

ALEXITHYMIA IN FACEBOOK ADDICTION: ABOVE AND BEYOND THE ROLE OF PATHOLOGICAL NARCISSISM

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SUMMARY

Background: Personality dysfunctions and deficits in the capacity to cope with negative emotional states have been related to internet addictions. However, in relation to Facebook addiction, this issue remains poorly investigated. Specifically, few studies explored the role played by grandiose and vulnerable narcissism in Facebook addiction. Furthermore, the relationship between alexithymia and pathological narcissism has not yet been explored in relation to problematic Facebook use. The main objective of this study was to examine the association among Facebook addiction, pathological narcissism and alexithymia.

Method: A cross sectional study was designed to this aim. A sample of adult participants ($N=270$; $M_{age}=41.05$; $SD=14.05$) was administered the Bergen Facebook Addiction Scale (BFAS), The Pathological Narcissism Inventory (PNI) and the Toronto Alexithymia Scale (TAS-20).

Results: Results showed that pathological narcissism, and especially grandiose narcissism, appears to be an important factor associated to problematic Facebook usage among adults. Moreover, difficulties in the capacity to identify their own emotional states may be a risk factor for such condition.

Conclusions: In conclusion, these results are in line with other data found in the field of behavioral addictions and add further reflection for planning more specific clinical intervention programs for individuals addicted to Facebook with narcissistic traits. These may benefit from a greater focus on the impairments in self-monitoring capacities such as emotional awareness. Personality psychopathologies should be targeted by clinical interventions, but also broader functional impairments (as such as alexithymia) should be addressed as more strategic therapeutic objectives in the field of Facebook Addiction.

Key words: grandiose narcissism - vulnerable narcissism - Facebook addiction - alexithymia

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INTRODUCTION

Facebook is an important source of information, sociability and entertainment (Pempek et al. 2009). However, although in most cases it helps people to improve their own sense of wellbeing, if used in excessive, compulsive and uncontrolled way, it can lead to negative outcomes (Chakraborty 2016). In this line, a growing corpus of research underlined several health risks when Facebook use becomes 'pathological' (Mehdizadeh 2010, Muench et al. 2015).

The pathological use of Facebook is now frequently framed within the constructs related to the widest field of behavioral addictions (Rosenberg & Feder 2014). Starting from the knowledge produced on the prototype of behavioral addiction, gambling disorder, several authors advanced the idea that a range of pathological behaviors could be better understood as an addiction in light of the empirical evidences investigating the neurobiological and behavioral similarities between addiction to alcohol or drugs and excessive consume of food, online gaming, sex and others rewarding activities (Griffiths 2012, Kuss & Griffiths 2012, Naish et al. 2018). Of note, the definition of behavioral addictions is far from having reached a consensus and is still debated (Billieux et al. 2015). Regarding Facebook, the clinical picture has been classified within the wide range of

behavioral addictions converging within the umbrella category of Internet Addiction (Rosenberg & Feder 2014). Noteworthy, according to Chakraborty (2016), an excessive use of Facebook does not mean that an addiction has been established. For example, a person may spend long hours on Facebook without being addicted. Conversely, a person with Facebook Addiction (FA) subjectively experiences a loss of control while continuing to use Facebook excessively, with detrimental effects on their life (Rosenberg & Feder 2014). Studies have found that pathological use of the social networks undermines academic performance, creates social difficulties and causes several psychological problems such as depression and loneliness (Subrahmanyam et al. 2008, Ross et al. 2009). Other studies showed that when the connection with the virtual world becomes totalizing, it has a negative impact in terms of problems with interpersonal relationships, daily routine, neglecting important professional, familiar and personal life duties (Ryan et al. 2014, Vaghefi et al. 2016). However, several questions regarding the factors associated with FA remain open.

For instance, personality traits (e.g. Dimaggio et al. 2017) as well as emotion regulation difficulties have been widely studied in their role in predicting several psychopathologies (Garofalo et al. 2018, Gillespie et al. 2018, Velotti et al. 2017), including addictions (e.g. Rogier & Velotti 2018a). In a review on FA, Kuss and

Griffiths (2011) underlined the role of narcissistic personality traits. According to these authors, individuals with high narcissistic traits would be more active on social networks that offer the opportunity to show the best of their own talents, achievements and, in general, the best of their life to a potentially large audience. Moreover, Facebook offers individuals prone to narcissism the opportunity to obtain highly visible rewards and recognition through “likes” and positive comments from other users (Buffardi & Campbell 2008, Mehdi-zadeh 2010, Andreassen et al. 2017).

However, a review of the literature on this association shows that there is no clear evidence on the link between the narcissistic personality and social network addiction (La Barbera et al. 2009, Ekşi 2012, Abou-jaoude 2017). An issue is probably due to the different ways in which ‘narcissism’ is defined in the studies. A broad resonance has been received by the theory and research on Pathological Narcissism (PN). PN is defined as a condition in which there is an intense need for admiration and recognition, combined with difficulty in regulating these needs. Pincus and Lukowitsky (2009) define PN as composed of two facets: *grandiosity* and *vulnerability*. Grandiose Narcissism is characterized by feelings of entitlement, interpersonal manipulateness, and arrogance. Vulnerable Narcissism is characterized by social withdrawal and emotional dysregulation following the painful disappointment of entitled expectations and self-enhancement failures. Of note, Cain, Pincus and Ansell (2008) pointed out that traditionally, empirical studies deserved more attention to the grandiose facet of PN, using for instance instruments as such as the Narcissism Personality Inventory (Raskin & Terry 1988) and overlooking the relevance of the vulnerable dimension that is well measured by the PNI (Pathological Narcissism Inventory; Pincus et al. 2009). Regarding the role of PN in FA, Facebook may represent an attractor for showing grandiose aspects of the person. In a recent study, Andreassen et al. (2017) administering the BFAS (Bergen Facebook Addiction Scale; Andreassen et al. 2012) and the NPI, founding a positive association between them. However, to our knowledge, the role of the two different dimensions of PN has still been poorly explored. A study (Casale & Fioravanti 2018) investigated this issue in a sample of Italian students and found that both the dimensions of the PNI were positively and significantly correlated with levels of FA, measured with BFAS. However, authors observed that only grandiose narcissism, but not vulnerable narcissism, predicted BFAS scores. Moreover, results showed that the relationship between grandiose narcissism and FA was completely mediated by the need to belong and the need for admiration. The data regarding the relationship between vulnerable narcissism and FA seemed quite surprising as previous studies observed that individuals with high vulnerable narcissism prefer online vs face-to face interactions (Ksinan & Vazsonyi 2016) and are more prone to use social networks to regulate negative emotional states

