An Investigation into the Relationship between Implicit

Narcissism and Problematic Social Media Use

Annika Hegarty

x16492076

BA (Honours) Psychology

National College of Ireland   2019

Submission of Thesis to Norma Smurfit Library, National College of Ireland

Student name: _Annika Hegarty__ Student number: _x16492076_____

School: _Business_____ Course: __BAHPSYCH_____

Degree to be awarded: ___Honours Bachelor's degree in Psychology_____

Title of Thesis: _Investigating the relationship between Implicit Narcissism and Problematic Social Media Use____

One hard bound copy of your thesis will be lodged in the Norma Smurfit Library and will be

available for consultation. The electronic copy will be accessible in TRAP (http://trap.ncirl.ie/),

the National College of Ireland's Institutional Repository. In accordance with normal academic

library practice all these lodged in the National College of Ireland Institutional Repository

(TRAP) are made available on open access.

I agree to a hard-bound copy of my thesis being available for consultation in the library. I also agree to an electronic copy of my thesis being made publicly available on the National College of Ireland's Institutional Repository TRAP.

Signature of Candidate: __Annika Hegarty___

For completion by the School:
The aforementioned thesis was received by_____
Date:_____

This signed form must be appended to all hard bound and electronic copies of your thesis submitted to your school

Submission of Thesis and Dissertation

National College of Ireland
Research Students Declaration Form
(Thesis/Author Declaration Form)

Name: ___Annika Hearty_____

Student Number: _x16492076_

Degree for which thesis is submitted:

___BAHPSYCH_____

Material submitted for award

(a) I declare that the work has been composed by myself.

(b) I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged.

(c) My thesis will be included in electronic format in the College Institutional Repository TRAP (thesis reports and projects)

(d) *Either* *I declare that no material contained in the thesis has been used in any other submission for an academic award.

Or *I declare that the following material contained in the thesis formed part of a submission for the award of

_____

(State the award and the awarding body and list the material below)

Signature of research student: _____

Date: _____

Acknowledgments

Abstract

Objective: This study aimed to investigate the relationship between Implicit Narcissism (IM) and Problematic Social Media use (PSMU) in an attempt to bridge the gap in current literature; the researcher also aimed to gain an understanding of the relationship when demographic variables were accounted for. **Methodology:** Implicit narcissism was measured using the Hypersensitive Narcissism Scale (HSNS), the second scale utilised was the Social Media Disorder Scale (SMD). Both scales have been examined and rated highly for internal reliability and validity. **Results:** A strong positive significant relationship was found between Implicit Narcissism and Problematic Social Media Use; this relationship was still present following a linear multiple regression accounting for demographic factors such as age and gender. **Conclusion:** The results show that implicit narcissism is positively associated with problematic social media use, however further research is needed to determine causation and explore the possibility of confounding variables.

Table of Contents

Introduction

1.1 Social media use and misuse

Social media use has become an ever-increasing force in modern society over the last decade (Andreassan, Pallesen, & Griffiths, 2017; Kuss & Griffiths, 2011). This is not surprising as our desire to communicate is innate, the need to express one's emotions, thoughts and experiences is prevalent from a very young age (Lee, 2017) and is a key aspect of human interaction. Social media applications (WhatsApp, Messenger, Facebook, Snapchat, Instagram etc.) provide an additional avenue for communication, increasing the on-line availability of people (Lee, 2017). The number of internet users increased 7% from 2017 to 2018 with over 4 billion people actively using the internet. Social media users account for 3 billion of those people. This figure has increased 13% since 2017. There are over 5 billion unique mobile users recorded every month with Irish users spending on average over 5 hours per day online. With over half of the global population online it is important and potentially interesting to investigate the motivation for behaviours exhibited online, the influence social media platforms can exert on their users and for a person choosing to have an online presence. This global online presence merits the recognition of the positive effects of social media such as the development of relationships with individuals that wouldn't have been met otherwise, sharing information with an individual or large audience at the touch of a button. When used appropriately social media sites can and do have the power to unite the global community on important or controversial issues (Andreassan, Pallesen, & Griffiths, 2017). It can have the ability to effect global change.

Despite, the numerous positive aspects of social media use, there are several flaws. There are several negative effects of this new form of communication (Andreassan, Pallesen, & Griffiths, 2017; Lee, 2017). The most prominent in current literature and the one that has

garnered the most interest across all fields is excessive social media use or social media addiction (Andreassan, Pallesen, & Griffiths, 2017). The misuse of social media is a growing concern for the youth of today in particular, but it is not limited to this age group. Andreassan and Pallesen (2014) defined the problematic use of social media as usage that hinders social and occupational functioning of the person. It is accompanied by strong unmanageable urges to check social media platforms (Andreassan & Pallesen, 2014). In order for social media use to be be defined as excessive or problematic it must reach a level that negatively impacts other aspects of the individual's life (Lee, 2017).

Problematic social media use has now been observed on a global scale. There are several factors that can influence an individual's predisposition toward problematic social media use. These are gender, age, marital status and self-esteem. Firstly, gender has been shown to play a significant role in the prediction of problematic social media use (Andreassan et al., 2013). A number of recent publications have shown that there is a higher prevalence of excessive social media use in women (Andreassan, Pallesen, & Griffiths, 2017;). A second risk factor for engaging in this type of behaviour is age. In general, younger people are more likely to engage with social media, and consequently are at a higher risk of engaging in problematic social media use (Prensky, 2001). This may be due to the fact that younger people are much more accustomed to and comfortable with the use of technology in daily life (Prensky, 2001). As a result, individuals do not realise that their social media habits and behaviours are not moving outside the realm of normal. Interestingly, younger age groups are not the only population at risk, a significant increase in the problematic use of social media has also been seen in those aged over 50 (Lee, 2017). The risk to both groups may stem from the experience to express themselves, and discover their personality, mentality and identity online without any fear of criticism (Andreassan, Pallesen, & Griffiths, 2017: Mazzoni & Iannone, 2014).

