Mehdizadeh (2010) hypothesised that there would be a positive association between social network users who scored high on the Narcissism Personality Inventory (NPI-16), the amount of time they spent on Facebook per session, and the number of times Facebook was checked per day. The studies' results supported this hypothesis in part, concluding that there was a significant positive correlation between self-promoting content and high scores on the NPI-16. Self-

promoting content was especially evident on participants' main profile photo, status updates and notes sections on their Facebook profiles. Buffardi & Campbell (2008) also found that Facebook judgements of narcissism were based on the number of social interactions and self-promoting content on profile pictures (Buffardi & Campbell, 2008; Nathan DeWall, Buffardi, Bonser, & Keith Campbell, 2011).

Twenge and Campbell (2009) found that university students today tend to score significantly higher on the NPI-16 than their cohorts 20 years ago. It has been posited that narcissism may be increasing owing to changes in generational values. It has also been theorised that younger generations, such as the 'net generation' born in the 1980s, and the 'iGeneration' born in the 1990s, tend to have more of a need to account for their daily activities on social networking platforms with the belief that their social networking connections care about them (Rosen et al., 2013). These qualify as symptoms central to the diagnostic criteria of narcissistic personality disorder, namely a grandiose sense of self-importance and the need to be admired by others (APA, 2013). Other studies have gone on to suggest that narcissism may be encouraged and even exacerbated by social networking sites because they promote users to update their statuses, share photos and comment on others' posts and photos (Buffardi & Campbell, 2008; Naaman, Boase, & Lai, 2010; Nathan DeWall et al., 2011; Rosen et al., 2013). Ryan and Xenos (2011), as cited in Jenkins-guarnieri, Wright, & Hudiburgh (2012) and Rosen et al. (2013) concluded that users who checked their Facebook more frequently and spent more time on Facebook presented with higher narcissism scores. Naaman et al. (2010) also concluded that 80% of their participants who used Twitter, posted about their thoughts, feelings and accomplishments, calling them 'meformers', in comparison with 20% of users who shared information about others, labelled as 'informers'.

Buffardi & Campbell (2008) also noted that those who scored high on the NPI-16 had a tendency to have profile pictures that were rated by others as more physically attractive, and had the tendency to be more self-promoting when compared with the profile pictures of those who scored low on the NPI-16. Those with high scores on the NPI-16 also appeared to have more Facebook connections and wall posts on their personal profiles. These trends have led researchers to speculate that narcissists may be selecting photos of themselves that are more attractive in order to encourage and maintain inflated beliefs about themselves. When narcissism and extraversion were explored in relation to reasons why users utilise Facebook, research has suggested that narcissists tend to enjoy the attention they receive from social networking connections. This observation confirms that narcissists used Facebook to occupy time, have romantic interests and engage in leisure activities compared with participants who were more extraverted (Ong et al., 2011).

### **2.6. Conclusion**

In general, the studies discussed in this literature review highlight the contradictory evidence in exploring whether Facebook use may be linked to symptoms of psychopathology and self-esteem. Particular studies have suggested that Facebook use has a negative effect on depressive symptoms, self-esteem and narcissistic traits, whilst others studies have suggested that Facebook use may have a positive effect on mental health and overall wellbeing. For example, Davila et al. (2012); Jelenchick, Eickhoff, & Moreno (2013); Moreno et al. (2011); Pantic et al. (2012); and Tandoc, Ferrucci, & Duffy (2015) have shown that social networking activity is associated with depressive symptoms, whilst Blease (2015); Jelenchick et al. (2013); Junco, (2013); Selfhout, Branje, Delsing, ter Bogt, & Meeus (2009) suggest that social networking engagement may have a positive effect on mental health.

The current chapter has explored the different aspects of mental wellbeing that frequent social networking may have an influence on, including social comparison theory. It



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has also illustrated how potentially vulnerable the target group, students or young adults, are to peer influence via internet communication and, more specifically, Facebook.

The literature review has indicated that the contradictory evidence from previous research findings emphasises the need for this present research study to explore whether there is a potential relationship between social networking and mental health amongst a population of South African university students' presentation of mental health symptoms.

## **Chapter 3**

### **Method**

The methodology on which the present study is based is discussed in this chapter. The rationale which forms the foundation of the study, as well as the research design, the sample that was worked with, measures, procedures, data analysis and ethical considerations are outlined.

#### **3.1 Rationale**

By replicating some of the same methods used by Mehdizadeh (2010) in her study, the present study examined the relationship between the various psychological constructs and Facebook activity, namely how Facebook use affected the study participants. This aim formed the basis of the rationale for the present study. To achieve the latter, the Rosenberg Self-esteem Scale (RSES) and Narcissism Personality Inventory (NPI-16) were used to explore how they may be associated with Facebook activity. The scales are discussed in detail further in the current chapter.

During the literature review, I found that most studies on the topic of Facebook activity and its relation to psychological constructs, such as depression and the effect of activity on self-esteem, used participants from the USA, Europe and Asia. The review of previous research revealed that there are no known studies conducted about the impact of social media on emotion and, more specifically, mental health within a South African context.

The present study addresses this gap. Based on the considerable number of South African internet users who also use Facebook, it appeared logical to explore whether mental health symptoms are influenced by Facebook use or, conversely, whether Facebook influences mental health symptoms in any way.

The objective was to explore the following hypotheses:

H1: Amount of Facebook activity will correlate with depression scores (as measured by the BDI-II and CES-D).

H2: Amount of Facebook activity will correlate with self-esteem scores (as measured by the RSES).

H3: Amount of Facebook activity will correlate with narcissism scores (as measured by the NPI-16).

As the intention was not to replicate the study by Mehdizadeh (2010) completely, a constructive replication was therefore adopted. In relation to the study by Mehdizadeh (2010), the present study sought to investigate two of the same hypotheses in addition to investigating depression, thus adding the latter construct to the research. The present study took into account the fact that, given that all the predictor variables (i.e. depression, self-esteem and narcissism) can be correlated, and that the literature relating to Facebook activity and mental health is often conflicting, it seemed likely that the relationship between mental health and Facebook behaviour is more complex than suggested by simple bivariate relations. In the next section, the design of the study is discussed.

### **3.2. Study design**

The present study adopted a quantitative approach to conduct the research, in order to yield more objective results in assessing the psychological constructs that may be representative of a large population, allowing for a trend in the data to be established. Data were collected in numerical form and subjected to statistical analysis to determine the implications of the findings, directly replicating the methods used by Mehdizadeh (2010). For the constructive replication, an additional variable (i.e. depression) was measured. This part of the correlational design aimed to establish the independent effects of the three predictor variables (Babbie & Mouton, 2008; Terre Blanche et al., 2010).

The study aimed to expand on the research conducted by Swanepoel (2012) entitled ‘Young adults’ sexual strategies and mating displays in the virtual world: an evolutionary perspective’ and therefore formed part of a larger study.

To ensure that effective tools were applied, established questionnaires were utilised. Participants were required to complete a number of questionnaires, namely the BDI-II, CES-D, RSES and NPI-16. Participants gave permission to the researcher to view their Facebook pages in their presence. During the viewing, specific information was coded to utilise in the study. Once consistency and reliability was achieved in relation to the specific variables, coded data from participants’ Facebook profiles were correlated with the variables measured by the questionnaires.

It was expected that individuals lower in self-esteem and higher in narcissism would spend more time on Facebook, uploading their Facebook profiles with more self-promoting content, as reflected in previous research (Buffardi & Campbell, 2008; Mehdizadeh, 2010). It was also predicted that the more time spent on Facebook, the more there would be increased feelings of depression (Rosen et al., 2013). Chapter 4 (Results) presents the outcome of this prediction.

### **3.3. Sample**

It was the intention of the present study to achieve an effective sample size of 100 participants by gathering data from 120 participants, on the assumption that there would be missing data. In total, 336 participants, all students from the University of Cape Town (UCT) completed the various questionnaires. A sample of 100 student participants were selected to meet with members of the research team to manually code specific information from their Facebook profiles. All participants were required to take part in some form of psychological research through the Student Research Participation Programme (SRPP) for DP purposes, as part of their qualification (SRPP can be accessed via <https://vula.uct.ac.za/portal>).

The intended sample size was determined, based on that of the studies being replicated, and within the range of what would be feasible, given the time constraints of the present research project. It was anticipated that this sample, drawing from a range of university students, would provide a variety of participants who were diverse in gender, race and age, providing adequate statistical strength.

For the purpose of the research, convenience sampling was used (Terre Blanche, et al., 2010). The sample of UCT students who participated in the study were contacted via email through the SRPP site on the UCT Vula system.

### **3.3.1. Inclusion criteria**

Based on the selection criteria, participants had to be between the ages of 18 and 24 years old, an undergraduate UCT student and user of social networking site Facebook. Participants were required to complete the questionnaires in English.

### **3.3.2 Exclusion criteria**

Students who did not have Facebook accounts and those who participated in the research study conducted in 2012, which explored ‘Young adults’ sexual strategies and mating displays in the virtual world: an evolutionary perspective’ by Swanepoel (2012) were excluded from participating in this research.

### **3.4. Data collection**

Data were collected by means of several questionnaires for this specific study, which included the following:

- Beck Depression Scale (BDI-II)
- Centre for Epidemiologic Studies Depression Scale (CES-D)
- Rosenberg Self-esteem Scale (RSES)
- Narcissism Personality Inventory (NPI-16).

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The first questionnaire required participants to complete their demographic information (e.g., age and gender) coupled with the second questionnaire which addressed their Facebook activity and security setting. The latter questionnaire required respondents to indicate the number of times they checked their Facebook page per day, the time spent on Facebook per session, and the type of security settings for their profiles. The remaining questionnaires assessed the psychological constructs of depression, narcissism and self-esteem, using existing scales, as elaborated on below.

The BDI-II is a self-report rating inventory consisting of 21 items, which measures symptoms and characteristic attitudes of depression. A four-point scale which ranges from 0 (symptom not present) to 3 (symptom very intense) measures constructs items such as mood, appetite and fatigue (Beck, 1961). The BDI-II demonstrates high internal consistency for psychiatric and non-psychiatric populations respectively. Completing the BDI-II questionnaire takes approximately 10 minutes. Internal consistency from various studies range from 0.73 to 0.92 with a mean of 0.86. (Beck et al., 1996).

The CES-D is a brief self-reporting scale designed to assess for depressive symptoms amongst the general population. It was important to use this scale for the present research as the scale is a useful tool for epidemiologic studies of depression, with more importance placed on the affective components of depression. The questionnaire takes approximately 5 minutes to complete. Internal consistency using coefficient alpha ( $\alpha$ ) has been estimated to be 0.85 for the general population (healthy) and 0.90 in patient samples (Radloff, 1977). It is further considered reliable and valid amongst African American, Asian American, French, Greek, and Hispanic populations (Radloff, 1977).

To measure self-esteem, the RSES was used. This scale consists of 10 items which measure self-esteem using a 4-point Likert scale, ranging from 'strongly disagree' to 'strongly agree'. The original reliability of this scale is 0.72. Adequate internal consistency,

test-retest reliability, as well as convergent and discriminating validity, have been reported (Rosenberg, 1989; Krämer & Winter, 2008).

