



Narcissism and related need satisfaction among German social network users

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ABSTRACT

Positive correlations between online social networking and narcissistic behaviors and traits can be regarded as common sense among trait-psychological online research today. However, it still remains unclear what underlying factors motivate narcissistic individuals to engage in social interactions on websites such as Facebook. This study investigates trait narcissism (measured by the Narcissistic Personality Inventory) and narcissism-related needs on social networking sites. Therefore, perceived possibilities of satisfying three narcissism-related needs (1. need for attention and admiration, 2. need for self-disclosure and self-presentation, and 3. need for self-esteem) are investigated for face-to-face communication and communication on social networking sites measured by newly developed scales. The goal is to see whether or not narcissistic individuals seek out online social interactions because these needs can be better met on social networking sites than in face-to-face communication. A questionnaire survey among German students ($N = 886$) revealed significant relations between trait narcissism and usage of social networking sites. Regressions analyses and t -tests show that narcissistic individuals use social networking sites more often and intensively, however, when it comes to satisfying typical narcissistic needs, face-to-face communication is rated as being more suitable to meet the needs for attention and admiration as well as self-disclosure and self-presentation. Results indicate that online social networking is not particularly rewarding for narcissistic individuals, yet another much appreciated means of narcissistic behavior.

Keywords: Personality, Online Behavior, Facebook, Social Media, Narcissism, Social Networking

1 Introduction

Narcissism is a personality trait that has been the recipient of much attention in the context of social networking sites such as Facebook. Online social networking requires a certain degree of self-disclosure and the willingness to share personal information with others (Steinfeld, Ellison & Lampe, 2008). Thus, the overwhelming success of Facebook can imply that social networking sites are somehow related to narcissistic forms of self-presentation, or are in fact, huge vanity fairs online.

The psychological notion of narcissism refers to excessive self-love and self-focus. Narcissistic individuals feel they are special, unique, and better than others. They spend a lot of time and energy doing things to make themselves look and feel good and they constantly seek for self-affirmation (Twenge & Campbell, 2009). Furthermore, narcissistic individuals ruminate on ideas concerning success, power, beauty, and fame (American Psychiatric Association, 2013; Morf & Rhodewalt, 2001; Twenge & Campbell, 2009). Since self-presentation is a central feature of online social networking (Mehdizadeh, 2010), linking trait narcissism to the use of social networking sites is quite reasonable (Buffardi, 2011; Davenport et al., 2014).

Recent literature on narcissism and online social networking clearly shows some meaningful correlative relationships

between narcissism as a subclinical personality trait and patterns of usage. For example, it has been shown that narcissists use some features of social networking sites, such as status updates or picture postings, more intensively and frequently than less narcissistic individuals (Buffardi & Campbell, 2008; Marshall, Lefringhausen & Ferenczi, 2015; Mehdizadeh, 2010; Ryan & Xenos, 2011; Wang et al., 2012). Narcissistic individuals tend to publish more explicit photos of themselves (Buffardi & Campbell, 2008; DeWall et al., 2011; Ong et al., 2011) and some studies showed that narcissism also correlates positively with the number of online friends (Bergman et al., 2011; Brailovskaia & Bierhoff, 2012; Buffardi & Campbell, 2008; Davenport et al., 2014), whereas Wang et al. (2012) couldn't find a relationship. Ryan and Xenos (2011) demonstrated that users of social networking sites show higher scores on narcissism than non-users. However, there is conflicting evidence on the central question of whether narcissistic individuals use social networking sites more often (Bergman et al., 2011; Blachnio, Przepiorka & Rudnicka, 2016; Mehdizadeh, 2010; Ryan & Xenos, 2011; Skues, Williams & Wise, 2012).

Although previous research has demonstrated that narcissism correlates positively with certain aspects of usage of social networking sites (e.g. number of Facebook friends), to date it is not clear what mechanisms may facilitate this relationship. Therefore, the following questions need to be explored in greater detail: (1) Do narcissistic individuals

prefer communication on social networking sites rather than face-to-face communication? And (2) Is Facebook a social environment that attracts particularly narcissistic personalities?