Thirdly, marital status is also an influential factor in the prediction of problematic social media use. It has been reported that individuals in a personal relationship are less likely to overuse social media sites (Andreassan, Pallesen, & Griffiths, 2017), a factor influencing this predictor could be that many people use social media as a tool to initiate a conversation with individuals they hold a romantic interest for. Self-perception seems to play a large role in the excessive use of social media (Andreassan, Pallesen, & Griffiths, 2017; Forest & Wood, 2012). Individuals with reportedly low self-esteem found that social media websites can provide a secure, non-threatening environment within which they can express themselves with more confidence in comparison to fact-to-face interactions (Andreassan, Pallesen, & Griffiths, 2017; Lenhart et al., 2010). Finally, and most relevant for this study, personality traits particularly narcissism increase the likelihood of problematic social media use, the literature is light, and there are few studies can determine causation. Despite the sparse literature, there does appear to be a correlation (Casale, Fioravanti, & Rugai, 2016). Andreassan, Pallesen and Griffiths (2017) found that as the levels of social media use increase, and problematic social media use becomes more prevalent so do the levels of narcissism exhibited by society. These findings are widely supported. (Andreassan, Pallesen, & Griffiths, 2017; Lee, 2017; Gnambs & Appel, 2018; Paramboukis, Skues, & Wise, 2016).

1.2 Narcissism

For the purpose of this study narcissism will be discussed in terms of a personality trait. Narcissism is a common non-clinical personality trait observed throughout the population. There are largely inconsistent findings and a serious dichotomy within the literature in terms of its development; some researchers believe it develops as a by-product of personal trauma (Maciantowicz & Zajenkowski, 2018). Trait narcissism is characterised by a grandiose self-concept, a sense of entitlement and a disregard for others (McCain & Campbell, 2016). McCain and Campbell reported that narcissism is highly correlated with a

desire for self-enhancement, this is a consistent and widely supported finding within the literature (Paramboukis, Skues, & Wise, 2016). Individuals that score highly on narcissistic scales (narcissists) maintain an exaggerated sense of self, perceive themselves to be more attractive, and to have above average capabilities particularly in terms of competence-based tasks (McCain & Campbell, 2016; Paramboukis, Skues, & Wise, 2016). This exaggerated self-image does not align with reality. When narcissists become aware of the conflict between their ideal sense of self and their current reality they experience a state of cognitive dissonance (Paramboukis, Skues, & Wise, 2016; Morf & Rhodewalt, 2001). This dissonance is disturbing for narcissistic individuals (McCain & Campbell, 2016), in order to prevent the dissonance and to maintain their superior self-image narcissists employ certain manipulation techniques and will engage in behaviours orchestrated to elicit the desired praise and affirmation required to satisfy their exaggerated self-perception (Maciantowicz & Zajenkowski, 2018). These behaviours include interpersonal strategies such as bragging, it is also common for narcissists to associate themselves with individuals that maintain a high social status (McCain & Campbell, 2016; Maccoby 2000 Rhodewalt & Morf, 1998). Even though, there is a negative attitude observed toward narcissistic behaviour some research suggests that it has been associated with positive psychological outcomes; however, this is dependent on the manifestation (Maciantowicz & Zajenkowski, 2018).

There are two forms of trait narcissism; explicit and implicit (McCain & Campbell, 2016). It is important to outline this division as each sub-form is characterised by different behaviours both on and off social media. Explicit narcissism has been extensively investigated with an extensive body of literature dedicated to this sub-type (McCain & Campbell, 2016). McCain and Campbell defined explicit narcissism as an extroverted, impenitent form of narcissism consisting of high self-esteem, extravagant self-relevant fantasies, manipulation, sense of superior importance and a need for recognition or

admiration (Maciantowicz & Zajenkowski, 2018). Explicit narcissists will regularly engage in exhibitionism; this is the purposeful conducting of extreme behaviours devised to attract attention and elicit the desired response from their audience (Paramboukis, Skues, & Wise, 2016). This subdivision of narcissism is positively correlated with extraversion and positive affect (Maciantowicz & Zajenkowski, 2018) such that those scoring highly for explicit narcissism reported a higher sense of wellbeing. They also reported lower experiences of negative emotive states such as sadness, loneliness, anxiety and depression (Maciantowicz & Zajenkowski, 2018). The existing knowledge is completely dominated by research focusing on explicit narcissism, subsequently the current literature on implicit narcissism is sparse with inconsistent mixed findings.

Implicit narcissism is defined as a more introverted, neurotic subdivision (Maciantowicz & Zajenkowski, 2018) that has garnered very little interest in terms of research. Similar to explicit narcissism, it is conceptualised by a need for praise, admiration and affirmation accompanied by negative emotive states such as feelings of inadequacy, helplessness, hypersensitivity and a heightened vigilance towards situations that are conducive to negative outcomes (Miller et al, 2011). Some of the existing research has also revealed that the intense self-focus inherently present in implicit narcissism exists amongst hostile and defensive attitudes (Maciantowicz & Zajenkowski, 2018).

1.3 Social media use and narcissism

The manifestation and emotive states that accompany these two subcategories of narcissism vary significantly in terms of their influence on behaviour and interactions (McCain & Campbell, 2016). This is particularly relevant for online behaviour and social media activity; explicit narcissists engage in very specific actions whilst online that significantly differ in comparison to implicit narcissists. Explicit narcissists utilise

exhibitionist and obvious actions in order to obtain the reaction, affirmation and praise desired, this results in this sub-category of narcissists uploading significantly more self-generated content in comparison to implicit narcissism (Paramboukis, Skues & Wise, 2016; Kramer & Winter, 2008).