The NPI-16 was used to assess participants' narcissistic traits. This version of the scale is a shorter version of the NPI-40. The 40-item measure revealed an  $\alpha = 0.84$ , while the NPI-16 has an  $\alpha = 0.72$ . In spite of the discrepancy, both measures are correlated at  $r = 0.90$  ( $p < 0.001$ ). This personality questionnaire is recorded as having significant face, internal, discriminant and predictive validity. Examples of items on this inventory are: 'I don't mind following orders.' versus 'I like having authority over people.' Participants who score higher on the NPI are indicative of having more narcissistic personality traits. In general, the NPI-16 offers a reliable and valid method of assessing different aspects of narcissism over a brief period of time (Ames, Rose & Anderson, 2006) and was therefore a good tool to use for the present research.

### **3.5. Procedure**

Participants, being UCT students belonging to the SRPP, were selected on the basis of whether or not they had an active Facebook account. The latter were asked to participate in a study exploring their use of Facebook. Once participants agreed to partake in the present research study, they were given an electronic consent form, in which they agreed (or disagreed) to participate in the first phase of the study. Following consent, participants were electronically administered the 10-part questionnaire (demographic information, Facebook activity, BDI, CES-D, RSES, and the NPI-16). The first phase comprised the completion of all survey questionnaires, delivered via the online survey software, Survey Monkey. The second phase of the study required that participants meet with a member of the research team and, to ensure confidentiality, have specific information from their Facebook page coded. The coded information included:

- total number of Facebook friends

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- gender ratio of these friends i.e. males to females
- number of Facebook statuses posted in the last two weeks
- number of comments or likes related to these statuses and their gender
- number of profile pictures they updated within the last two weeks
- whether or not they received any unsolicited wall posts from friends within the last two weeks.

In addition, certain information was extracted from their Facebook pages of the second-phase participants, using the open-source software NodeXL. Here it should be noted that these extracted data were not used as part of this specific study, and were intended for use as part of the larger study. Participants were assured that all identifying information, results from psychological construct scales, coded data as well as extracted data from NodeXL were kept confidential (Smith, et al., 2010).

It was intended that numerous features of participants' Facebook pages would be coded on the basis of the degree to which they were observed as being self-promoting, as the latter was relevant to this research and the hypotheses. These features included information in the About Me section, the Profile and Cover Photo and the Status Updates section. Each category would have been rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (very much). The procedure was not without challenges, which included time constraints as well as technical difficulties when meeting with participants. This information could not be obtained or coded. All correct procedures were observed in terms of ethics and, bearing this in mind, data gathered from the various questionnaires coded during phase two of the study have been kept electronically and have only been made accessible to the research team involved in the study.



### **3.6. Data analysis**

All data analyses were performed using the statistical software packages SPSS (version 21). Unless otherwise specified, the threshold for statistical significance was set at  $p < 0.05$ .

The data were analysed across a number of steps. Firstly, descriptive statistics for demographic variables were explored (i.e. age, sex and race), then participants' scores on the psychological constructs were explored (BDI-II, CES-D, RSES, NPI-16), to gain an overall impression of the sample and a basic understanding of how participants scored on the various psychological constructs. To measure participants' Facebook activity, their time spent, number of times that Facebook was checked daily, and method of access to Facebook were coded.

Using Pearson correlations, participants' scores on the psychological constructs were correlated with their Facebook activity, as measured by their time spent, number of times they checked Facebook, and their method of access. The latter tested the hypothesis that was being replicated from Mehdizadeh (2010) i.e. H2: Amount of Facebook activity will correlate with self-esteem scores (as measured by the RSES) and H3: Amount of Facebook activity will correlate with narcissism scores (as measured by the NPI-16).

*T*-tests were conducted to establish the association involving participants' gender and their scores on the various psychological constructs. Similarly, univariate analyses of variance were performed to establish whether there were differences according to participants' race on how they scored on the specific psychological scales. In the next section, ethics in relation to the present research study are discussed in more detail.

### **3.7. Ethical considerations**

Consent was gained from all participants in the following manner:

- before completion of the questionnaires; and

- before participants agreed to having their Facebook page analysed and information extracted as per phase 2 of the study.

In addition, all participants signed a consent form and were informed about the overall goal of the research so that they were not misled in any way. Participants were informed that they had the option to withdraw from the research at any time if they felt uncomfortable, and that participation was voluntary.

The issues of anonymity and privacy were addressed by ensuring that all identifying information was kept confidential. As a measure of safety and to minimise any risk of harm to the participants, debriefing was offered to those who might find it necessary. They were also given a list of mental healthcare resources to consult, in the event that they felt the need to explore any issues or concerns further (de Vos, 2002).

As outlined by de Vos (2002), the final results will be made available to interested participants, in keeping with their right to access information.

### **3.8. Conclusion**

This chapter provides an overview of the study's methodology. Clarification in relation to the study's design and procedures, as well as the substantiated use of certain measures, are discussed. The process of identifying and contacting the desired sample populations is explained. A description of the data analysis is provided. Finally, ethical issues are clarified by confirming that the correct procedures were followed as required, and that all participants' anonymity was ensured.

Chapter 4 focuses on reporting the results and data generated from the various questionnaires.

## **Chapter 4**

### **Results**

Based on a quantitative approach, the current chapter provides a detailed and descriptive analysis of the data, being the results of the Pearson correlations tests of the stated hypotheses H1, H2 and H3. As stated previously, the survey was based on social media activity, namely Facebook activity, and the sample consisted of university students who were conversant with social media and who were all active on Facebook.

#### **4.1. Participant characteristics**

A final sample of participants (i.e. those who contributed towards the survey phase of the study) consisted of 336 participants, of whom 273 were female and 63 male undergraduate students.

In terms of the second phase of the study, namely those who met with a member of the research team to have their Facebook information coded, there were 100 participants, of whom 78 were female and 22 male. The 100 individuals were between the ages of 18 and 24 years (mean 19.90, standard deviation (SD) 1.36). It was the intention to obtain a racially diverse sample, and therefore participants' racial classifications were recorded. The results of this classification were as follows: of the 336 participants; 61.3% were classified as white, 18.2% as coloured, 13.1% black, 3.3% Indian, 2.7% Asian and 1.5% as other.

#### **4.2. Facebook access method and Facebook activity**

To determine the degree of Facebook activity, and the frequency of access to Facebook, participants were required to indicate the number of times per day they checked their Facebook page, and the amount of time that they spent on Facebook per day. The results follow below.

Based on their indications, the average number of sessions per day that participants checked their Facebook pages were 5.06 (mean 5.06, SD 5.20). For the most part, participants

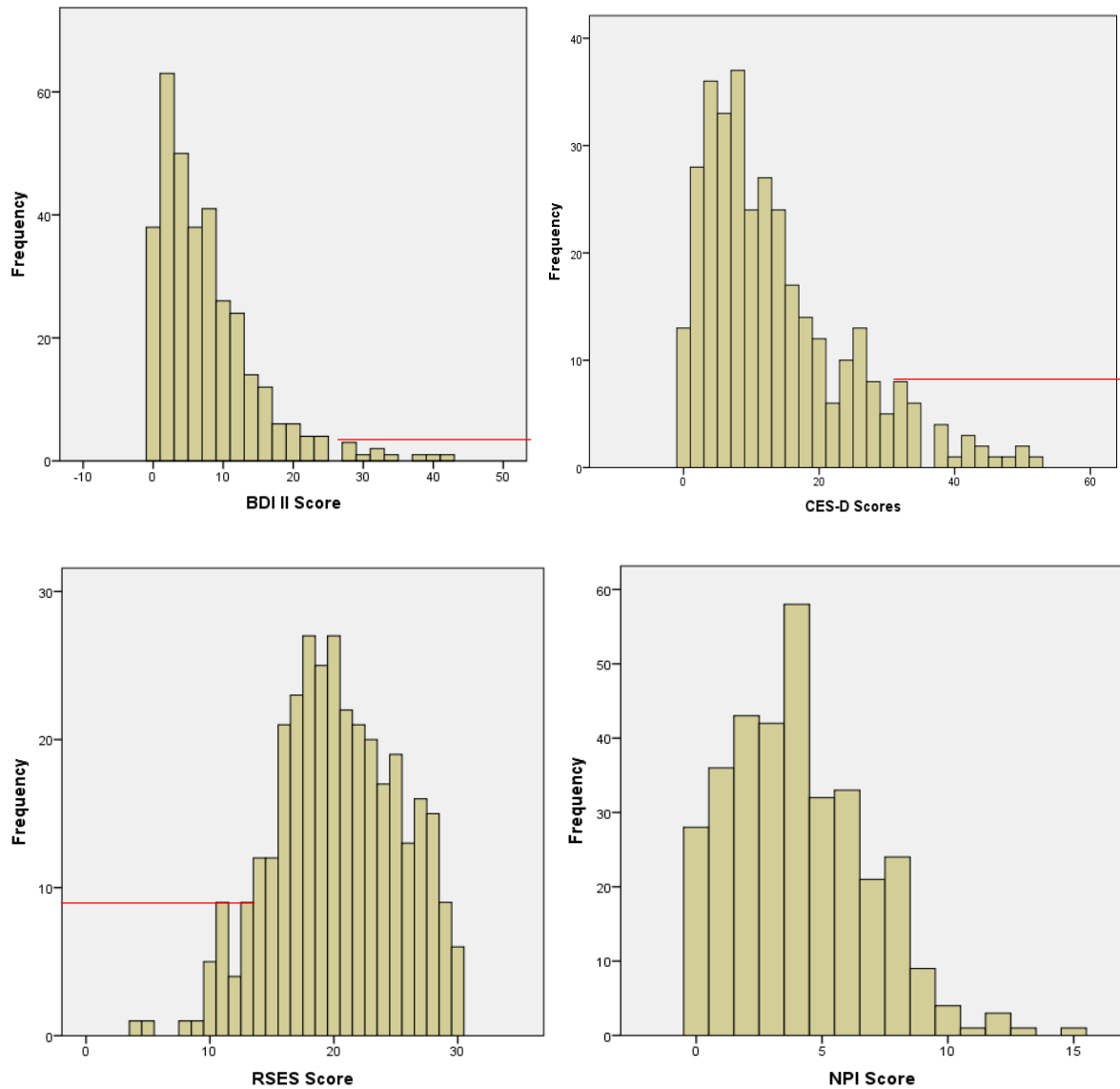
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checked their Facebook pages once, thrice or five times per day. Overall, the greatest number of participants (i.e. 56%) utilised Facebook between 1 and 30 minutes per day (mean 3.03, SD 2.32), and the second greatest between 46 and 60 minutes per day (i.e. 19.6% of participants).

Most (47.6%) participants in the sample indicated that they utilised both smartphones and laptops/computers as tools to access Facebook; 19.3% of the sample used only smartphones; and 16.4% used a laptop/computer only. Fewer (13.4%) participants used all three devices (i.e. smartphone, laptop/computer and tablet) whilst a minimal percentage (3.3%) used tablets.

### 4.3. Psychological constructs

**Figure 1: Distribution of the scores of the four scales.**



**Table 1: Summary of the scores of the four scales.**

	BDI-II score	CES-D score	NPI-16 score	RSES score
Mean	7.14	13.12	4.09	20.28
Standard deviation	7.112	10.760	2.749	5.075
Range	42	51	15	26
Minimum	0	0	0	4
Maximum	42	51	15	30
Skewness	1.820	1.165	0.653	-0.185
Kurtosis	4.465	1.003	0.389	-0.332

#### **4.3.1. BDI-II scores**

In terms of psychological constructs, participants' scores on the BDI-II in the range of 0–13 indicate little to no depression, while scores within the range 14–19 are indicative of mild depression, 20–28 suggest moderate depression, and scores of 29–63 suggest severe depression. The majority of the sample scored within the range 0–13, indicating little to no depression (mean 7.14, SD 7.11). According to their scores on this scale, 7 participants would be classified as suffering from severe depression. The BDI-II has shown to be a reliable measure, with Cronbach's alpha at 0.903.