Given that there are correlations between narcissism and social media usage, this paper aims to shed light on which aspects of trait narcissism are most strongly related to usage of social networking sites. In the past, characteristic psychological needs of narcissistic individuals were often implicated as reasons for correlations found. DeWall and colleagues (2011) suggest that narcissistic individuals use online social networking because they can draw attention to themselves quite easily, hence, satisfy their need for attention and admiration. In other studies, needs for self-disclosure or self-presentation (e.g. Bibby, 2008; Ong et al., 2011; Twenge & Campbell, 2009) or aspects of self-esteem are used to explain the relations found (e.g. Buffardi & Campbell, 2008; Mehdizadeh, 2010). So far, specific and precisely defined needs, need-related gratifications or perceptions of need satisfaction have not been included in the empirical endeavors. This study takes a closer look at the specific needs of narcissistic individuals in the context of online social networking and investigates whether these needs can better be satisfied on social networking sites or in face-to-face communication.

2 Typical needs of narcissistic individuals

References to typical needs of narcissistic individuals can be found frequently in the research texts in order to explain certain aspects of social media usage (e.g. DeWall et al., 2011; Ong et al., 2011). The specific needs a person has, and how strongly they express, largely depends on personality aspects (Murray, 1938; Rosengren, 1974). In the case of social media usage, it has been suggested that narcissistic individuals develop a preferences for communication and interaction on social networking sites if they succeed in satisfying their specific needs better in this context than in other social settings such as face-to-face communication (e.g. DeWall et al., 2011). Need satisfaction online has already been investigated (especially in the context of loneliness) and has been shown as a motivating factor for usage of Internet services (e.g. Kim, LaRose & Peng, 2009; Sheldon, Abad & Hinsch, 2011). The following needs are of particular interest in the context of narcissism:

- a) *The need for attention and admiration* (Bergman et al., 2011; Bibby, 2008; Buffardi & Campbell, 2008; Mehdizadeh, 2010; DeWall et al., 2011; Twenge & Campbell, 2009): People with a high need for attention, for instance, enjoy having people listening to them or watching them (Mellor, 2005). In contrast, the need for admiration is the longing for highly positive feedback, such as complementing or flattering comments and signs of jealousy or envy. Both the need for attention and for admiration are considered central features of trait narcissism as well as criteria of the narcissistic personality disorder (American Psychiatric Association, 2013) and can be merged into one need complex in the context of narcissism. Morf and Rhodewalt (2001) argue that narcissists are not particularly concerned in maintaining a good social reputation, but rather ob-
- taining attention and short-term admiration. Accordingly, many casual or superficial acquaintances, with the help of whom a narcissistic individual can procure the necessary attention and admiration, are more important than close friends. In the context of communication and interaction on social networking sites, it is now believed that the need for attention and admiration can be satisfied particularly well on social networking sites. This is where narcissists have the opportunity to gain the attention of a relatively large group of individuals (Bergman et al., 2011; Bibby, 2008; Buffardi & Campbell, 2008; DeWall et al., 2011; Mehdizadeh, 2010). Additionally, one key aspect of communication on social networking sites is social feedback. Users have the ability to comment on almost any virtual activity and show their consent (e.g., via the Facebook like button). Thus, the number of online friends, or the amount of comments and "likes" can be interpreted as measures of popularity.
- b) *The need for self-disclosure and self-presentation* (Bibby, 2008; Ong et al., 2011; Twenge & Campbell, 2009): While the need for attention and admiration focuses on the counterpart in a social interaction, the need for self-disclosure and self-presentation refers to the sender directly. Self-disclosure and self-presentation are hardly distinguishable when it comes to narcissistic behavior. Self-disclosure is usually defined as the process of revealing personal information in a social interaction (Chelune, Sultan & Williams, 1980) and is an important factor of emotional relationships, as well as for the emergence of long-term bonding (Chelune et al., 1980). Nevertheless, narcissistic self-disclosure is not to be understood primarily as a social process, but rather as a highly egocentric behavior. A narcissistic individual does not disclose thoughts and feelings for the purpose of forming intimate and meaningful relationships, but rather, in service of his/her own vanity. Morf and Rhodewalt (2001) call this process "pseudo-social". In contrast to self-disclosure, self-presentation addresses the universal human tendency to control the way we are perceived by others (Leary & Kowalski, 1986). In this process (also well known as impression management; Goffman, 1959), positive and socially desirable aspects are highlighted and negative aspects are rather suppressed (Schlenker, 1980). Whereas non-narcissistic individuals' self-disclosure can mostly be regarded as authentic (Jourard, 1971; Pearce & Sharp, 1973) and self-presentation as a more or less idealized revelation, in the context of narcissism, both aspects blur. Narcissistic self-disclosure does not necessarily need to correspond to reality. However, exaggerated or untrue messages are rarely deliberate lies, but instead, wishful thinking that the narcissistic individual considers to be true. Social networking sites offer many opportunities for self-disclosure and self-presentation (Michikyan, Dennis & Subrahmanyam, 2015). Narcissists can control their virtual self-image with the help of pictures, self-descriptions, and other postings to a large extent.
- c) *The need for self-esteem* (Buffardi & Campbell, 2008; DeWall et al., 2011; Mehdizadeh, 2010): The need for