Implicit narcissism maintains the desire for praise and individuals in this category seek out affirmative interactions, validation and praise. They do not engage in exhibitionism tactics and the majority of the content uploaded or shared online is not self-related or generated (Paramboukis, Skues, & Wise, 2016: Maciantowicz & Zajenkowski, 2018). There is also a substantial difference in how both categories react to negative commentary. Explicit narcissists show indifference in response to negative feedback, in contrast implicit narcissists will react with aggression; (Paramboukis, Skues, & Wise, 2016) their reactive anger can result in the removal of both the post and the individual responsible for the negative interaction.

These differences in online behaviour are worth noting as social media platforms now form an aspect of communication. (McCain & Campbell; Paramboukis, Skues & Wise, 2016). The exponential growth of social media use drives the need to understand why people engage in certain behaviours online, the impact of these actions and how the individuals using social media and technology are shaping the world. There are three main models discussed in current literature. They were developed to help predict the increase in social media use for narcissistic individuals (Maciantowicz & Zajenkowski, 2018). The first model is the fit model; this model developed from the idea that social media websites facilitate superficial and insubstantial associations and relationships (McCain & Campbell, 2016). This is suited to the values of a narcissistic individual. Narcissists are known for developing inconsequential friendships and relationships, they generally seek out individuals that will reinforce their claim of a high social status (McCain & Campbell, 2016). These shallow

relationships allow narcissists to associate with individuals of importance as well as

maintaining a dominant role and exerting social influence (Maciantowicz & Zajenkowski,

2018). The second model is the trait model of narcissism. This model proposes that the link

between narcissism and an increased internet presence may be a result of the higher level of

extraversion observed in narcissists. Asserting that the social media use is a result of their

overall personality (McCain & Campbell, 2016). Extroverted individuals usually maintain a

larger following, generate more self-related content and have a more significant presence on

social media (Pollet, Roberts, & Dunbar, 2011).

The third model is most relevant for this study, Buffardi (2011) proposed the self-

enhancement model. This model conceptualises the idea that certain social media websites

can be utilised to aid self-promotion and enhancement (McCain & Campbell, 2016). The

basis of social media websites is to connect people through communication and allowing

people to share aspects of daily life. Some existing sites can be viewed as an area to easily

disseminate self-related content to increasingly large audiences (Paramboukis, Skues, &

Wise, 2016). The fact that these sites can be manipulated allowing an individual to create and

broadcast a particular version or image of themselves is attractive to narcissists. It can be

used to fulfil their self-enhancement needs (Maciantowicz & Zajenkowski, 2018). Simply, it

allows them to sustain their ideal self-perception narcissistic individuals need to implement

interpersonal strategies to obtain the adoration, affirmation and positive feedback they crave

from their environment and according to this model, social media produced the perfect

platform for this behaviour (McCain & Campbell, 2016). Once immersed in this environment

it is very difficult for the narcissist to remove themselves from this arena as it is conducive of

the admiration and praise they require to preserve their inflated sense of self (Maciantowicz

& Zajenkowski, 2018). Furthermore, the unmitigated approach model (Campbell et al., 2006)

contributes to this idea in terms of explicit narcissism. Individuals who score higher on

explicit narcissism scales tend to be motivated by reward and place much more emphasis on the prospective of the reward they may receive (Campbell et al., 2006), and consequently they are attracted to social interactions (McCain & Campbell, 2016).

In contrast, implicit narcissism is strongly linked to low levels of agreeableness and neuroticism (Maciantowicz & Zajenkowski, 2018). This combination of traits usually displays feelings of anxiety in terms of exhibitionist social media use (Paramboukis, Skues, & wise, 2016; McCain & Campbell, 2016). In addition, implicit narcissism is also associated with introversion and avoidance motivation. As a result, narcissists that fit this subcategory are inherently more vigilant and guarded in their pursuit for praise (Maciantowicz & Zajenkowski, 2018). Subsequently, their efforts revolve around impressions. For example, they tend to invest more time taking photographs, cropping and editing them then grandiose narcissists (McCain & Campbell, 2016). They also generate less self-relevant content (Paramboukis, Skues, & Wise, 2016). Although these theories showcase the differences between both subdivisions in both the manifestation and expression of narcissism the need for affirmation and positive acclaim is still a crucial aspect of their personality. Therefore, theoretically, the complete power over and manipulation of all content posted in conjunction with the ease of reaching thousands of people with just one platform would attract narcissistic personalities. Moreover, this attraction has led to both explicit and implicit narcissists being entranced by the approval, admiration and validation that social media can offer.

1.4 The current study

1.4.1 Rationale

The law of effect, otherwise known as the principle of reinforcement, is hinged on the idea of reinforcement. Such that when behaviours are followed by a positive reinforcer the likelihood of future engagement in that behaviour is increased (Pierce & Cheney, 2013). The

positive feedback and interaction experienced on social media (Paramboukis, Skues, & Wise, 2016) such as affirmation, appreciation and praise would satisfy the individuals perceived self-concept, this would act as the positive reinforcer. This positive reinforcement combined with the self enhancement model in relation to social media proposed by Buffardi and colleagues (2011) would provide a theoretical basis for the suggestion that those with higher levels of trait narcissism would be at higher risk of excessive or problematic social media use.