#### **4.3.2. CES-D scores**

In terms of the CES-D, scores in the range of 16–26 are considered to indicate mild symptoms of depression, and scores  $\geq 27$  are said to be indicative of major depression. Similarly, as seen with the BDI-II scores, most participants scored  $< 16$ , indicating little to no depression. A mean of 13.12 (SD 10.76) was measured. Forty-two participants scored within a range that indicated major depression. This scale has good internal reliability with Cronbach's alpha at 0.918.

#### **4.3.3. RSES scores**

Participants who scored between 15 and 25 on the RSES are said to demonstrate self-esteem within the normal range, while low self-esteem scores are indicated by participants who scored  $< 15$ . Scores from participants in this study ranged from a maximum of 30 to a minimum of 4 (mean 20.28, SD 5.075). Most participants appeared to have scored within the normal range, while 43 participants presented with low self-esteem. The RSES has also shown to be a reliable measure, with Cronbach's alpha being 0.870 in the current sample.

#### **4.3.4. NPI-16 scores**

A score between 12 and 15 on the NPI-16 reveals a narcissism score within the average range. Scores  $> 20$  are indicative of clinical narcissism (Ames, Rose & Anderson, 2006). None of the participants in the present study scored  $> 15$ , revealing low narcissism

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(mean 4.09, SD 2.749). The reliability of the NPI-16 may be classified in the borderline range, with Cronbach's alpha at 0.654.

#### 4.4. Bivariate correlations

**Table 2: Correlations matrix.**

		Frequency	Time spent	Access method	BDI-II score	NPI-16 score	CESD score	RSES score
Frequency	Pearson correlation	1	0.343**	0.069	0.102	0.033	0.117*	-0.074
	Sig. (2-tailed)		0.000	0.205	0.063	0.546	0.031	0.174
	<i>N</i>	336	336	336	336	336	336	336
Time spent	Pearson correlation	0.343**	1	0.057	0.041	-0.006	0.026	-0.025
	Sig. (2-tailed)	0.000		0.299	0.457	0.919	0.632	0.654
	<i>N</i>	336	336	336	336	336	336	336
Method	Pearson correlation	0.069	0.057	1	0.099	0.016	0.072	-0.003
	Sig. (2-tailed)	0.205	0.299		0.070	0.772	0.188	0.952
	<i>N</i>	336	336	336	336	336	336	336
BDI-II score	Pearson correlation	0.102	0.041	0.099	1	0.068	0.839**	-0.665**
	Sig. (2-tailed)	0.063	0.457	0.070		0.214	0.000	0.000
	<i>N</i>	336	336	336	336	336	336	336
NPI-16 score	Pearson correlation	0.033	-0.006	0.016	0.068	1	-0.001	0.210**
	Sig. (2-tailed)	0.546	0.919	0.772	0.214		0.985	0.000
	<i>N</i>	336	336	336	336	336	336	336
CESD score	Pearson correlation	0.117*	0.026	0.072	0.839**	-0.001	1	-0.694**
	Sig. (2-tailed)	0.031	0.632	0.188	0.000	0.985		0.000
	<i>N</i>	336	336	336	336	336	336	336
RSES score	Pearson correlation	-0.074	-0.025	-0.003	-0.665*	0.210**	-0.694**	1
	Sig. (2-tailed)	0.174	0.654	0.952	0.000	0.000	0.000	
	<i>N</i>	336	336	336	336	336	336	336

\*Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).

As noted earlier, one of the major aims of the present research study was to explore the relationship between the various psychological constructs and participants' Facebook activity. A series of Pearson correlations (*r* tests) addressed the relationship between the psychological constructs of depression, narcissism and self-esteem, and Facebook activity, measured by:

- the amount of time spent on Facebook



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- frequency of access
- the method of access.

More precisely, and as stated at the beginning of the current chapter, the following hypotheses were tested, with scores based on the individuals in relation to:

H1: Amount of Facebook activity will correlate with depression scores (as measured by the BDI-II and CES-D)

H2: Amount of Facebook activity will correlate with self-esteem scores (as measured by the RSES)

H3: Amount of Facebook activity will correlate with narcissism scores (as measured by the NPI-16).

It was expected that there would be correlations between the scales used to measure the psychological constructs. For example, the self-esteem and depression scales would have a negative correlation and, conversely, the self-esteem and narcissism scale would have a positive correlation.

In testing these correlations, it was observed that scores based on self-esteem were significantly negatively correlated with scores based on depression, as measured by the BDI-II ( $r = -0.665, p < 0.01$ ) and CES-D ( $r = -0.694, p < 0.01$ ). In correlating self-esteem and narcissism, a positive correlation was observed, namely  $r = 0.210, p < 0.01$ . Similarly, a significant positive correlation was observed between the BDI-II and CES-D depression scales ( $r = 0.839, p < 0.01$ ). As assumed, the results indicated that a positive correlation exists between the time spent on Facebook and the frequency with which it is accessed ( $r = 0.343, p < 0.01$ ).

In respect of the correlation between the NPI-16 and time spent on Facebook ( $r = -0.006, p < 0.919$ ), a weak negative correlation was apparent. Positive although insignificant relationships were observed between NPI-16 scores and frequency ( $r = 0.033, p < 0.546$ ) as

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well as NPI-16 scores and access method ( $r = 0.016, p < 0.772$ ). In this instance, the null hypothesis was accepted and the two-tailed research hypothesis was not supported.

Overall, negative and insignificant correlations were observed regarding the RSES and time spent on Facebook ( $r = -0.025, p < 0.654$ ), RSES and frequency of Facebook access ( $r = -0.074, p < 0.174$ ) and RSES and access method ( $r = -0.003, p < 0.952$ ).

When looking specifically at the correlation between the BDI-II and time spent ( $r = 0.041, p < 0.457$ ), frequency of Facebook being checked ( $r = 0.102, p < 0.063$ ) and the method of access ( $r = 0.099, p < 0.70$ ), it was clear that there were not very strong positive relationships.

Similarly, when considering the correlation between the CES-D and time spent ( $r = 0.026, p < 0.632$ ) as well as CES-D and access method ( $r = 0.072, p < 0.188$ ), no noteworthy relationships were apparent. In contrast, higher scores on the CES-D were positively correlated with the frequency with which Facebook was accessed ( $r = 0.117, p < 0.05$ ).

In exploring the correlation between participants' ages and their scores on the various psychological constructs, no significant correlations were observed, namely for the BDI-II:  $r = -0.054, p < 0.01$ ; for the CES-D:  $r = -0.050, p < 0.01$ ; for the RSES:  $r = -0.022, p < 0.01$ ; and for the NPI-16:  $r = 0.102, p < 0.01$ .

**Table 3: T-test gender and score on psychological constructs: Independent samples test.**

		Levene's test for equality of variances		T-test for equality of means						
		F	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean difference	Std error difference	95% confidence interval of the difference	
									Lower	Upper
NPI score	Equal variances assumed	2.650	0.104	4.086	334	0.000	1.535	0.376	0.796	2.274
	Equal variances not assumed			3.633	82.690	0.000	1.535	0.422	0.694	2.375
RSES score	Equal variances assumed	0.215	0.643	0.313	334	0.755	0.222	0.710	-1.175	1.619
	Equal variances not assumed			0.316	93.697	0.753	0.222	0.704	-1.176	1.620
BDI score	Equal variances assumed	0.100	0.752	-0.212	334	0.832	-0.211	0.996	-2.170	1.747
	Equal variances not assumed			-0.214	93.855	0.831	-0.211	0.986	-2.168	1.746
CESD score	Equal variances assumed	0.065	0.799	0.398	334	0.691	0.600	1.506	-2.363	3.562
	Equal variances not assumed			0.407	95.297	0.685	0.600	1.471	-2.321	3.520

To establish a link between participants' gender and their scores on the various psychological constructs, a series of *t*-tests were conducted. It was determined that male participants scored higher than females on the NPI-16, indicating that males (mean 5.33, SD 3.116) tend to possess more narcissistic traits than females (mean 3.80, SD 2.580). No significant differences in how male and female participants scored on the RSES, BDI-II and CES-D were observed. See Table 3 for further details.

#### 4.5. Conclusion

In the current chapter, the results of the depression, self-esteem, narcissism and Facebook activity questionnaires and the resulting data analysis are presented.

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The results indicated that the scores measuring the psychological constructs revealed that nearly all participants achieved scores within the normal range, suggesting that participants presented with adequate self-esteem and that their mood and narcissistic traits were within the normal range. As expected, there was a negative correlation between participants' depression and self-esteem scores, suggesting that when depression increases, participants' self-esteem decreases. A positive correlation was observed between participants' self-esteem and narcissism scores, suggesting that self-esteem tends to increase in accordance with the higher the participant scores on the narcissism inventory. Notably, scores on the CES-D were positively correlated with the frequency with which Facebook is accessed.

A more detailed discussion of these results as they relate to existing academic research, is presented in Chapter 5.

## **Chapter 5**

### **Discussion**

This chapter reflects on aspects of the study, inter alia details of the sample such as racial diversity, participants' use of Facebook, and the psychological constructs that are relevant to the present research. The results and their significance are reflected on, in addition to discussing the limitations of this study, and recommendations for future research in this field. The first section revisits the characteristics of the current sample.

#### **5.1. Participant characteristics**

The final sample all had the common denominators of being UCT undergraduate students, both male and female, who were conversant with social media. Facebook users were targeted, and the sample was restricted to regular users of Facebook as a preferred social medium. Of the total of 336 participants, the Facebook users comprised 273 female and 63 male undergraduate students. It is significant that the female participants tended to represent more than 60% of the study sample, as this figure is in keeping with various other studies (e.g. Clerkin, Smith, & Hames, 2013; Feinstein, Bhatia, Hershenberg, & Davila, 2012; Kalpidou, Costin, & Morris, 2011; Morgan & Cotten, 2003; Valenzuela, Park, & Kee, 2009; Whitehill, Brockman, & Moreno, 2013) where female participants represented more than 60% of the sample.

The popular social medium of Facebook was created initially with the intention of providing a platform for connection between university students as reflected by Social Network Demographics (2015).

The present study specifically selected the typical 'target' age for users of Facebook, and therefore the study participants' ages ranged from 18 to 24 years. The average age of the final sample was 19.

The sample had the added characteristic of being racially diverse and, as a result, participants' racial classifications were recorded. The results were as follows:

Notably, over 60% of the participants were classified as white, 18% as coloured, and 13% as black. The racial classifications of participants in other research also seemed to represent a majority white population group (Davila et al., 2012; Feinstein et al., 2013; Pantic, 2014; Vogel, Rose, Roberts, & Eckles, 2014; Zeigler-Hill & Besser, 2013).

Additional data were collected, such as the frequency and access of the participants' use of Facebook, which is discussed in the next section.

### **5.2. Facebook activity and access method**

Participants were asked to indicate the frequency with which they checked their Facebook page as well as how much time per day they spent on the site.

The recorded results were an average of 5 times per day, with a total of 1–30 minutes per day. The latter results were compared with the research by Rosen, Whaling, Rab, Carrier, & Cheever (2013). Interestingly, it was noted that the Facebook use results were the same for the latter's participants.