self-esteem is inherent in every human being and describes the universal human need to appreciate oneself (Jones, 1973; Leary & Baumeister, 2000; Maslow, 1970). Self-esteem can be understood as the result of a self-evaluation combining social feedback as well as thoughts and feelings towards oneself, and is closely related to the concept of impression management (Leary & Baumeister, 2000). Narcissism and self-esteem as psychological constructs are highly interrelated. Nevertheless, there is no consensus about whether narcissists have high or low self-esteem (Akhtar & Thompson, 1982; Watson, Sawrie & Greene, 2002). However, it is widely accepted that the need for self-esteem is particularly strong among narcissists. Accordingly, Baumeister and Vohs (2001) refer to narcissism as a form of self-esteem addiction. Furthermore, the need for self-esteem is also closely related to all the aforementioned needs. Morf and Rhodewalt (2001) point out that narcissistic individuals depend on social feedback and the comparison with others to maintain their self-esteem. Thus, attention, admiration, self-disclosure, and self-presentation are to be understood as functional components of self-esteem regulation. Morf and Rhodewalt (2001) call this the social intelligence of narcissistic individuals, which ensures that narcissistic self-esteem is not getting out of balance. Therefore, all aforementioned aspects of communication and interaction on social networking sites, such as a large circle of friends, aspects of self-presentation, and social feedback can be used as means of maintaining and improving narcissistic self-esteem (DeWall et al., 2011).

3 Hypotheses

The theoretical bases can be summarized as follows: Narcissism as a personality trait is by definition associated with increased needs for (1) attention and admiration, (2) self-disclosure and self-presentation as well as for (3) self-esteem. If people are able to satisfy these needs better on social networking sites as opposed to face-to-face communication, individuals with comparatively high levels of trait narcissism might develop certain preferences for online social networking. Figure 1 visualizes the assumed relationship of the different concepts on a heuristic level as derived from the literature review.

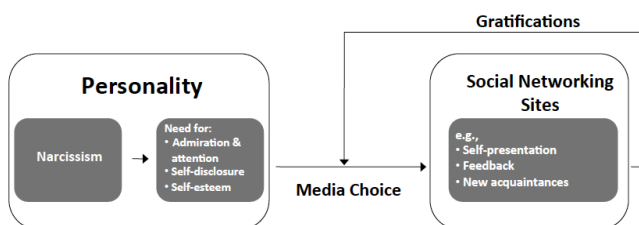


Figure 1: relationship of the different concepts on a heuristic level

This study aims to examine whether users of social networking sites and especially those scoring high on trait narcissism feel that they can satisfy the aforementioned needs better on social networking sites than in face-to-face communication. First, we aim to confirm previous results, which indicate that narcissistic individuals use social networking

sites more frequently than non-narcissistic people (Mehdizadeh, 2010):

Hypothesis 1: Narcissistic individuals use social networking sites (and their features) more frequently than non-narcissistic individuals.