The existing literature discussing implicit narcissism in terms of social media use is scarce with mixed and inconclusive results (McCain & Campbell, 2016; Paramboukis, Skues, & Wise, 2016). The positive acclaim, adoration and affirmation offered by social media through visible, recordable structures such as likes, comments and friends act as a reinforcer for any behaviour conducted online. This reinforcement combined with the self-enhancement model (Buffardi et al., 2011) provides a theoretical basis for the hypothesis of this study. This study will focus specifically on implicit narcissism in an attempt to minimise the gap within the literature, many of the studies previously conducted highlight this area as lacking in empirical examination and in need of further investigation (McCain & Campbell, 2016; Paramboukis, Skues, &Wise, 2016; Pierce & Cheney, 2013).

1.4.2 Aims

The aim of this study is to aid in defining the relationship between implicit narcissism and social media use. This will be done by firstly, determining the direction and strength of the relationship between implicit narcissism and problematic social media use. Secondly, to identify the influence of demographic factors such as gender and age on levels of implicit narcissism. And finally, this study will examine the strength of the relationship when controlling for the demographic variables.

1.4.3 Hypotheses

(i) The first hypothesis investigated is that individuals with higher levels of implicit narcissism are at a greater risk of engaging in problematic social media use.

(ii) The second is that this relationship will be present when controlling for extraneous variables such as age and gender.

Method

2.1 Participants

The sample for the current study were female and male social media users recruited via an online survey ($N = 86$). As can be seen in Table 1, the sample recruited for this study was female dominant in terms of participants. The respondents age ranged from 18 to 35 (M: 22; SD: 3.70). The only exclusion criteria for this study was that all participants must be over the age of 18.

2.2 Materials

The survey published was broken down into two sections respective of the two scales used to measure implicit narcissism and social media disorder. The first section consisted of the hypersensitive narcissism scale (HSNS) (Hendrin & Cheek, 1997). Developed from the 40-item narcissistic personality inventory created by Raskin & Terry (1988). The HSNS is a 10 – item scale focusing on the implicit narcissism traits explored in the NPI (See Appendix A). The 10-items are statements that relate to personal preferences. A participant will be given a 5-item Likert scale to respond on. This scale ranges from strongly characteristic (1) to strongly uncharacteristic (5). This scale has been proven to be both internally and externally reliable and to maintain strong validity (Arble, 2008: Forssatti et al., 2009; Hendrin & Cheek, 1997).

The second section is comprised of the second scale used in this study; the social media disorder scale (Van den Eijenden, Lemmens & Valkberg, 2016) (See Appendix B). The Social Media Disorder (SMD) scale is a 9-item scale developed from the DSM-5 conditions for IGD. Van den Eijenden and colleagues initially developed a 27-item scale, with three items for each criterion included in the DSM-5. This was then condensed down to include the nine highest scoring items during a factor analysis. It was developed to include a

well-defined diagnostic limit for differentiating between those with disordered use and highly engaged non-disordered social media use. This scale has been peer-reviewed and tested to reveal it is a sound measure; showing great structural validity, test and retest reliability and specificity (Van den Eijnden, Lemmens & Valkberg, 2016; Savci, Ercengiz & Aysan, 2018).

Two demographic questions were also asked; each participant was asked to provide their age and gender. The age question was an empty answer box in which participants types their age, and the question for gender gave a choice between two options Male or Female. (Appendix C)

2.3 Design and data analysis

A cross-sectional, within participant's design was implemented for this study, the two variables examined were implicit narcissism and problematic social media use. As this is a correlation study in the first hypothesis the criterion variable was problematic social media use and the predictor variable was implicit narcissism, and in the second the predictor variables were gender age and implicit narcissism and the criterion was problematic social media use.

This is a quantitative piece of research, therefore descriptive statistics, a Pearson correlation and a linear multiple regression were conducted using the IBM Statistics SPSS 24 software. Descriptives statistics were performed to determine the normality of the sample and the general demographic of the population. The Pearson-product moment correlation was used to examine (i) hypothesis 1 it determined the strength, direction (positive or negative) and significance of the relationship between implicit narcissism and problematic social media use. To test (ii) hypothesis 2, a standard or linear multiple regression was conducted; it was employed to examine the degree to which implicit narcissism can predict problematic social media use when demographic variables had been accounted for.

2.4 Procedure

2.4.1 Ethical considerations

The prospect of physical, emotional or mental risks arising from participation in this study were extremely small. There are no known stressors associated with the variables being examined, additionally the study did not target vulnerable populations. Despite this, individuals were being asked to report the socially undesirable traits of narcissism and problematic social media use. Due to the potential stigma associated with will these variables participants were made aware of their right to anonymity, voluntary participation and withdrawal.

2.4.2 Procedure followed in current study

An online survey was created using Google forms consisting of a consent and information sheet (See Appendix D), the HSNS scale, the SMD scale and a debriefing sheet, respectively. A pilot study was conducted on two individuals one male and one female, to ensure that the study was clear, concise, easy to understand and to ensure all aspects of the survey were working correctly. Following the pilot study, the title /of the survey was modified from "Narcissism and Social media use" to "Personality and Social media use". This correction was made due to the potential influence of the aforementioned social desirability factor. Participants were made aware in both the description and instructions above the HSNS scale and in the debrief sheet (Appendix E) that this study investigated implicit narcissism and social media use.

From January 2019 to February 2019 the survey link was uploaded to the social media platforms Facebook, Instagram and Snapchat. This link was publicised as a thesis survey and that all those interested were invited to complete it. The link brought all participants to an information page through which the nature of the study was explained, an informed consent

page was also included in the first page of the survey, for each participant to continue with the survey they were required to acknowledge the fact that they understood their rights, the study itself and that they were over the age of 18. All participants were ensured that their anonymity was a priority and would be maintained as no identifiable information would be collected and that all information would be stored safely and reviewed at the researcher's discretion.