The data collected from the participants indicated that the sample used both smartphones and laptops/computers (47.6%) to access Facebook. A smaller number of participants (19.3%) utilised only their smartphones to access their Facebook accounts. Junco (2013) and, once again, Rosen et al. (2013) presented similar statistics, as their study reflected that most university students used smartphones and laptops/computers to access Facebook. In comparison, Facebook states that 1.44 billion monthly Facebook users use Facebook mobile products, accessing the social network via their smart phones (Facebook Key Fact, 2015 and Statista, 2015). This statistic suggests that Facebook use via smartphone is the most popular means of accessing the social network platform.

In the next sections, the discussion concerns the depression, self-esteem and narcissism scores of the participants.

### **5.3. Psychological constructs**

#### **5.3.1. Depression scores**

To measure the participants' levels of depression, the BDI-II and CES-D were used. The BDI-II was used because it tends to measure construct items such as mood, appetite and fatigue commons amongst a clinical population (Beck 1961), while the CES-D measures more of the affective components of depression and depressive symptoms amongst the general population (Radloff, 1977). The results of the present study reflected that the majority of the research participants scored within the normal range on both measures, indicating little to no depression. It had been expected that there would be some level of depression amongst this population because young adults, according to studies such as that of Smith and Blackwood (2004), are normally at risk of presenting with symptoms of depression. According to Youn et al. (2013), who screened their student participants for depressive symptoms using Facebook, 26.7% of the students who participated in their research study screened positive for having major depressive disorder.

As reported by various studies, most first-year university students have difficulty in adjusting to the gap between high school and university. Having left their comfort zone, they have to adjust to an unfamiliar environment and leave behind familiar support structures in embracing their new university environment. The adjustment to a completely new environment and structure may be instrumental in leading to symptoms of depression and low self-esteem. According to Youn et al (2013), the latter characteristic in turn tends to influence students' academic performance, physical health and substance misuse as well as maladaptive eating behaviour. Based on these factors, one would have expected to see the research participants of the present study, who are relatively new to university, present with depressive

symptoms. According to Hunt and Eisenberg (2010), depression is amongst the most common health issues affecting university students today, with 25%–33% of students reporting that depressive symptoms affect their ability to perform daily activities (as cited in Moreno et al., 2011; Whitehill, Brockman, & Moreno, 2013; Youn et al., 2013).

### **5.3.2. Self-esteem scores**

The sample comprised young university students in a transitory stage of their lives and studies, with new and unfamiliar demands; and, in normal circumstances, these factors tend to have a negative effect on self-perception and self-image. In addition, aspects of healthy self-esteem are often associated with a positive perception of physical appearance and are influenced by relationships. Ordinarily, people of this age and circumstances would have a relatively low self-esteem.

It was not anticipated that the scores of participants in relation to self-esteem as measured by the RSES appear to have measured within the normal range. Very few (i.e. 43) participants presented with scores indicative of low self-esteem. The scores of this sample did not reflect factors such as lack of achievement, perceived failures or lack of success, nor did they appear to be overly influenced by the opinion of peers and others such as university lecturers or people within their circle even though, according to Sadock and Sadock (2009) and Valkenberg et al. (2006), young adulthood is an influential period in which opinions pertaining to the self are very likely to influence self-esteem and wellbeing.

### **5.3.3. Narcissism scores**

Similarly (as in the previous section), none of the participants presented with high narcissistic personality traits as measured by the NPI-16, as participants did not score high on the NPI-16. These scores contradict the results by Twenge and Campbell (2009) who found that university students today tend to score significantly higher on the NPI-16 than their cohorts of 20 years ago. As indicated by the NPI-16 results, this was not the case with the



participants of the present study. The results are also contradictory to the supposition that narcissism might be on the increase. The latter suggestion is based on the fact that generational values and younger generations of the 1980s and 1990s (known as the ‘net generation’ and ‘iGeneration’) (Rosen et al., 2013, pg. 1244) tend to have a strong urge to account for their daily activities on social networking platforms in the belief that their social networking connections care about them, qualifying for symptoms accounted for by the NPI-16.

### **5.4. Correlations**

#### **5.4.1. Depression and the link to self-esteem**

A causal relationship does not necessarily exist between depression and self-esteem, despite some researchers arguing that they are the same construct. Based on this view, self-esteem may influence the aetiology of depressive symptoms, as low self-esteem is understood as a consequence of depression, rather than causing it (Sowiso and Orth, 2013). In the present study, in testing the correlation between self-esteem and depression, it was observed that self-esteem was notably associated with depression i.e. BDI-II ( $r = -0.665, p < 0.01$ ) and CES-D ( $r = -0.694, p < 0.01$ ). More specifically, the higher participants appeared to score in relation to their self-esteem, the lower they scored on depression. These results made it evident that self-esteem is associated with depression, although it is unclear whether a causal link is responsible for this association.

#### **5.4.2. Narcissism and the link to self-esteem**

An increase in self-esteem may also be associated with an increase in narcissistic traits. As anticipated, the results of the present study indicated a positive relationship between self-esteem and narcissism. In the previous section, the association between depression and self-esteem was reviewed. Similarly, the association between narcissism and self-esteem cannot be assumed to have a causal relationship. According to research by Gentile, Twenge,

Freeman and Campbell (2012) and Zeigler-Hill, Clark, & Pickard (2008), it has been suggested that self-esteem is often associated with narcissism.

Although there are many significant differences between self-esteem and narcissism, individuals who present with greater narcissistic traits generally tend to have high levels of self-esteem. Whereas individuals with high self-esteem have a tendency to rate themselves as superior to others across a variety of traits, those who present with narcissism are inclined to rate themselves as superior on particular traits only. Both high self-esteem and narcissistic individuals are inclined to view themselves positively. On the other hand, those with high self-esteem have a tendency to show more positive regard towards others.

### **5.4.3. Depression and social networking activity**

It was the intention of the present study to find a link between Facebook activity and an increase in depressive symptoms, in terms of the first hypothesis. Accordingly, the association between depression as measured by the BDI-II and participants' Facebook activity in relation to the amount of time spent on Facebook, how frequently they logged on and how they accessed Facebook, was examined.

However, there was no strong association between the levels of depression of the sample and their Facebook activity. Similarly, when exploring the connection between depression as measured by the CES-D, time spent and access method, no significant associations became apparent. However, higher scores on the CES-D were associated with the frequency with which Facebook was being accessed. Based on the overall results from the study, the premise or expectation that depressive symptoms may increase when there is a greater amount of time spent on Facebook, was not supported.

There is also the suggestion that the quality of social network use, rather than time spent on the internet or on social networking sites, may have a link to depressive symptoms, as outlined by Davila et al. (2012). Their study established that an increase in depressive

symptoms were associated with a more negative of type of interaction on social networking sites. However, a similar study by Pantic et al. (2012) established that time spent on Facebook by high school students was the determining factor in relation to an association with depressive symptoms.

A similar study, also based on Facebook use, delivered different results in comparison with the above studies. Jelenchick et al. (2013) and Selfhout et al. (2009) found that there was no relationship between depression and Facebook use. The results of the current study support their findings, which suggests that there is no association between depressive symptoms and greater amount of time spent on Facebook. The next section evaluates the second hypothesis, related to self-esteem and Facebook use.

#### **5.4.4. Self-esteem and social networking**

In the second hypothesis, the present study aimed to investigate the relationship between Facebook use and self-esteem. It was predicted, more specifically, that participants with low self-esteem, as indicated by their scores on the RSES, would spend a greater amount of time on Facebook. Based on the amount of time spent on Facebook, how frequently it was accessed and how it was being accessed, the results of the present study indicated no significant associations between self-esteem and Facebook activity. Similarly to the studies on depression, there were mixed results in respect of literature exploring self-esteem and social networking involvement. Certain studies have reported either a negative or positive relationship with various types of internet use, while others have reported no significant relationship at all between internet use and self-esteem.

Mehdizadeh (2010) examined how self-esteem manifests on Facebook, and it was this hypothesis that was tested for the purpose of the present study. Based on the hypothesis, it is suggested that there is a significant negative association between self-esteem and Facebook activity. In particular, participants in Mehdizadeh's study, who rated lower on the RSES,

revealed spending more time on Facebook per session. These participants also reported logging onto the social network more frequently. Another significant study by Kalpidou, Costin, & Morris (2011) reported a correlation between time (in minutes) spent on Facebook and self-esteem, concluding that spending more time on Facebook is associated with low self-esteem. They also pointed out that students who spend more time on Facebook reported having lower self-esteem, compared with those who spent less time on the social networking site.

Valkenberg, Patti, Schouten, Alexander and Peter (2006) explored the issue of 'social self-esteem' which, according to these authors, was measured by perceptions of one's physical appearance, romantic appeal and close relationships in relation to positive feedback received from Facebook friends. Their research study explored the types of reaction that users received to their online profiles on social networking sites; and, based on results, it was found that self-esteem was not associated with frequency of social network engagement or the number of connections they had. Instead, users who received negative responses from their social network connections reported lower self-esteem, while those who received favourable responses on their profiles reported greater 'social self-esteem'. In another study amongst university students, self-esteem was related to engaging with fellow Facebook users. In particular, low self-esteem was associated with feeling a greater sense of belonging and connectedness with their Facebook connections. This research also linked lower self-esteem with accepting friend requests from strangers and 'untagging' (i.e. removing a tag or link to photos and/or posts that you or friends may publish on Facebook) oneself from posts (Tazghini & Siedlecki, 2013).

In direct contrast, Krämer and Winter (2008) found that self-esteem was not associated with StudiVZ activity (a German social networking website similar to Facebook (Krämer & Winter, 2008)). In keeping with the present study, the results obtained by Krämer

and Winter (2008) suggest that there was no relationship between a greater amount of time spent on Facebook and lower self-esteem. Owing to the similarities between the two social networking websites, and despite the fact that Krämer and Winter (2008) used a German social networking site (i.e. StudiVZ), it is reasonable to expect similar results between the respective studies.

### **5.4.5. Narcissism and social networking activity**

The third hypothesis was based on the premise that the scores of individuals with high narcissism scores will correlate with those of individuals with a greater amount of Facebook activity.

There was no significant correlation in the results of the current study, which indicates that the participants scored low on the narcissism scale, when correlated with how much time was spent on Facebook per day, how it was accessed and how many sessions per day that users logged on.

Similarly to a study by Vazire and Gosling (2004), the current study predicted that because narcissists are known to manage themselves well in the context of more superficial relationships (as opposed to more meaningful and committed relationships), social networking platforms were the perfect backdrop for helping them to self-regulate via their friend networks, photos and posts. In addition, because narcissists are self-absorbed, boastful and motivated to talk about themselves, they might be particularly drawn to the fact that personal social networks or profiles become the perfect vehicles to allow them to select more appealing photos of themselves or share status updates or descriptions that tend to be more self-promoting. In this way, they support their narcissism.

In this and previous sections, studies have been included that either reinforce or oppose the current study. For example, studies by Buffardi and Campbell (2008) and Mehdizadeh (2010) predicted that there would be a significant positive relationship between

individuals who scored high on the NPI-16, time spent on Facebook per session, and frequency with which Facebook was checked per day. As there were significant positive correlations found between self-promoting content and high scores on the NPI-16, the just-mentioned authors' results partially supported this hypothesis. Buffardi and Campbell (2008) also determined that Facebook judgements of the level of narcissism displayed by a Facebook user, were based on the number of social interactions and self-promoting content on profile pictures (Buffardi and Campbell, 2008; DeWall et al., 2011). Buffardi and Campbell (2008) also noted that those who scored high on the NPI-16 were rated by others as having profile photos that were considered as being physically attractive and more self-promoting in comparison with users who scored low on the NPI-16. It is noteworthy that those with high scores on the NPI-16 also appeared to have more Facebook connections and wall posts on their personal profiles.