Next, we will explore if social networking sites are rated to be more suitable than face-to-face communication to satisfy the discussed needs:

Hypothesis 2: Possibilities of need satisfaction for (a) attention and admiration, (b) self-disclosure and self-presentation, (c) self-esteem are rated higher for social networking sites than for face-to-face communication.

Finally – being the main focus of this study – we will explore if narcissistic individuals prefer social networking sites to satisfy narcissism-related needs.

Hypothesis 3: Narcissistic users rate possibilities of need satisfaction for (a) attention and admiration, (b) self-disclosure and self-presentation, (c) self-esteem higher on social networking sites than non-narcissistic users.

With this approach, we do not aim to prove that narcissistic individuals are seeking for attention, admiration, self-disclosure, self-presentation or self-esteem, as these aspects are already inherent in the definition and operationalization of narcissism as a personality trait. Instead, we seek to understand whether social networking sites are particularly suitable environments to meet these needs, especially in the eyes of narcissistic individuals. Given that gender-related as well as age-related influences on both social media usage (Correa, Hinsley & de Zúñiga, 2010) and narcissism (Foster, Campbell & Twenge, 2003) cannot be ruled out, gender and age shall also be included in the data analyses and be controlled whenever necessary.

4 Method

Since previous studies on narcissism and online social networking mostly administered online questionnaires among student samples (Bergman et al., 2011; Orr et al., 2009; Ryan & Xenos, 2011), this method was chosen to ease comparability. The survey was conducted in spring/summer 2011 among German students. It was announced on 44 student mailing lists of social science programs to recruit participants.

4.1 Participants

The final dataset consisted of a total of 886 participants, with an average age of 26 years (17 to 63 years, $SD = 6.0$). Overall, 71 percent ($n = 632$) of the respondents were female and 27 percent ($n = 242$) male. Twelve individuals did not assign their gender to male or female.

4.2 Instruments

The online questionnaire included following measures:

(1) Usage frequency of social networking sites: Participants were asked how often they use social networking sites such

as Facebook ("How often do you use the following communication services? Social networking sites (e.g. Facebook)"). The response scale ranged from (6) several times daily (0) never. Participants showed an average of $M = 4.13$ ($SD = 2.20$).

(2) Favorite social networking site: The favorite social networking site was assessed with an open-ended question: "Which social network site do you use for private communication most frequently (favorite social network site)?"

(3) Usage frequency of features on the preferred social networking site: Participants were asked about their usage frequency of typical features on social networking sites on their preferred site ("How often do you use the following features on the aforementioned [the respondent's favorite social networking sites] social networking site?" (see Table 1 for items and descriptives). All items were supposed to be answered on a scale from (6) several times daily to (0) never or, in case the functionality was not featured on their preferred site, with "not available on this site" which was coded as a missing value.

Table 1. Descriptive statistics for items for usage frequency of feature on social networking sites

	<i>N</i>	<i>M</i>	<i>SD</i>
Reading and writing private messages	720	3.91	1.26
Leaving a public message on someone's profile	714	2.83	1.24
Using instant messengers (chats)	709	2.87	1.51
Writing status updates	701	2.33	1.24
Commenting on Posts	704	2.89	1.40
Commenting on linked videos and pictures	712	2.57	1.23
Uploading videos and pictures	706	1.89	0.69
Linking to online videos and pictures	704	2.08	1.05
Linking to websites (e.g. online articles)	702	2.10	1.13
Visiting profiles of friends	717	3.64	1.32
Visiting profiles of other people	718	2.65	1.18
Joining events	709	2.03	0.93