The surveys were short and relatively quick to complete however each participant was given an unlimited timeframe in which to complete the scales. From here the participants were required to answer all questions that appeared on both surveys. This was enforced as participants could not proceed to the next section without completing all questions. Once the survey was completed the participants were presented with a debrief sheet which outlined the researcher's gratitude and institute contact information was provided for the relevant parties should the participant have any further questions in regard to the study. The relevant helplines were also included should they be required. This data was originally collected via google docs, but it was later transferred to an excel file that was password protected.

Results

3.1 Categorical descriptive statistics

Descriptive statistics conducted on each of the categorical variables demonstrate the sample as being mainly female (70%). The total scores for problematic social media use indicate 12 as the most common total score; a score of above 14 is indicative of problematic social media use. (Appendix F)

Table 1.Frequencies for the current sample on each categorical variable ($N = 86$)

Variable	Frequency	Valid Percentage
Gender		
Male	26	30.2
Female	50	69.8
Total SMD score		
9	9	10.5
10	13	15.1
11	13	15.1
12	19	22.1
13	11	12.8
14	4	4.7
15	7	8.1
16	2	2.3

17	5	5.8
18	3	3.5

3.2 Continuous descriptive Statistics

Descriptive statistics for each of the all continuous variables in the current study are presented in Table 2. Data normality was assessed, and an examination of the histograms indicated that implicit narcissism approximated normality, in addition implicit narcissism maintained a Kolmogrov-Smirnov score of .200 (Appendix G). Despite the small sample size, the relatively low standard error values, and close 95% confidence intervals suggest the sample demonstrates a normal distribution. Following an evaluation of the Q-Q plots and boxplot it was concluded that there were no extreme outliers. This resulted in the current sample being deemed as reasonably representative of the general population.

Table 2. Descriptive statistics of all continuous variables (N = 86)

	Mean (95% Confidence Intervals)	Std. Error Mean	Median	SD	Range
Age	21.85 (21.06 – 22.64)	.40	21	3.70	18-35
Implicit Narcissism	29.23 (27.80 – 30.66)	.72	30	6.68	10-50

3.3 Inferential Statistics

3.3.1 Correlational analysis for hypothesis 1.

The relationship between implicit narcissism and social media use was investigated using the Pearson product-moment correlation coefficient. Before the analysis was

conducted, preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a moderate to large, positive correlation between the two variables (r = .48 [95% CI = .27 - .64], n = 86, p < .001) (See Table 3). This result indicates that the two variables share approximately 23% of variance in common (See Appendix H). The results indicate that higher levels of implicit narcissism are associated with greater social media use.

The correlations between the predictor variables were also assessed with r values ranging from r = -.02 to r = .48. (Appendix H). These results indicate that there was no violation of the assumption of multicollinearity and that the data was suitable for examination through multiple linear regression analysis.

Table 3 Pearson Product-moment Correlations between all continuous variables.

Variables	1	2	3	4
1. Implicit Narcissism	1			
2. Problematic Social media use	.48*	1		
3. Age	-.02	-.17	1	
4. Gender	.02	.18	.10	1

Note. Statistical significance: *$p < .001$

3.3.2. Multiple Regression to assess hypothesis 2

A multiple regression analysis was conducted to determine how well problematic social media use could be explained by three variables including gender, age, and implicit narcissism. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Both VIF and Tolerance values exhibit no

violation of multicollinearity. The Normal P-P plot displays a straight diagonal line further guaranteeing normality and linearity (Appendix I). Moreover, the scatterplot demonstrates the majority of scores clustered at the centre and all scores are within 3 standard deviations of the centre. The correlations between the predictor variables and the criterion variable included in the study were examined (see Table 4). One of the three predictor variables were significantly correlated with the criterion variable. The correlations ranged from r = -.18 (age) to r = .47 (implicit narcissism).

Since no a priori hypotheses had been made to determine the order of entry for the predictor variables, a direct method was used for the analysis. The three predictor variables explained 29.9% of variance in social media use levels (F(3, 82) = 11.25, p < .001). One of the three variables were found to uniquely predict social media use to a statistically significantly level: implicit narcissism (β = .47, p < .001), (see Table 4 for full details).

Table 4. Multiple regression model predicting social media scores.

	R^2	Adj R^2	β	B	SE	CI 95% (B)
Model	.29***					
Implicit Narcissism			.47***	.17	.03	.10 / .24
Age			-.18	-.12	.06	-24. / .002
Gender			.19	.96	.49	-.006 / 1.93

Note. R^2 = R-squared; Ajd R^2 = Adjusted R-squared; β = standardized beta value; B = unstandardized beta value; SE = Standard errors of B; CI 95% (B) = 95% confidence interval for B; N = 398; Statistical significance: *p < .05; **p < .01; ***p < .001

Discussion

The presence and influence of social media has garnered much interest since its introduction to society, particularly in scientific research, with many studies investigating the effect of social media use on society. An area that has only recently been reviewed as a topic of interest is the individual differences in the use of social media and the internet. A region that has gained much attention in the past decade is the influence of narcissism on social media use. This research is primarily focused on explicit narcissism. A gap in the literature was acknowledged in regard to the study of implicit narcissism. The present study was conducted to address the gap in the literature. The hypothesis and aims of this study were supported and achieved, the findings of this study are consolidated by current literature.

4.1 Summary of current study results

The first hypothesis was supported, with a correlational analysis demonstrating a strong significant relationship between implicit narcissism and problematic social media use. These results illustrate a positive relationship; reporting that higher levels of implicit narcissism are associated with a greater likelihood of engaging in problematic social media use. The Pearson correlation analysis displayed a moderate level of variance was shared between implicit narcissism and social media use. These results are consistent with current literature (McCain & Campbell, 2016; Maciantowicz & Zajenkowski, 2018).