In contrast to the above study, the present study did not reveal high levels of narcissism in Facebook users. Specifically, a score between 12 and 15 on the NPI-16 is demonstrative as average, and narcissists, on the other hand, score  $>20$ . None of the participants in this study scored  $>15$ , revealing low narcissism.

In keeping with previous examples cited, additional research has indicated that the more time spent on Facebook and higher frequency of checking Facebook, predicted higher narcissism scores (Ryan and Xenos, 2011).

However, Bergman, Fearington, Davenport, & Bergman (2011) found similar results to those of the present study in that, based on results, it was established that narcissism was not a strong predictor, based on reported amount of time spent on Facebook or frequency of access. The findings of Bergman et al. (2011) did not reinforce narcissism, as they suggested that Facebook users did not use the social network exclusively for attention seeking or

maintaining self-esteem, as anticipated, but as a means of communicating and connecting with others.

Wink (1991) acknowledged differences in the use of the concept of narcissism, most notably its duality (Tritt, Ryder, Ring, & Pincus, 2010). He concluded that there was empirical evidence to confirm the dual nature of narcissism by identifying two dimensions that underpin the narcissistic personality, which he labelled as ‘grandiosity-exhibitionism’ (grandiose or overt narcissism) and ‘vulnerability-sensitivity’ (vulnerable or covert narcissism). The grandiose form of narcissism is associated with a need to maintain an exaggerated self-image, with exhibitionistic tendencies and a need for affirmation and admiration from others. In contrast, vulnerable narcissists tend to be concerned with grandiose fantasies, while possessing a fragile self-confidence that vacillates between feelings of inferiority and superiority. Marčinko et al. (2014) is of the opinion that vulnerable narcissists tend to exhibit stronger traits related to dependency, neuroticism, perfectionism and low self-esteem. It is relevant that since the NPI-16 appears to account for traits associated with more ‘grandiose-exhibitionism’, it is likely that the participants of this study could have been better accounted for by a narcissism inventory that takes into consideration symptoms evident in more ‘vulnerable-sensitive’ narcissists (Ames, Rose, & Anderson, 2006).

#### **5.4.6 Social comparison theory as a theoretical outline**

As no theoretical framework exists in relation to this topic, social comparison theory was used to try to comprehend what might motivate users to engage with social networking. What motivated the use of this theory is that it also takes into account symptoms of depression, levels of self-esteem and narcissistic traits that may emerge when comparing themselves to others, when engaging in online social networks.

In keeping with the premise of this theory (which highlights that when comparing themselves with others, individuals evaluate their own abilities, weaknesses and strengths), it was expected that there would be various emotional outcomes that result from social comparison; namely, that as a result of the comparison with others, the participants of the present study would feel positively or negatively about themselves.

Based on this approach, it was expected that, through engaging in social comparison and depending on how frequently they accessed Facebook, participants of the present study would experience various emotional outcomes, influencing their scores on the depression, self-esteem and narcissism scales. This theory was as a result used as a framework in explaining the possible association between emotional outcomes and social networking activity. However, as overall scores were not indicative of participants experiencing depressive symptoms, low self-esteem or high narcissism, social comparison theory could not be used to account for the possible association that was expected.

### **5.5. Limitations of the current study**

#### **5.5.1. Sample**

Limitations of quantitative studies are that we anticipate results to be generalisable and objective as far as possible. However, this is not possible owing to the specific way in which the sample was selected for the present study (i.e. through the SRPP). Challenges for the study included logistical difficulties and time constraints. The latter did not allow an extensive pool of participants to be included. The student sample ( $N = 336$ ) comprised a relatively homogeneous group of middle- to upper-class young people from UCT. These students had the resources and skills to access multimedia devices and, by extension, they could access Facebook with more frequency, and also more easily.

It is therefore believed that the sample used in the study did not represent a majority of the South African population. The racial demography was particularly biased, with more



than 60% of the population being white, while only 13% were classified as black. It is therefore noted that the results are not generalisable in relation to the population at large. There is also the issue of the external validity of the findings, in that they may be further restricted by the limited geographic range of the sample. Furthermore, those who participated displayed 'opt-in bias', as they were a self-selecting group who were interested in the topic (Heath, Brooks, Cleaver, & Ireland, 2009; McCready). Lounsbury, Mitchell and Finkelhor (2011) criticise the use of unrepresentative and convenience samples, which may result in an increase in estimates of incidence. Access to a larger, more representative sample of young adults was not possible, and regrettably unavoidable, in the present study.

In relation to the homogeneity of the current sample, DiMaggio, Hargittai, Celeste and Shafer (2004) suggest that one's ability to make use of new media, much like other socio-economic opportunities, is influenced by race, family, socio-economic status, education level, gender, and rural or urban residence. As stated earlier, this consideration makes the current study not typical or representative of the majority of the South African population.

### **5.5.2 Administrative constraints**

Although, at the outset, the survey data collection presented with little to no logistical issues or constraints, the situation changed when the research team had to meet participants in order to code their Facebook information. There were difficulties in arranging timeslots to meet participants in a computer laboratory at UCT. Challenges were also experienced while endeavouring to ensure anonymity of participants – for example, to ensure that they did not see each other when the information was coded.

### **5.5.3 Survey limitations**

While questionnaires relating to the psychological constructs have been utilised extensively for research purposes internationally and have gained adequate reliability and validity, it is significant that they have not been standardised for a South African population

*per se*. In the present thesis, the BDI-II, CESD and RSES were calculated to have good internal reliability (Cronbach  $\alpha = 0.903, 0.918$  and  $0.870$  respectively), while the NPI-16 had marginal internal reliability. It is therefore of note that a limitation of the psychological questionnaires relates to their applicability within a South African context. Also, the data collected during the second phase of the study were reliant on self-reporting, and it cannot be ignored that this might have involved under-reporting or exaggeration of participants' Facebook use and activity owing to perceptions of socially desirable norms or social stigma (Palen, Smith, Caldwell, Flisher, Wegner, & Vergnani, 2008). Bias from participants influenced the extent to which the results were objective, as well as whether they were honest about the frequency of their Facebook activity and the subjectivity in how Facebook pages would be coded by the research team (Terre Blanche, 2010). Despite surveys being convenient and generally short to complete, the results provide little insight into why the participants answered as they did.

### **5.5.4 Causality**

Another limitation regarding the present research relates to the causal nature of the constructs. Should a causal relationship have been determined between Facebook activity and the psychological constructs, it cannot be assumed that Facebook caused the relationship. Conducting a longitudinal study may provide more insight as to whether a causal relationship exists, and should as a result be explored further (Jelenchick et al., 2013; O'Keeffe & Clarke-Pearson, 2011).

### **5.5.5 Systematic response differences**

The study design might have caused systematic response differences in that participants might have answered differently had they been given a physical copy of the questionnaires, compared with answering an online version (Bergman, 2008). Mensch, Hewett and Erulkar (2003) state that there is some evidence suggesting that individuals report

behaviours differently according to whether data are collected electronically or via physical paper-and-pen methods. It is believed that participants consider electronic surveys more confidential and therefore more conducive to honest responses. However, owing to the emotive nature of the constructs measured, participants might have found it difficult to honestly account for their experience of symptoms or traits.

### **5.6 Recommendations for future research**

#### **5.6.1 Representative sample**

Bearing in mind that South Africa is diverse in terms of population and is multi-cultural, future research should explore whether results apply to all racial/ethnic groups as well as other generational groups. Bergman et al. (2011) maintain that, in addition to the cultural and racial diversity, social networking activity is likely to be significantly varied. One also has to bear in mind socio-economic differences in South Africa; experiences of, and principles related to, gender; young adults' attitudes; and methods for utilising online technology (Bergman et al., 2011).

#### **5.6.2 Improving measures**

Future research in similar fields should access a larger sample. Such a sample should ideally be more representative in gender, age and ethnicity and also be selected across a wide variety of settings. In addition, it is crucial that a psychometrically sound and objective measure of Facebook activity and page coding measures be developed and utilised, if Facebook activity is to be accurately understood.

#### **5.6.3 Study design**

Focus groups and/or structured individual interviews would allow more in-depth, qualitative data collection that may be driven by participants, and the latter should be incorporated in future research. The same psychological constructs – namely depression, self-esteem and narcissism traits – could be explored on a deeper level, by conducting in-depth

qualitative interviews to assess for symptoms and the implications of social media use. This method could provide researchers with more insight into participants' psychological states of mind, as well as more understanding of how users utilise social networking sites. This understanding would provide implications into the participants' psyches. According to Jelenchick et al. (2013), no qualitative research in this field has been reported to date, yet the number of patients seeking therapy in relation to experiences that occur via social networking sites is increasing.

### **5.6.4 Alternative social networking sites**

Facebook continues to be the most popular and social networking site. Nevertheless, it should be considered that not all social network sites are the same. Twitter, another popular social network, is based on a different concept. Twitter users share and read short messages called tweets in which they may express their feelings, opinions and thoughts, or share news, and share popular or noteworthy tweets, called 'retweeting'. Instagram, on the other hand, has a visual aspect, whereby users upload photos viewed by their connections. It is similar to Facebook, and is reliant on comments or likes from friends. Most of the research quoted in the present study has focused on Facebook as the main social networking site and, despite authors using the term 'social networking', most examples use Facebook as the main network for investigation. To date, there is very little research primarily focused on Twitter, Instagram or other social networking sites and the influences they may have on mental health. Going forward, it can be expected that other popular social networking sites may also become the subject of research (O'Keeffe & Clarke-Pearson, 2011).

### **5.7 Conclusion**

As stated in the introduction, the present study addressed a paucity in the literature concerning the implications of social networking on mental health in a South African context. This shortfall gave rise to the purpose of the research study.

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In conclusion: the internet and, more specifically, social networking has resulted in momentous changes in the ways that human beings connect, socialise and engage with one another. By extension, this advancement in communication has given rise to research such as the current study, as it is a matter of speculation whether some of these changes influence aspects of human behaviour, mental health and wellbeing.

The purpose of the study was to examine whether social networking, namely Facebook use, could result in a relationship between the psychological constructs of depression, narcissism and self-esteem and Facebook activity, where Facebook activity was measured in relation to time, access method and frequency of its use.

The results of the study suggested that there was no significant relationship between Facebook activity and the psychological constructs explored. Overall, the research, as discussed in the literature review, was contradictory, with some studies suggesting that Facebook use has a negative effect on depressive symptoms, self-esteem and narcissistic traits, while others studies suggested that, conversely, it might have a positive effect on mental health. These studies suggest that associations between social networking activity and elements of mental health may be more complex than anticipated. This indication highlights a direction for future research, where the potential exists to explore and describe the convoluted relationships between social networking and mental health.