(4) Perceived possibilities of need satisfaction: To find out whether participants think face-to-face communication or communication on social networking sites is more suitable to satisfy the three needs, we asked participants how much they feel certain need related aspects (e.g. being in the center of attention) are accomplished in face-to-face communication and on social networking sites. To assess this aspect, new scales were developed. Each possibility of need satisfaction was measured through four items compiled from existing instruments. The items for need for attention and admiration were formulated with respect to Hill's Interpersonal Orientation Scale (1987). The items for need for self-disclosure and self-presentation are based on the Self-Disclosure Scale of Wheelless (Wheelless, 1976, 1978) and on the impression management theory (Leary & Kowalski, 1986). The items for need of self-esteem are based upon the Rosenberg Scale (Rosenberg, 1965). Since not the needs themselves, but the perceived possibilities to satisfy these needs are of interest in this study, the items had to be adjusted in most cases (e.g. original item "I like to be around people when I can be the center of attention", new

item "I am often in the center of attention" compare Hill, 1987). Items such as "I am often in the center of attention" had to be rated on a 5-point scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree) for both, social communication and interaction face-to-face and on social networking sites ("To which extent do you agree with the following statements when it comes to communication and social interaction on social network sites?" respectively "To which extent do you agree with the following statements when it comes to face-to-face communication and interaction?"). The scales (calculated as average score of items) were developed and tested with the help of several pretests among student pretest samples. Principle component analyses¹ were performed to improve validity and reduce the number of items from initially 15 to the final set of 12 items (see Table 2 for items). Alpha values lie between .51 and .84 (Table 3). Mapping the factor structure of all items with the help of principle component analyses amongst the final test samples revealed three principle components. The first includes all items of the needs for attention and admiration as well the items of self-presentation. In fact, the notions of all three aspects (attention, admiration, and self-presentation) are closely connected to each other among non-narcissistic individuals. However, under 1.1 we argued that in the context of narcissism rather self-presentation and self-disclosure blur. For the whole sample – as assumed – this relationship does not show. Both aspects load on different factors (see component 3 for self-disclosure). However, in this study we will refer to the need of self-disclosure and self-presentation as one need complex with two underlying factors. Finally, the second component includes all items for self-esteem (for factor loadings see appendix Table 8).

Table 2. Newly developed items for perceived possibilities of need satisfaction including means and standard deviations

	FTF	SNS
Attention & admiration		
"I am often in the center of attention"	2.82; 0.93	2.34; 0.87
"People often think that I am an important person"	2.97; 0.86	2.78; 0.85
"People often admire me"	2.98; 0.84	2.79; 0.84
"I often impress others"	3.16; 0.83	2.97; 0.86
Self-disclosure		
"I express personal aspects only infrequently"	2.57; 1.00	3.29; 1.02
"I often talk about my thoughts and feelings"	3.54; 0.97	2.94; 1.14
Self-presentation		
"I spend a lot of time to uphold my public image"	2.45; 0.92	2.27; 0.96
"I like to present myself to others"	2.79; 1.06	2.73; 1.12
Self-esteem		
"I feel that I am a person of worth"	3.90; 0.87	3.80; 0.91
"On the whole, I am satisfied with myself"	3.82; 0.87	3.85; 0.87
"I certainly feel useless at times"	2.25; 1.08	2.15; 1.08
"I rely on myself"	3.86; 0.84	3.85; 0.84

Values: *M*; *SD*; score range from 1 (strongly disagree) to 5 (strongly agree); FTF= face-to-face communication; SNS= communication on social networking sites
* = items reversely coded in further analysis

(5) Finally, narcissism was assessed using a 15-item short version of the Narcissism Personality Inventory (NPI; Raskin & Hall, 1979, 1981; Raskin & Terry, 1988; German translation and validation by Schütz et al., 2004). The NPI is the most widespread and best-validated scale for the measurement of subclinical narcissism (Schütz et al.,

¹Method: Since all needs are closely related (see above e.g. similarities of the constructs attention and self-presentation) oblimin rotation with Kaiser normalization was chosen

2004). The German translation and validation has been introduced by Schütz et al. (2004) and proved a reliable measurement of narcissism also with the 15-item short version. In this study, average narcissism lies at $M = 4.69$ ($SD = 2.94$) with a value of 0 indicating minimal narcissism and 15 as the maximum.