The second hypothesis estimated that the above relationship would be significant when the demographic factors gender and age were accounted for. This hypothesis was also proven, with the regression analysis model reporting a moderate to strong significant relationship. This too is consistent with existing knowledge. Each aim proposed prior to the study being conducted was addressed and successfully achieved; the relationship between implicit narcissism and problematic social media use was defined as a strong positive

association. No relationship was found between gender, age and problematic social media use. The third aim was successfully addressed with the relationship remaining strong after controlling for extraneous variables.

4.2 Implications of this study

The present study is one of very few examining these specific topics in current literature. The findings of this study indicate that certain personality traits can have strong active influence in the way we use, view and manipulate social media platforms. It highlights the influence implicit narcissism can have on communication preferences and enforces the idea of reinforcement in the self-enhancement model and how important social media platforms can be in fulfilling the flattery and admiration needs of narcissists, particularly those that score highly for implicit narcissism.

A second important implication of this study would be its demonstration of the powerful role personality traits can have on our behaviour, conscious and subconscious choices. It illustrates the potentially subconscious choice implicit narcissists make to spend more type invested in their online reality. Further study and testing would provide a more in depth understanding of this relationship, an investigation into the intensity of the problematic social media use observed, as well as the physiological response within the neural reward pathways could also reveal a significant aspect if this relationship.

4.3 Strengths and limitations

This study boasts two main strengths; the first strength is the high internal reliability of both scales utilised within the study. Both the HSNS and SMD scale were devised from larger scales that measured a wider range of variables; they have been tested in terms of reliability and validity, factor analyses were carried out on both scales to ensure they measured the targeted variable. This in conjunction with their frequent use in previous

research were reasons why these scales were chosen as they were the most effective and accurate for measuring the targeted variables. The second strength of this study is its aid in bridging the gap in current literature. The data in this research niche is considerably lacking in concrete results determining both the direction, strength and existence of the investigated relationship. The majority if published research reports inconclusive or conflicting findings, the theoretical basis for this relationship provides a strong foundation for an association. This study's findings attempt to provide conclusive results in terms of relationship direction and strength. These results support some of the existing literature relating to implicit narcissism and problematic social media use.

There are also a number of limitations experienced by this study. The first limitation is the cross-sectional design of this study. Cross sectional designs do not allow for the inference of causation therefore this study confirms the existence of a strong positive relationship but cannot determine the direction of the association. The results of cross-sectional studies are not as valuable in comparison to longitudinal studies. This limits the influence of the findings of not only this study but all cross-sectional designs. A longitudinal study would be largely beneficial and influential within this field as it could examine the causal relationship between implicit narcissism and social media use. It may also be interesting and potentially important to examine the fluctuation of implicit narcissism over several years to determine if social media use is increasing the global societies tendency towards problematic social media use.

A second limitation is the sample size ($N = 86$). The sample size was slightly smaller then originally envisioned for this study and was female dominated. This may be the explanation for no relationship being found between gender and problematic social media; with only 30% of the participants reporting being male. This imbalance skewed the

distribution of the data, this would result in careful interpretation of the results and in terms of generalisability.

4.4 Recommendations for future research

The recommendations for the future study of these topics relate closely to the limitations of this study. The first recommendation would be for further research to try and infer causation with a longitudinal study, the knowledge of a significant relationship is helpful but further study into the relationship and how it is positively or negatively effected over time would shed a more comprehensive light on the relationship and the mechanisms responsible.

It may also be interesting and potentially a key aspect of the association found to investigate the activity within the neural reward pathways when a highly narcissistic individual is receiving the praise desired from social media and compare it to an interpersonal interaction to investigate the strength and intensity of the activity in both conditions. This type of study may also be able to enforce the self-enhancement model, and the consolidate the theoretical basis for this relationship.

A third recommendation would be for researchers for investigate the social media platform preference for implicitly narcissistic individuals in comparison to explicit narcissism and those that score low on narcissism as it may illustrate the level of manipulation achievable of both the actual platform and the people that use it. This could attempt to lead to an interesting explanation into the motivation behind the individual differences in certain social media platform preferences.

4.5 Conclusion

Social media use has significantly grown in the last decade; the influence and usage of technology in daily life will continue to increase exponentially throughout the next century.

Ray Kurzweil, (Haig, 2018) an inventor involved specifically with the future of technology, predicted that

> "We won't experience 100 years of growth on the 21st century, it will be more like 20,000"

This explosive growth calls of a greater understanding of technologies role in child development, its influence on adult behaviour, the influence technology can have in the development of social and coping skills as well as any potential dangers it may cause. In conclusion, all hypotheses were successfully achieved and supported with a strong positive relationship found between implicit narcissism and problematic social media use. These findings help to bridge the gap in the literature, but more in-depth, conclusive and comprehensive research is required in order to gain a greater understanding of how implicit narcissism and online behaviour interact within the relationship.

References

Andreassen, C. S., Pallesen, S., & Griffiths, M. D. (2017). The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey. *Addictive behaviors*, *64*, 287-293.

Arble, E. P. (2008). Evaluating the psychometric properties of the hypersensitive narcissism scale: Implications for the distinction of covert and overt narcissism. *Masters Theses and Doctoral Dissertations*, 236.

Casale, S., Fioravanti, G., & Rugai, L. (2016). Grandiose and vulnerable narcissists: Who is at higher risk for social networking addiction?. *Cyberpsychology, Behavior, and Social Networking*, *19*(8), 510-515.

DeWall, C. N., Buffardi, L. E., Bonser, I., & Campbell, W. K. (2011). Narcissism and implicit attention seeking: Evidence from linguistic analyses of social networking and online presentation. *Personality and Individual Differences*, *51*(1), 57-62.