## References

- Ames, D.R., Rose, P., & Anderson, C.P. (2006). The NPI-16 as a short measure of narcissism. *Journal of Research in Personality, 40*, 440–450.
- Anastasopoulos, D. (2007). The narcissism of depression or the depression of narcissism and adolescence. *Journal of Child Psychotherapy, 33*(3), 345–362.  
<http://doi.org/10.1080/00754170701667197>
- Appel, H., Crusius, J., & Gerlach, A. L. (2015). Social Comparison , Envy , and Depression on Facebook : A Study Looking at the Effects of High Comparison Standards on Depressed Individuals, *34*(4), 277–289.
- Babbie, E. & Mouton, J. 2008. The practice of social research. 8th ed. Cape Town: Oxford University Press.
- Bargh, J. A., McKenna, K. Y., & Fitzsimons, G. M. (2002). Can you see the real me? Activation and expression of the “true self” on the Internet. *Journal of Social Issues, 58*,33–48.
- Beck A.T., Steer R.A. and Brown G.K. (1996) Manual for the Beck Depression Inventory-II. San Antonio, TX: Psychological Corporation
- Bergman, S. M., Farrington, 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*(5), 706–711.  
<http://doi.org/10.1016/j.paid.2010.12.022>
- Blease, C. R. (2015). Too many “friends,” too few “likes”? Evolutionary psychology and “facebook depression.” *Review of General Psychology, 19*(1), 1–13.  
<http://doi.org/10.1037/gpr0000030>
- Bosson, J. K., Lakey, C. E., Campbell, W. K., Zeigler-Hill, V., Jordan, C. H., & Kernis, M. H. (2008). Untangling the links between narcissism and self-esteem: A theoretical and

- empirical review. *Social and Personality Psychology Compass*, 2, 1415–1439
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13, 210–230.
- Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking Web sites. *Personality & Social Psychology Bulletin*, 34(10), 1303–14.  
<http://doi.org/10.1177/0146167208320061>
- Buunk, A. P., & Gibbons, F. X. (2006). Social comparison orientation: A new perspective on those who do and those who do not compare with others. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup intergroup relations, and culture*. New York: Cambridge University Press
- Chou, H. -T. G., & Edge, N. (2012). They are happier and having better lives than I am: The impact of using Facebook on perceptions of others' lives. *Cyberpsychology, Behavior and Social Networking*, 15(2), 117–121.
- Clerkin, E. M., Smith, A. R., & Hames, J. L. (2013). The interpersonal effects of Facebook reassurance seeking. *Journal of Affective Disorders*, 1–6.  
<http://doi.org/10.1016/j.jad.2013.06.038>
- Collins, D. R., & Stukas, A. a. (2008). Narcissism and self-presentation: The moderating effects of accountability and contingencies of self-worth. *Journal of Research in Personality*, 42(6), 1629–1634. <http://doi.org/10.1016/j.jrp.2008.06.011>
- Cooper, A. M. (1998). Further developments in the clinical diagnosis of narcissistic personality disorder. In E. F. Ronningstam (Ed.), *Disorders of Narcissism: Diagnostic, Clinical, and Empirical Implications* (pp. 53-74). Washington, DC: American Psychiatric Press.
- Davila, J., Hershenberg, R., Feinstein, B. a., Gorman, K., Bhatia, V., & Starr, L. R. (2012). Frequency and quality of social networking among young adults: Associations with

## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

depressive symptoms, rumination, and corumination. *Psychology of Popular Media Culture*, 1(2), 72–86. <http://doi.org/10.1037/a0027512>

De Vos, A.S. (2002). *Research at Grass Roots: For the Social Sciences and Human Service Professions 2<sup>nd</sup> Edition*. Pretoria: Van Schaik

De Vries, D. A., & Kühne, R. (2015). Facebook and self-perception : Individual susceptibility to negative social comparison on Facebook. *PAID*, 86, 217–221.

<http://doi.org/10.1016/j.paid.2015.05.029>

DiMaggio, P., Hargittai, E., Celeste, C., & Shafer, S. (2004). From unequal access to differential use: A literature review and agenda for research on digital inequality. In

K. Neckerman (Ed.), *Social Inequality* (pp. 355-400). New York, NY: Sage.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook “Friends:”

Social Capital and College Students’ Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.

<http://doi.org/10.1111/j.1083-6101.2007.00367.x>

Facebook (2016) *Key Facts*. Retrieved 30 Januar 2016 from <http://newsroom.fb.com/Key-Facts>

Feinstein, B. a, Bhatia, V., Hershenberg, R., & Davila, J. (2012). Another Venue for

Problematic Interpersonal Behavior: The Effects of Depressive and Anxious Symptoms on Social Networking Experiences. *Journal of Social and Clinical Psychology*, 31(4), 356–382. Retrieved from

<http://guilfordjournals.com/doi/abs/10.1521/jscp.2012.31.4.356>

Festinger, L. (1954). *Human Relations*. <http://doi.org/10.1177/001872675400700202>

Fuhr, K., & Hautzinger, M. (2015). Are Social Comparisons Detrimental for the Mood and

Self- Esteem of Individuals with an Affective Disorder ? *Cognitive Therapy and Research*, 279–291. <http://doi.org/10.1007/s10608-014-9656-2>



## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

- Gentile, B., Twenge, J. M., Freeman, E. C., & Campbell, W. K. (2012). The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behavior*, 28(5), 1929–1933.  
<http://doi.org/10.1016/j.chb.2012.05.012>
- Gibbons, F. X., & Buunk, B. P. (1999). Individual differences in social comparison: Development of a scale of social comparison orientation. *Journal of Personality and Social Psychology*, 76(1), 129–142.
- Gonzales, A. L., & Hancock, J. T. (2011). Mirror, mirror on my Facebook wall: effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior and Social Networking*, 14(1-2), 79–83. <http://doi.org/10.1089/cyber.2009.0411>
- Grieve, R., Indian, M., Witteveen, K., Anne Tolan, G., & Marrington, J. (2013). Face-to-face or Facebook: Can social connectedness be derived online? *Computers in Human Behavior*, 29(3), 604–609. <http://doi.org/10.1016/j.chb.2012.11.017>
- Harman, J. P., Hansen, C. E., Cochran, M. E., & Lindsey, C. R. (2005). Liar, liar: internet faking but not frequency of use affects social skills, self-esteem, social anxiety, and aggression. *Cyberpsychology & Behavior: The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, 8(1), 1–6.  
<http://doi.org/10.1089/cpb.2005.8.1>
- Hunt, D., Atkin, D., & Krishnan, A. (2012). The influence of computer-mediated communication apprehension on motives for Facebook use. *Journal of Broadcasting & Electronic Media*. <http://doi.org/http://dx.doi.org/10.1080/08838151.2012.678717>
- Ivcevic, Z., & Ambady, N. (2012). Personality impressions from identity claims on Facebook. *Psychology of Popular Media Culture*, 1, 38–45.
- Jelenchick, L. a, Eickhoff, J. C., & Moreno, M. a. (2013). “Facebook depression?” social networking site use and depression in older adolescents. *The Journal of Adolescent*

## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

*Health : Official Publication of the Society for Adolescent Medicine*, 52(1), 128–30.

<http://doi.org/10.1016/j.jadohealth.2012.05.008>

Jenkins-guarnieri, M. A., Wright, S. L., & Hudiburgh, L. M. (2012). Journal of Applied Developmental Psychology The relationships among attachment style , personality traits, interpersonal competency , and Facebook use, 33, 294–301.

Johnson, B. K., & Knobloch-westerwick, S. (2014). Computers in Human Behavior Glancing up or down : Mood management and selective social comparisons on social networking sites. *Computers in Human Behavior*, 41, 33–39.

<http://doi.org/10.1016/j.chb.2014.09.009>

Junco, R. (2013). Comparing actual and self-reported measures of Facebook use. *Computers in Human Behavior*, 29(3), 626–631. <http://doi.org/10.1016/j.chb.2012.11.007>

Kalpidou, M., Costin, D., & Morris, J. (2011). The relationship between Facebook and the well-being of undergraduate college students. *Cyberpsychology, Behavior and Social Networking*, 14, 183–189. <http://dx.doi.org/10.1089/cyber.2010.0061>.

Krämer, N. C., & Winter, S. (2008). Impression Management 2.0. *Journal of Media Psychology: Theories, Methods, and Applications*, 20(3), 106–116.

<http://doi.org/10.1027/1864-1105.20.3.106>

Kraut, R., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet Paradox Revisited. *Journal of Social Issues*, 58(1), 49–74.

<http://doi.org/10.1111/1540-4560.00248>

Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet Paradox, 53(9), 1017–1031.

Krizan, Z., & Bushman, B. J. (2011). Better than my loved ones : Social comparison tendencies among narcissists. *Personality and Individual Differences*, 50(2), 212–216.

<http://doi.org/10.1016/j.paid.2010.09.031>

## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

- Lee, S. Y. (2014). Computers in Human Behavior How do people compare themselves with others on social network sites?: The case of Facebook. *Computers in Human Behavior*, 32, 253–260. <http://doi.org/10.1016/j.chb.2013.12.009>
- Marčinko, D., Jakšić, N., Ivezić, E., Skočić, M., Surányi, Z., Lončar, M., ... Jakovljević, M. (2014). Pathological narcissism and depressive symptoms in psychiatric outpatients: Mediating role of dysfunctional attitudes. *Journal of Clinical Psychology*, 70(4), 341–352. <http://doi.org/10.1002/jclp.22033>
- McAndrew, F. T., & Jeong, H. S. (2012). Who does what on Facebook? Age, sex, and relationship status as predictors of Facebook use. *Computers in Human Behavior*, 28(6), 2359–2365. <http://doi.org/10.1016/j.chb.2012.07.007>
- Mehdizadeh, S. (2010). Self-presentation 2.0: narcissism and self-esteem on Facebook. *Cyberpsychology Behavior and Social Networking*, 13(4), 357–364. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20712493>
- Moreno, M. a, Jelenchick, L. a, Egan, K. G., Cox, E., Young, H., Gannon, K. E., & Becker, T. (2011). Feeling bad on Facebook: depression disclosures by college students on a social networking site. *Depression and Anxiety*, 28(6), 447–55. <http://doi.org/10.1002/da.20805>
- Morgan, C., & Cotten, S. R. (2003). The relationship between internet activities and depressive symptoms in a sample of college freshmen. *Cyberpsychology & Behavior : The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, 6(2), 133–42. <http://doi.org/10.1089/109493103321640329>
- Mussweiler, T., Ruter, K., & Epstude, K. (2006). The why, who, and how of social comparison: A social-cognition perspective. In S. Guimond (Ed.), *Social comparison and social psychology: Understanding cognition, intergroup relations, and culture*. New York: Cambridge University Press.

## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

- Naaman, M., Boase, J., & Lai, C. (2010). Is it Really About Me ? Message Content in Social Awareness Streams, 189–192.
- Nadkarni, A., & Hofmann, S. G. (2012). Why Do People Use Facebook? *Personality and Individual Differences*, 52(3), 243–249. <http://doi.org/10.1016/j.paid.2011.11.007>
- Nathan DeWall, C., Buffardi, L. E., Bonser, I., & Keith Campbell, W. (2011). Narcissism and implicit attention seeking: Evidence from linguistic analyses of social networking and online presentation. *Personality and Individual Differences*, 51(1), 57–62. <http://doi.org/10.1016/j.paid.2011.03.011>
- Nicholls, E., & Stukas, A. A. (2011). Narcissism and the Self-Evaluation Maintenance Model : Effects of Social Comparison Threats on Relationship Closeness, 151(2), 201–212.
- O’Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics*, 127(4), 800–4. <http://doi.org/10.1542/peds.2011-0054>
- Ong, E. Y. L., Ang, R. P., Ho, J. C. M., Lim, J. C. Y., Goh, D. H., Lee, C. S., & Chua, A. Y. K. (2011). Narcissism, extraversion and adolescents’ self-presentation on Facebook. *Personality and Individual Differences*, 50(2), 180–185. <http://doi.org/10.1016/j.paid.2010.09.022>
- Palen, L., Smith, E.A., Caldwell, L.L., Flisher, A.J., Wegner, L., & Vergnani, T. (2008). Inconsistent Reports of sexual intercourse among South African high school students. *Journal of Adolescent Health*, 42(3), 221-227.
- Pantic, I. (2014). Online social networking and mental health. *Cyberpsychology, Behavior and Social Networking*, 17(10), 652–7. <http://doi.org/10.1089/cyber.2014.0070>
- Pantic, I., Damjanovic, A., Todorovic, J., Topalovic, D., Bojovic-Jovic, D., Ristic, S., & Pantic, S. (2012). Association between online social networking and depression in

## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

- high school students: behavioral physiology viewpoint. *Psychiatria Danubina*, 24(1), 90–3. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/22447092>
- Park, N. S., Kee, K. F., & Valenzuela, S. (2009). Being immersed in social networking environment: Facebook groups, uses and gratifications, and social outcomes. *CyberPsychology and Behavior*, 12(6), 729–733.
- Pempek, T. a, Yermolayeva, Y. a, & Calvert, S. L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, 30(3), 227–238. <http://doi.org/10.1016/j.appdev.2008.12.010>
- Radloff, L.S. (1977). The CES-D scale: a self report de- pression scale for research in the general population. *Applied Psychological Measurement* 3:385–401
- Radloff, L. S. (1991). The use of the Center for Epidemiologic Studies Depression Scale in adolescents and young adults. *Journal of Youth and Adolescence*, 20(2), 149–166. <http://dx.doi.org/10.1007/bf01537606>.
- Rohmann, E., Neumann, E., Herner, M. J., & Bierhoff, H.-W. (2012). Grandiose and Vulnerable Narcissism. *European Psychologist*, 17(4), 279–290. <http://doi.org/10.1027/1016-9040/a000100>
- Rosen, L. D., Whaling, K., Rab, S., Carrier, L. M., & Cheever, N. a. (2013). Is Facebook creating “iDisorders”? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior*, 29(3), 1243–1254. <http://doi.org/10.1016/j.chb.2012.11.012>
- Rosenberg, M. (1989). *Society and the adolescent self-image* (revised ed.). Middletown, CT: Wesleyan University Press.
- 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, 1658–1664.

## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

Sadock, B.J & Sadock, V.A. (2009). *Synopsis of Psychiatry*. Lippincott Williams and Wilkins

Selfhout, M. H. W., Branje, S. J. T., Delsing, M., ter Bogt, T. F. M., & Meeus, W. H. J.

(2009). Different types of Internet use, depression, and social anxiety: the role of perceived friendship quality. *Journal of Adolescence*, 32(4), 819–33.

<http://doi.org/10.1016/j.adolescence.2008.10.011>

Smith, D., Muir, W., & Blackwood, D. (2004). Genetics of early-onset depression. *The*

*British Journal Of Psychiatry*, 182(4), 363. doi:10.1192/bjp.182.4.363

Social Network Demographics in 2015 (2015) Retrieved 12 January 2016 from:

<http://royal.pingdom.com/2015/08/21/report-social-network-demographics-in-2015/>

Sowislo, J. F., & Orth, U. (2013). Does low self-esteem predict depression and anxiety? A meta-analysis of longitudinal studies. *Psychological Bulletin*, 139(1), 213–40.

<http://doi.org/10.1037/a0028931>

Statista (2016) *Facebook: number of monthly active users worldwide*. Retrieved 30 Januar

2016 from <http://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>

Stein, M. B., & Gorman, J. M. (2001). Unmasking social anxiety disorder. *Journal Of*

*Psychiatry & Neuroscience*, 26(3), 185-189.

Steinfeld, C., Ellison, N. B., & Lampe, C. (2008). Social capital, self-esteem, and use of

online social network sites: A longitudinal analysis. *Journal of Applied*

*Developmental Psychology*, 29(6), 434–445.

<http://doi.org/10.1016/j.appdev.2008.07.002>

Subrahmanyam, K., Reich, S., Waechter, N., & Espinoza, G. (2008). Online and offline social

networks: Use of social networking sites by emerging adults. *Journal of Applied*

*Developmental Psychology*, 29, 420–433

Swanepoel, T. (2012). Young adults' sexual strategies and mating displays in the virtual

world: an evolutionary perspective.

Tandoc, E. C., Ferrucci, P., & Duffy, M. (2015). Facebook use, envy, and depression among college students: Is facebooking depressing? *Computers in Human Behavior*.

<http://doi.org/10.1016/j.chb.2014.10.053>

Tazghini, S., & Siedlecki, K. L. (2013). Computers in Human Behavior A mixed method approach to examining Facebook use and its relationship to self-esteem, *29*, 827–832.

Terre Blanche, M. (2006) *Research in Practice: Applied methods for the social sciences 2nd Edition*. Cape Town: UCT Press

Thompson, S. H., & Lougheed, E. (2012). Frazzled by facebook? An exploratory study of gender differences in social network communication among undergraduate men and women. *College student journal*, *46*(1), 88-98.

Toseeb, U., & Inkster, B. (2015). Online Social Networking Sites and Mental Health Research. *Frontiers in Psychiatry*, *6*(March), 1–4.

<http://doi.org/10.3389/fpsy.2015.00036>

Tritt, S. M., Ryder, A. G., Ring, A. J., & Pincus, A. L. (2010). Pathological narcissism and the depressive temperament. *Journal of Affective Disorders*, *122*(3), 280–284.

<http://doi.org/10.1016/j.jad.2009.09.006>

Twenge, J. M., & Campbell, W. K. (2009). *The narcissism epidemic. Living in the Age of Entitlement*. New York: Free Press

Valkenberg, Patti M., Schouten, Alexander and Peter, J. (2006). Friend Networking Sites and Their Relationship to Adolescents' Well-Being and Social Self-Esteem, *9*(5), 584–591.

Van Voorhees, B. W., Fogel, J., Houston, T. K., Cooper, L. A., Wang, N., & Ford, D. E. (2005). Beliefs and Attitudes Associated With the Intention to Not Accept the Diagnosis of Depression Among Young Adults. *Annals Of Family Medicine*, *3*(1), 38-

45. doi:10.1370/afm.273

Vazire, S., & Gosling, S. D. (2004). e-Perceptions: personality impressions based on personal websites. *Journal of Personality and Social Psychology*, 87(1), 123–32.

<http://doi.org/10.1037/0022-3514.87.1.123>

Vogel, E. , Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social Comparison , Social Media , and Self-Esteem. *Psychology of Popular Media Culture*, 3(4), 206–222.

<http://doi.org/10.1037/ppm0000047>

Waters, R.D., Burnett, E., Lamm, A., & Lucas, J. (2008). Engaging Stakeholders Through Social Networking: How nonprofit organisations are using Facebook. *Public Relations Review*. 35(2), 102-106.

Whitehill, J. M., Brockman, L. N., & Moreno, M. a. (2013). “Just talk to me”: communicating with college students about depression disclosures on Facebook. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, 52(1), 122–7. <http://doi.org/10.1016/j.jadohealth.2012.09.015>

Wilson, R. E., Gosling, S. D., & Graham, L. T. (2012). A Review of Facebook Research in the Social Sciences. *Perspectives on Psychological Science*, 7(3), 203–220.

<http://doi.org/10.1177/1745691612442904>

Wink, P. (1991). Two faces of narcissism. *Journal of Personality and Social Psychology*, 61, 590–597.

Wimmer, A., & Lewis, K. (2010). Beyond and below racial homophily: ERG models of a friendship network documented on Facebook. *American Journal Of Sociology*, 116(2), 583-642. doi:10.1086/653658

doi:10.1086/653658

Youn, S. J., Trinh, N.-H., Shyu, I., Chang, T., Fava, M., Kvedar, J., & Yeung, A. (2013). Using online social media, Facebook, in screening for major depressive disorder among college students. *International Journal of Clinical and Health Psychology*,



## DEPRESSION, SELF-ESTEEM AND NARCISSISM ON FACEBOOK

13(1), 74–80. [http://doi.org/10.1016/S1697-2600\(13\)70010-3](http://doi.org/10.1016/S1697-2600(13)70010-3)

Zeigler-Hill, V., & Besser, A. (2013). A glimpse behind the mask: facets of narcissism and feelings of self-worth. *Journal of Personality Assessment*, 95(3), 249–60.

<http://doi.org/10.1080/00223891.2012.717150>

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior*, 24(5),

1816–1836. <http://doi.org/10.1016/j.chb.2008.02.012>

**Appendix A: Ethical Approval Letter**

**UNIVERSITY OF CAPE TOWN**



**Department of Psychology**

University of Cape Town, Rondebosch 7700, South Africa  
Telephone (021) 650-3900  
Fax: (021) 689-1006

4<sup>th</sup> June 2013

To whom it may concern,

**RE: NURAIN TISAKER**

Ms. Tisaker is a student in the University of Cape Town's Masters in Clinical Psychology programme. During the programme, she is required to complete a research dissertation. The topic of her dissertation is "Depression, self-esteem and narcissism on Facebook".

Ms. Tisaker's proposed research has received ethical approval from the Ethics Committee of the Department of Psychology.

Please do not hesitate to contact me should you have any queries.

Sincerely,

**Signed**

Dr. D. Kaminer  
Director, UCT Clinical Psychology Masters Programme  
Member of Psychology Department Ethics Committee  
Email: Debbie.kaminer@uct.ac.za

## **Appendix B: Invitation to Participate in Research**

Dear Participant,

We are conducting research on the potential links between depression, self-esteem, personality type and life history strategy on Facebook and chat room behaviour. Please complete the questionnaires below, which shouldn't take you more than 30 or 45 minutes to complete. Your responses will be kept completely confidential so please reply as honestly as possible.

### **Procedure**

If you agree to participate, your participation will involve filling out online questionnaires about your demographic information, personality, mood and self-esteem. You will fill out the surveys online (on any computer). There are no right or wrong answers, so please respond honestly. You are first required to fill out some demographic information. Please note that we need your correct student number in order to award you course credit. All personal information will be kept separate from your survey responses, so that those survey responses remain completely confidential. You will be awarded 1 SRPP point for completing the online surveys. During the study, you will be required to meet with the researchers in the computer Lab during a chosen time-slot for viewing of your Facebook profile, where aspects of your profile will be coded for the purpose of the study.

You will also be asked on the final page of the questionnaire if you would like to participate further, in the second phase of the research. If you respond YES, we require you to provide us with your name and contact details. These details will be used for the sole purpose of the research and will be confidential.

Should you be selected to participate in the second phase of the research, you will be required to log onto a chat room. You will be asked to chat to the other students, with the aim of meeting new people. You will be asked to chat for a 1 hour chat session and will be awarded 2 SRPP points.

### **Alternatives**

You may withdraw from the study at any time. However, if you decide to do so, you will not receive any SRPP points.

### **Risks**

There are no known risks from your participation. There is no cost to you except for your time and commitment to the study. Should you feel concerned or feel the need for any

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emotional support or debrief after completing the survey, a list of helpful resources will be available at the end of the questionnaires. The research

### **Benefits**

You will be compensated for your participation by receiving all the SRPP points that you require for the year. In addition you will gain hands on experience in participating in research.