Table 3. Cronbach's Alpha for the newly developed scales

	FTF	SNS
Attention & admiration		
"I am often in the center of attention"		
"People often think that I am an important person"	.84	.80
"People often admire me"		
"I often impress others"		
Self-disclosure		
"I express personal aspects only infrequently"*	.72	.51
"I often talk about my thoughts and feelings"		
Self-presentation		
"I spend a lot of time to uphold my public image"	.61	.60
"I like to present myself to others"		
Self-esteem		
"I feel that I am a person of worth"		
"On the whole, I am satisfied with myself"	.82	.75
"I certainly feel useless at times"*		
"I rely on myself"		

Note: * = reverse coded items; FTF = face-to-face communication; SNS = communication on social networking sites

5 Results

5.1 Descriptive statistics

A total of 18 percent of the respondents indicate that they do not use social networking sites for private purposes (total number of users of social networking sites $N = 723$). Facebook is most popular: 73 percent of the respondents named Facebook as their favorite social networking site.

5.2 Testing the hypotheses

To test the first hypothesis (higher usage frequency among narcissistic individuals), regression analyses were performed with frequency of usage (of social networking sites in general and of features of social networking sites) as dependent variables and NPI scores, gender, and age as predictor variables. Table 4 shows the results.

The NPI score predicted the usage frequency of almost every feature, with the exception being "uploading videos and pictures." The highest relationships were found between "commenting on posts," "commenting on linked videos and pictures," and, "leaving a public message on someone's profile."

Gender was a significant predictor for usage frequency of five features ("commenting on posts," "linking to websites," "joining events", "writing status updates", and "linking to online videos and pictures"). Men use these functions more often.

When it comes to age effects, younger participants use social networking site in general, as well as instant messengers more often than older participants, whereas "linking to websites," "linking to videos and pictures," and "uploading

videos and pictures" showed a positive relationship with years of age.

Table 4. Multiple regression analyses with usage frequency as the dependent variable and NPI score, gender, and age as predictor variables

	N	R ²	β
1. General social network usage			
NPI			.122***
Gender	861	.091***	.057
Age			-.262***
2. Feature usage			
Commenting on posts			
NPI			.192***
Gender	694	.056***	-.103**
Age			.028
Commenting on linked videos and pictures			
NPI			.178***
Gender	701	.045***	-.074
Age			.053
Leaving a public message on someone's profile			
NPI			.149**
Gender	702	.022**	.042
Age			-.014
Reading and writing private messages			
NPI			.145***
Gender	708	.025***	.055
Age			-.046
Linking to websites (e.g. online articles)			
NPI			.144***
Gender	691	.114***	-.203***
Age			.179***
Visiting profiles of friends			
NPI			.141***
Gender	705	.023**	-.014
Age			-.040
Joining events			
NPI			.137***
Gender	697	.031***	-.076*
Age			.050
Writing status updates			
NPI			.129**
Gender	690	.033***	-.106**
Age			-.009
Linking to online videos and pictures			
NPI			.121**
Gender	693	.072***	-.179***
Age			.114**
Using instant messengers (chats)			
NPI			.098*
Gender	697	.030***	-.052
Age			-.131**
Visiting profiles of other people			
NPI			.079*
Gender	706	.012*	-.065
Age			-.003
Uploading videos and pictures			
NPI			.063
Gender	695	.027	-.061
Age			.129**

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; smaller base sizes due to missing values

To test the second hypothesis (better need satisfaction on social networking sites), means of the three newly developed scales were compared for communication on social networking sites and for face-to-face communication by using t-tests for paired samples (Table 5). Results show that participants prefer face-to-face communication to satisfy their needs for attention and admiration as well as for self-disclosure and self-presentation. The need for self-esteem revealed no significant differences between the settings.