Forest, A. L., & Wood, J. V. (2012). When social networking is not working: Individuals with low self-esteem recognize but do not reap the benefits of self-disclosure on Facebook. *Psychological science*, *23*(3), 295-302.

Fossati, A., Borroni, S., Grazioli, F., Dornetti, L., Marcassoli, I., Maffei, C., & Cheek, J. (2009). Tracking the hypersensitive dimension in narcissism: Reliability and validity of the Hypersensitive Narcissism Scale. *Personality and Mental Health*, *3*(4), 235-247.

Gnambs, T., & Appel, M. (2018). Narcissism and social networking behavior: A meta-analysis. *Journal of personality*, *86*(2), 200-212.

Haig, M. (2018). *Notes on a Nervous Planet*. Edinburgh, Scotland: Canongate Books.

Hendin, H. M., & Cheek, J. M. (1997). Assessing hypersensitive narcissism: A re-examination of Murray's Narcissism Scale. *Journal of research in personality*, *31*(4), 588-599.

Krämer, N. C., & Winter, S. (2008). Impression management 2.0: The relationship of self-esteem, extraversion, self-efficacy, and self-presentation within social networking sites. *Journal of media psychology*, *20*(3), 106-116.

Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction—a review of the psychological literature. *International journal of environmental research and public health*, *8*(9), 3528-3552.

Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). Social Media & Mobile Internet Use among Teens and Young Adults. Millennials. *Pew internet & American life project*.

Maccoby, M. (2000). Narcissistic leaders: The incredible pros, the inevitable cons. *Harvard business review*, *78*(1), 68-78.

Mazzoni, E., & Iannone, M. (2014). From high school to university: Impact of social networking sites on social capital in the transitions of emerging adults. *British Journal of Educational Technology*, *45*(2), 303-315.

McCain, J. L., & Campbell, W. K. (2016). Narcissism and Social Media Use: A Meta-Analytic Review.

Miller, J. D., Hoffman, B. J., Gaughan, E. T., Gentile, B., Maples, J., & Keith Campbell, W. (2011). Grandiose and vulnerable narcissism: A nomological network analysis. *Journal of personality*, *79*(5), 1013-1042.

Morf, C. C., & Rhodewalt, F. (2001). Unraveling the paradoxes of narcissism: A dynamic self-regulatory processing model. *Psychological inquiry*, *12*(4), 177-196.

Paramboukis, O., Skues, J., & Wise, L. (2016). An exploratory study of the relationships between narcissism, self-esteem and Instagram use. *Social Networking*, *5*(02), 82.

Pierce, W. D., & Cheney, C. D. (2013). *Behavior analysis and learning*. Psychology Press.

Pollet, T. V., Roberts, S. G., & Dunbar, R. I. (2011). Use of social network sites and instant messaging does not lead to increased offline social network size, or to emotionally closer relationships with offline network members. *Cyberpsychology, Behavior, and Social Networking*, *14*(4), 253-258.

Prensky, M. (2001). Fun, play and games: What makes games engaging. *Digital game-based learning*, *5*(1), 5-31.

Raskin, R., & Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of personality and social psychology*, *54*(5), 890.

Savci, M., Ercengiz, M., & Aysan, F. (2018). Turkish Adaptation of the Social Media Disorder Scale in Adolescents. *Archives of Neuropsychiatry*, *55*(3), 248.

Schou Andreassen, C., & Pallesen, S. (2014). Social network site addiction-an overview. *Current pharmaceutical design*, *20*(25), 4053-4061.

van den Eijnden, R. J., Lemmens, J. S., & Valkenburg, P. M. (2016). The social media disorder scale. *Computers in Human Behavior*, *61*, 478-487.

Zajenkowski, M., Maciantowicz, O., Szymaniak, K., & Urban, P. (2018). Vulnerable and grandiose narcissism are differentially associated with ability and trait emotional intelligence. *Frontiers in psychology*, *9*, 1606.

Appendices

Appendix A

Hypersensitive Narcissism Scale

Please answer the following questions by deciding to what extent each item is characteristic of your feelings and behaviour. Fill in the blank next to each item by choosing a number from the scale printed below.

 1 = very uncharacteristic or untrue, strongly disagree, 2 = uncharacteristic 3 = neutral 4 = characteristic 5 = very characteristic or true, strongly agree

1. I can become entirely absorbed in thinking about my personal affairs, my health, my cares or my relations to others.

2. My feelings are easily hurt by ridicule or the slighting remarks of others.

3. When I enter a room I often become self-conscious and feel that the eyes of others are upon me.

4. I dislike sharing the credit of an achievement with others.

5. I feel that I have enough on my hands without worrying about other people's troubles.

6. I feel that I am temperamentally different from most people.

7. I often interpret the remarks of others in a personal way.

8. I easily become wrapped up in my own interests and forget the existence of others.

9. I dislike being with a group unless I know that I am appreciated by at least one of those present.

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

Appendix B

Social Media Disorder Scale

Please answer the question by thinking of your experience with using social media (e.g., WhatsApp, SnapChat, Instagram, Twitter, Facebook, Google+, Pintrist, forums, weblogs) in past year. Answer the questions as honestly as possible.

During the past year have you…

1. Regularly found that you can't think of anything else but the moment you will be able to use social media again? Yes/No (Preoccupation).

2. Regularly felt dissatisfied because you want to spend more time on social media? Yes/No (Tolerance).

3. Often felt bad when you could not use social media? Yes/No (Withdrawal).

4. Tried to spend less time on social media, but failed? Yes/No (Persistence).

5. Regularly neglected other activities (i.e. hobbies, sports, homework) because you wanted to use social media? Yes/No (Displacement).