### **Confidentiality and Anonymity**

We have asked for your name, student number and contact details so that we can assign you your SRPP points. Your name and contact details will not be shared with anyone other than the researchers and will not be used in any reports that result from this project.

### **Questions**

If you have any questions or concerns about the study, please feel free to email the principal researcher at: [pedro.wolf@uct.ac.za](mailto:pedro.wolf@uct.ac.za)

By clicking on the "SUBMIT" button below and proceeding in these surveys, you are giving your consent to participate in this study and giving permission for the researchers to use your anonymous data for research purposes.

Thank you for your participation,  
Social Media Research Team

**Appendix C: Participant Consent Form**

**Participant Consent:**

Please read the information below carefully regarding informed consent to participate in this study. At the end, please select whether or not you give your consent to participate.

Thank you!

Dear Participant,

We are conducting research on the potential links between depression, self-esteem, narcissism and life history strategy on Facebook and chat room behaviour. Please complete the questionnaires below, which shouldn't take you more than 30 or 45 minutes to complete. Your responses will be kept completely confidential so please reply as honestly as possible.

There are no right or wrong answers, so please respond honestly. You are first required to fill out some demographic information. Please note that we need your correct student number in order to award you course credit. All personal information will be kept separate from your survey responses, so that those survey responses remain completely confidential.

You will also be asked on the final page of the questionnaire if you would like to participate further, in the second phase of the research. If you respond YES, we require you to provide us with your name and contact details. These details will be used for the sole purpose of the research and will be confidential.

Should you be selected to participate in the second phase of the research, you will required to log onto a chat room. You will be asked to chat to the other students, with the aim of meeting new people. You will be asked to chat for a 1 hour chat session and will be awarded 2 SRPP points.

I have read and understood the above:

I agree to participate

I do not agree to participate

Should you agree:

I understand that my participation is voluntary and that I may stop the survey at any time.

I know that all the information I provide will be kept anonymous and confidential.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Student Number: \_\_\_\_\_

What is the course code you would like your SRPP points to be allocated to? \_\_\_\_\_

**Participant Consent for Phase 2 of Research:**

(to be completed after the survey questionnaires)

Would you like to participate in the chat room (Phase 2 of the study)?

Yes

No

If you would like to participate in the second phase of the study, please provide us with the following contact details.

Please ensure these details are correct, so that we may contact you if you are selected.

These details will be kept confidential; they will only be used for the purposes of the current research study, and will not be shared with anyone outside of the research team.

Name: \_\_\_\_\_

Cell Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

**Appendix D: Beck Depression Inventory**

**Beck Depression Inventory II (BDI II):**

Choose the one statement, from among the group of four statements in each question that best describes how you have been feeling during the past few days. Circle the number beside your choice.

1	0 I do not feel bad. 1 I feel sad. 2 I am sad all the time and I can't snap out of it. 3 I am so sad or unhappy that I cannot stand it.
2	0 I am not particularly discouraged about the future. 1 I feel discouraged about the future. 2 I feel I have nothing to look forward to. 3 I feel that the future is hopeless and that things cannot improve.
3	0 I do not feel like a failure. 1 I feel I have failed more than the average person. 2 As I look back on my life, all I can see is a lot of failure. 3 I feel I am a complete failure as a person.
4	0 I get as much satisfaction out of things as I used to. 1 I don't enjoy things the way I used to. 2 I don't get any real satisfaction out of anything anymore. 3 I am dissatisfied or bored with everything.
5	0 I don't feel particularly guilty. 1 I feel guilty a good part of the time. 2 I feel guilty most of the time. 3 I feel guilty all of the time.
6	0 I don't feel that I am being punished. 1 I feel I may be punished. 2 I expect to be punished. 3 I feel I am being punished.
7	0 I don't feel disappointed in myself. 1 I am disappointed in myself. 2 I am disgusted with myself. 3 I hate myself.
8	0 I don't feel I am worse than anybody else. 1 I am critical of myself for my weaknesses or mistakes. 2 I blame myself all the time for faults. 3 I blame myself for everything bad that happens.
9	0 I don't have any thoughts of killing myself. 1 I have thoughts of killing myself but I would not carry them out. 2 I would like to kill myself. 3 I would kill myself if I had the chance.
10	0 I don't cry anymore than usual. 1 I cry more now than I used to. 2 I cry all the time now. 3 I would kill myself if I had the chance.
11	0 I am not more irritated by things than I ever am. 1 I am slightly more irritated now than usual. 2 I am quite annoyed or irritated a good deal of the time. 3 I feel irritated all the time now.

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12	<p>0 I have not lost interest in other people.</p> <p>1 I am less interested in other people than I used to be.</p> <p>2 I have lost most of my interest in other people.</p> <p>3 I have lost all my interest in other people.</p>
13	<p>0 I make decisions about as well as I ever could.</p> <p>1 I put off making decisions more than I used to.</p> <p>2 I have a greater difficulty in making decisions than before.</p> <p>3 I can't make decisions at all anymore.</p>
14	<p>0 I don't feel I look any worse than I used to.</p> <p>1 I am worried that I am looking old or unattractive.</p> <p>2 I feel that there are permanent changes in my appearance that make me look unattractive.</p> <p>3 I believe that I look ugly.</p>
15	<p>0 I can work about as well as before.</p> <p>1 It takes an extra effort to get started at doing something.</p> <p>2 I have to push myself very hard to do anything.</p> <p>3 I can't do any work at all.</p>
16	<p>0 I can sleep as well as usual.</p> <p>1 I don't sleep as well as I used to.</p> <p>2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.</p> <p>3 I wake up several hours earlier than I used to and cannot get back to sleep.</p>
17	<p>0 I don't get more tired than usual.</p> <p>1 I get tired more easily than I used to.</p> <p>2 I get tired from doing almost anything.</p> <p>3 I am too tired to do anything.</p>
18	<p>0 My appetite is no worse than usual.</p> <p>1 My appetite is not as good as it used to be.</p> <p>2 My appetite is much worse now.</p> <p>3 I have no appetite at all anymore.</p>
19	<p>0 I haven't lost much weight, if any, lately.</p> <p>1 I have lost more than five pounds.</p> <p>2 I have lost more than ten pounds.</p> <p>3 I have lost more than fifteen pounds trying to lose weight.</p> <p><i>Score 0 if you have been purposely trying to lose weight.</i></p>
20	<p>0 I am no more worried about my health than usual.</p> <p>1 I am worried about my physical problems such as aches and pains or upset stomach.</p> <p>2 I am very worried about physical problems and it's hard to think of much else.</p> <p>3 I am so worried about my physical problems that I cannot think about anything else.</p>
21	<p>0 I have not noticed any recent change in my interest in sex.</p> <p>1 I am less interested in sex.</p> <p>2 I am much less interested in sex.</p> <p>3 I have lost interest in sex completely.</p>



**Appendix E: CES-D Depression Inventory****Centre for Epidemiologic Studies Depression Scale (CES-D):**

Instruction: Circle the number of each statement which best describes how often you felt or behaved this way – DURING THE PAST WEEK.

	<b>Rarely or none of the time (less than 1 day)</b>	<b>Some or a little of the time (1-2 days)</b>	<b>Occasionally or a moderate amount of the time (3-4 days)</b>	<b>Most or all of the time (5-7 days)</b>
During the past week:	0	1	2	3
1) I was bothered by things that usually don't bother me	0	1	2	3
2) I did not feel like eating; my appetite was poor	0	1	2	3
3) I felt that I could not shake off the blues even with help from my family and friends	0	1	2	3
4) I felt that I was just as good as other people	0	1	2	3
5) I had trouble keeping my mind on what I was doing	0	1	2	3
6) I felt depressed	0	1	2	3
7) I felt that everything I did was an effort	0	1	2	3
8) I felt hopeful about the future	0	1	2	3
9) I thought my life had been a failure	0	1	2	3
10) I felt fearful	0	1	2	3
11) My sleep was restless	0	1	2	3
12) I was happy	0	1	2	3
13) I talked less than usual	0	1	2	3
14) I felt lonely	0	1	2	3
15) People were unfriendly	0	1	2	3

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16) I enjoyed life	0	1	2	3
17) I had crying spells	0	1	2	3
18) I felt sad	0	1	2	3
19) I felt that people disliked me	0	1	2	3
20) I could not get "going"	0	1	2	3

**Appendix F: Narcissism Personality Inventory**

**Narcissism Personality Inventory 16 (NPI 16):**

Read each pair of statements below and place an “X” by the one that comes closest to describing your feelings and beliefs about yourself. You may feel that neither statement describes you well, but pick the one that comes closest. **Please complete all pairs.**

1.   \_\_\_    I really like to be the center of attention  
      \_\_\_    It makes me uncomfortable to be the center of attention
2.   \_\_\_    I am no better or no worse than most people  
      \_\_\_    I think I am a special person
3.   \_\_\_    Everybody likes to hear my stories  
      \_\_\_    Sometimes I tell good stories
4.   \_\_\_    I usually get the respect that I deserve  
      \_\_\_    I insist upon getting the respect that is due me
5.   \_\_\_    I don't mind following orders  
      \_\_\_    I like having authority over people
6.   \_\_\_    I am going to be a great person  
      \_\_\_    I hope I am going to be successful
7.   \_\_\_    People sometimes believe what I tell them  
      \_\_\_    I can make anybody believe anything I want them to
8.   \_\_\_    I expect a great deal from other people  
      \_\_\_    I like to do things for other people
9.   \_\_\_    I like to be the center of attention  
      \_\_\_    I prefer to blend in with the crowd
10.  \_\_\_    I am much like everybody else  
      \_\_\_    I am an extraordinary person
11.  \_\_\_    I always know what I am doing  
      \_\_\_    Sometimes I am not sure of what I am doing
12.  \_\_\_    I don't like it when I find myself manipulating people  
      \_\_\_    I find it easy to manipulate people
13.  \_\_\_    Being an authority doesn't mean that much to me  
      \_\_\_    People always seem to recognize my authority
14.  \_\_\_    I know that I am good because everybody keeps telling me so  
      \_\_\_    When people compliment me I sometimes get embarrassed
15.  \_\_\_    I try not to be a show off  
      \_\_\_    I am apt to show off if I get the chance
16.  \_\_\_    I am more capable than other people  
      \_\_\_    There is a lot that I can learn from other people

**Appendix G: Rosenberg Self-Esteem Scale**

**Rosenberg Self-Esteem Scale (RSES):**

Please record the appropriate answer for each item, depending on whether you Strongly agree, agree, disagree, or strongly disagree with it.

- 1 = Strongly agree
- 2 = Agree
- 3 = Disagree
- 4 = Strongly disagree

- \_\_\_\_\_ 1. On the whole, I am satisfied with myself.
- \_\_\_\_\_ 2. At times I think I am no good at all.
- \_\_\_\_\_ 3. I feel that I have a number of good qualities.
- \_\_\_\_\_ 4. I am able to do things as well as most other people.
- \_\_\_\_\_ 5. I feel I do not have much to be proud of.
- \_\_\_\_\_ 6. I certainly feel useless at times.
- \_\_\_\_\_ 7. I feel that I'm a person of worth.
- \_\_\_\_\_ 8. I wish I could have more respect for myself.
- \_\_\_\_\_ 9. All in all, I am inclined to think that I am a failure.
- \_\_\_\_\_ 10. I take a positive attitude toward myself.