To test the third hypothesis (better need satisfaction on social networking sites among narcissistic individuals), an indicator was computed for each participant to see whether the participant thinks that the particular need can better be

satisfied face-to-face or on social networking sites. By subtracting the scores of the scales for both settings, the difference value (mean social networking site – mean face-to-face) indicates whether the respondent prefers social networking sites or face-to-face communication to satisfy the need.

Table 5. *t*-test for paired samples for the three needs between social networking sites and face-to-face

	<i>N</i>	<i>M</i>	<i>SD</i>	<i>T</i>	<i>Df</i>	<i>p</i> (95%)	<i>r</i> *
Attention & admiration							
FTF	719	2.98	0.71	-12.63	718	<.001	.43
SNS		2.72	0.67				
Self-disclosure & self-presentation							
FTF	722	3.06	0.62	-15.26	721	<.001	.49
SNS		2.67	0.69				
Self-esteem							
FTF	719	3.84	0.74	.32	718	.75	
SNS		3.84	0.69				

Note: FTF = face-to-face communication; SNS = communication on social networking sites
* = Pearson's effect size *r* for *t*-tests according to Rosenthal (1991); *r* = .10 (small effect), *r* = .30 (medium effect), *r* = .50 (large effect)

$$r = \frac{t^2}{t^2 + df}$$

If a participant prefers face-to-face communication, the subtraction should result in a negative value. Conversely, positive values indicate a preference for social networking sites. A value of zero would indicate a participant perceives no differences between the settings. A regression analysis was performed to test whether this value is related to levels of narcissism or gender. Table 6 shows the results of multiple regression analyses with setting preference as the dependent variable and NPI score, age, and gender as predictor variables.

Table 6. Multiple regression analyses with setting preference as the dependent variable and NPI score and gender as predictor variables

	<i>N</i>	<i>R</i> ²	β
Attention & admiration			
NPI			-.152***
Gender	706	.027***	-.090*
Age			-.050
Self-disclosure & self-presentation			
NPI			-.086*
Gender	709	.022**	-.135**
Age			-.059
Self-esteem			
NPI			-.105**
Gender	706	.019**	-.111**
Age			-.001

Note: ****p* < .001, ***p* < .01, **p* < .05

It shows that there is a statistically significant negative relationship between setting preference and NPI scores in all cases, indicating that preference for online social networking decreases with higher scores of narcissism.

When it comes to gender, there is a statistically significant negative relationship between setting preference and gender for all needs. Having a closer look at the mean scores of female and male participants, it becomes clear that female participants show a higher preference for face-to-face communication than men. Regarding satisfying the need for self-esteem, men slightly tend to prefer online social networking (Table 7).

Table 7. Mean values of setting preference for male and female participants

	male	female
Attention & admiration	-.21	-.28
Self-disclosure & self-presentation	-.26	-.43
Self-esteem	.08	-.01

Note: negative values indicate preference for face-to-face communication; positive values for online social networking. For age, no effects occurred.

6 Discussion

This study investigated the frequently uttered assumption that narcissistic individuals show prevalence for using social networking sites. In particular, we explored whether narcissistic individuals use social networking sites more frequently than non-narcissistic individuals. We also investigated whether typical, trait-related needs can better be satisfied on social networking sites than in face-to-face communication.

Results on social network usage show that narcissistic individuals use most features of social networking sites indeed more frequently than less narcissistic individuals. Solely "uploading videos and pictures" did not lead to a significant result. This is surprising since this feature has been described as particularly narcissistic in the past (Buffardi & Campbell, 2008; DeWall et al., 2011; Ong et al., 2011). It might be, that this feature has become more and more common and popular also among non-narcissistic users in the meantime and thus, differences are not detectable anymore. The highest predictions were found for "commenting on posts," "commenting on linked videos and pictures," and, "leaving a public message on someone's profile," supporting studies which also found positive correlations between narcissism and status updates (Marshall et al., 2015; Wang et al., 2012) or public posts (Brailovskaia & Bierhoff, 2012). This outcome can be regarded as evidence that narcissistic individuals show high engagement in social interaction on social networking sites than non-narcissistic individuals, although, the explained variance is rather small.