6. Regularly had arguments with others because of your social media use? Yes/No (Problems).

7. Regularly led to your parents or friends about the amount of time you spend on social media? Yes/No (Deception).

8. Often used social media to escape from negative feelings? Yes/No (Escape).

9. Had serious conflict with parents, brother, sister (friends, relationships etc.) because of your social media use? Yes/No (Conflict)

Appendix C

Demographic Questions

Please provide your age _____

Are you [ ] Male [ ] Female

Appendix D

Informed Consent and Information Sheet

This study aims to investigate if narcissism is associated with problematic social media use. You will be asked to complete two short surveys. These surveys will examine your levels of personality trait narcissism and your social media habits. You must be over the age of 18 to participate in this study. All information you provide will remain confidential, the responses will not be looked at individually but as a summary and all responses will be anonymously submitted to the researcher so please do not provide a name or contact information. If you are completing a pen and paper version of this survey all responses will be kept in a secure location until the data is digitized after which it will be destroyed. If you are interested in a copy of the results you can request them, this will be detailed after the surveys have been completed.

If for any reason during this study you do not feel comfortable, you may withdraw from or leave the study all information you provided will be discarded. If you have any further questions or queries concerning this study please feel free to contact myself, the researcher via email: x16492076@student.ncirl.ie or the assisting supervisor: Fearghal.OBrien@ncirl.ie.

Your participation is greatly appreciated yet strictly voluntary. All information will be kept confidential and your name will not be associated with any research findings, however the findings may be stored in the NCI thesis archives or presented at a conference or class.

Please indicate below that you understand the nature of the study, your rights and are over the age of

18   [ ]

Appendix E

Debrief Sheet

Thank You! Your participation is greatly appreciated.

Thank you for your participation in this study. I would like to remind all participants that the personality trait being measured in this study is a form of trait narcissism, and that all data and information provided is not-identifiable and anonymous, furthermore it will be kept in a secure password protected file. If you feel uncomfortable or have been affected by anything discussed or examined in this survey, there are a number of available and appropriate helplines listed below;

Samaritans 116 123   Pieta House 1800 247 247

Aware 1800 80 48 48

However, if you have any queries regarding the study itself or would like a copy of the findings once the study is completed please feel free to email myself: x16492076@student.ncirl.ie or the assisting supervisor at Fearghal.OBrien@ncirl.ie.

Appendix F

Categorical Variables

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	26	30.2	30.2	30.2
	Female	60	69.8	69.8	100.0
	Total	86	100.0	100.0	

SMD_Totalscore

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	9	9	10.5	10.5	10.5
	10	13	15.1	15.1	25.6
	11	13	15.1	15.1	40.7
	12	19	22.1	22.1	62.8
	13	11	12.8	12.8	75.6
	14	4	4.7	4.7	80.2
	15	7	8.1	8.1	88.4
	16	2	2.3	2.3	90.7
	17	5	5.8	5.8	96.5
	18	3	3.5	3.5	100.0
	Total	86	100.0	100.0	

Appendix G

Continuous variables

Descriptives

			Statistic	Std. Error
HSNS_Total	Mean		29.23	.720
	95% Confidence Interval for Mean	Lower Bound	27.80	
		Upper Bound	30.66	
	5% Trimmed Mean		29.16	
	Median		30.00	
	Variance		44.628	
	Std. Deviation		6.680	
	Minimum		10	
	Maximum		50	
	Range		40	
	Interquartile Range		9	
	Skewness		.127	.260
	Kurtosis		.940	.514

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
HSNS_Total	.066	86	.200*	.984	86	.364

*. This is a lower bound of the true significance.

Appendix H

Pearson Correlation

Correlations

		HSNS_Total	Age	Gender	SMD_Totalscore
Pearson Correlation	HSNS_Total	1.000	-.022	.019	.481
	Age	-.022	1.000	.104	-.173
	Gender	.019	.104	1.000	.175
	SMD_Totalscore	.481	-.173	.175	1.000
Sig. (1-tailed)	HSNS_Total	.	.421	.430	.000
	Age	.421	.	.171	.055
	Gender	.430	.171	.	.054
	SMD_Totalscore	.000	.055	.054	.
N	HSNS_Total	86	86	86	86
	Age	86	86	86	86
	Gender	86	86	86	86
	SMD_Totalscore	86	86	86	86

a. Lilliefors Significance Correction

Correlations

			HSNS_Total	SMD_Totalscore
HSNS_Total	Pearson Correlation		1	.481**
	Sig. (2-tailed)			.000
	N		86	86
	Bootstrap^c	Bias	0	-.006
		Std. Error	0	.094
		BCa 95% Confidence Interval	Lower	.	.270
			Upper	.	.638
SMD_Totalscore	Pearson Correlation		.481**	1
	Sig. (2-tailed)		.000	
	N		86	86
	Bootstrap^c	Bias	-.006	0
		Std. Error	.094	0
		BCa 95% Confidence Interval	Lower	.270	.
			Upper	.638	.

**. Correlation is significant at the 0.01 level (2-tailed).
c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Appendix I

Multiple Rgression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.491[a]	.241	.213	5.926	.241	8.673	3	82	.000

a. Predictors: (Constant), SMD_Totalscore, Age, Gender
b. Dependent Variable: HSNS_Total

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t		Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	9.806	5.556		1.765	.081	-1.246	20.859					
	Age	.134	.178	.074	.750	.455	-.221	.489	-.022	.083	.072	.951	1.051
	Gender	-1.116	1.427	-.077	-.782	.436	-3.955	1.722	.019	-.086	-.075	.951	1.052
	SMD_Totalscore	1.406	.276	.507	5.091	.000	.857	1.956	.481	.490	.490	.932	1.073

a. Dependent Variable: HSNS_Total

N		86		86	

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