To understand reasons for usage, three needs (1. need for attention and admiration, 2. need for self-disclosure and self-presentation, and 3. need for self-esteem) have been investigated by asking participants whether need-related aspects are rather accomplished in face-to-face communication or on social networking sites. It was shown that users of social networking sites rate face-to-face communication as being more suitable for attention and admiration as well as for self-disclosure and self-presentation. No distinct preference was found for the need for self-esteem. It shows, while self-esteem remains stable across the two social settings, people prefer direct, that is, face-to-face communication to get attention and admiration, to show and disclose themselves. Regression analyses showed that the preference for face-to-face communication is even positively related to narcissism for all three needs.

These results contradict the frequently uttered assumptions that online social networking is particularly suitable for narcissistic individuals and behaviors. This assumption has to be rejected at least, when online social networking is compared to face-to-face communication. In fact, results show

that users – narcissistic and non-narcissistic – rather prefer face-to-face communication to satisfy the discussed human needs. This does not mean that social networking is not suitable to meet these needs but – when compared to face-to-face communication – slightly less suitable. Therefore, it seems rather unjustified to label social net-working as particularly narcissistic. Social networking requires self-presentation and the willingness to share personal information. However, results show, that self-presentation on social networking sites is not particularly rewarding in terms of facilitating narcissistic vanity but rather being a basis for quite common kinds of social interactions.

It also becomes clear, that although narcissistic individuals engage in social interaction on social networking sites more frequently than non-narcissistic individuals, this seems not to be due to special social rewards on social networking sites. Narcissistic individuals spend a lot of time presenting themselves and seeking for self-affirmation – no matter if face-to-face or on social networking sites. In fact, narcissistic individuals even rate face-to-face communication more suitable to satisfy trait-specific needs. Online social networking seems to be another, thoroughly welcome means of self-presentation and social interaction among narcissistic individuals. Direct, that is face-to-face, feedback, however, seems to be a more favorable means of interaction for narcissistic need satisfaction. Hence, more research is needed to understand which social settings or means of communication support narcissistic behavior in terms of gained gratifications to better understand media usage and patterns of communication of narcissistic individuals.

When interpreting the results, some limitations have to be taken into account. For economic reasons, in the present study, convenience sampling among university students was conducted, thus, the sample is relatively homogeneous in terms of age and education. Therefore, results are not representative for the German population, but instead, most likely apply to users of the same age, education level, and cultural background. Methods and data collection of the present study also build on earlier studies on this subject, which employed online questionnaires and convenience sampling (Ryan & Xenos, 2011). Additionally, since both explained variances and Cronbach's Alphas are rather low, results presented have to be understood as merely a first indication that online social networking is not particularly rewarding for narcissistic individuals. Further research is required to measure narcissistic needs and need satisfaction more precisely to understand motivating factors of media usage.

7 References

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8 Appenix

Table 8. Structure matrix

	Component		
	1	2	3
People often admire me	.797	.276	.218
I often impress others	.796	.320	.247
I am often in the center of attention	.763	.276	.303
People often think that I am an important person	.724	.327	.155
I like to present myself to others	.680	.006	.101
I spend a lot of time to uphold my public image	.615	-.084	-.082
I rely on myself	.243	.867	.274
On the whole, I am satisfied with myself	.216	.848	.276
I certainly feel useless at times	-.009	.770	.159
I feel that I am a person of worth	.330	.724	.336
I express personal aspects only infrequently	.120	.260	.876
I often talk about my thoughts and feelings	.171	.229	.873

Note: Extraction method: Principle component, Oblimin rotation with Kaiser Normalization

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