compared to individual with elevated grandiose narcissism (Casale et al. 2016). Thus, the contrasting nature of these few results requires further study to disentangle the role played by grandiose and vulnerable narcissism in FA.

In addition to psychosocial variables (e.g. the need to belong and the need for admiration), other components are potential explicators of the pathway through which PN leads to excessive use of social networks. For instance, emotion dysregulation has been considered a central component of other behavioral addictions, like gambling disorder (Marchetti et al. 2019, Rogier & Velotti 2018a) and video gaming (Loredana et al. 2019). Theoretically, an excessive use of Facebook has been thought to regulate negative emotions related to the frustration of interpersonal needs (Ryan et al. 2014; Valkenburg et al. 2005). Concerning FA, some preliminary evidences support the idea that social network addiction may result from an attempt to escape negative feelings (Hormes 2016, Wegmann et al. 2015, Hormes et al. 2014).

A central dimension of emotion dysregulation is alexithymia, characterized by impairments in the ability to identify and describe feelings with several problems in emotional processing. Individuals with narcissistic disorders have difficulties with emotional states, in particular: (1) in identifying triggers for their emotions; (2) in differentiating feelings from somatic experiences; (3) in describing their feelings to other people; (4) in understanding the differences between their emotions and others’ emotions; (5) in empathy, e.g. emotional responses to others’ feelings (Dimaggio et al. 2006, Ronningstam 2016). Alexithymia has been previously associated to both PN (Krystal 1998), Internet Addiction symptoms (Schimmenti et al. 2017), emotional behavioral problems (Muzi & Pace 2020) and Social Media Disorder (Muzi et al. 2020). However, concerning FA, the topic of alexithymia remains poorly investigated. Furthermore, it is still not clear if difficulties in the capacity to regulate negative emotions can be considered an additional explanation of FA beyond the role played by pathological personalities such as narcissism.

The current study aims to explore the connections between FA, grandiose and vulnerable narcissism and alexithymia. In particular, we hypothesize that: (1) FA will correlate with PN (Grandiose and Vulnerable Narcissism) and alexithymia dimensions; (2) Levels of alexithymia will predict FA above and beyond the role of narcissism.

METHODS

Participants

A total of 270 subjects completed the procedure. Participants ($M_{age}=41.05$; $SD=14.05$) were recruited throughout a snowball sampling technique by undergraduate students of the University of Genoa. 78.5% participants of the sample were male and most of them obtained a high school diploma (47.4%) and declared a level of income under 36,000 euros (49.6%).

We collected information about alcohol consumption habits of our participants, founding that 17% of participants had never drunk alcohol, 17.4% of them drunk alcohol less than once a month, 31.9% of subjects drunk 2 to 4 times a month, 19.6% of subjects drunk 2 or 3 times a week and 13.7% 4 or more a week. Also, drug use has been explored with only 14 subject (5.2%) using drugs.

Procedure

Individuals who agreed to participate to the study provided a written consent after the delivery of information about the aims and the scope of the study as well as information about anonymity and privacy. The research procedure has been conducted in line with the official directions established by the American Psychological Association and has been approved by the Research Ethic Board of the Department of XXXXXXXX (N.28/2017).

Materials

The *Bergen Facebook Addiction Scale* (BFAS, Andreassen et al. 2012, Soraci et al. 2020) is a self-report questionnaire investigating FA. Six items investigate the experiences occurring over the past year, rated on a 5-point Likert scale, from 'very rarely' (1) to 'very often' (5). Higher scores indicate higher levels of FA. In the present study, internal consistency of the BFAS was good ($\alpha=0.80$).

The *Pathological Narcissism Inventory* (PNI, Pincus et al. 2009, Fossati et al. 2018) is a self-report questionnaire assessing PN levels in its two main dimensions: Narcissistic Grandiosity and Narcissistic Vulnerability. From Grandiosity dimension, four subscales are derived: 'exploitative' (EXP), 'self-sacrificing-self-enhancement' (SSSE), 'grandiose fantasy' (GF) and 'entitlement rage' (ER). The Vulnerability dimension results from the following subscales: 'contingent self-esteem' (CSE), 'hiding the self' (HS) and 'devaluing' (DEV). The overall number of items is 52, rated on a 6-point Likert scale, from 'It does not describe me at all' (1) to 'It describes me perfectly' (6). In the present study, the internal consistency of the instrument was excellent ($\alpha=0.91$ for Grandiosity; $\alpha=0.95$ for Vulnerability). On the subscales, internal consistency was from high to acceptable ranging from $\alpha=0.73$ (EXP) to $\alpha=0.92$ (CSE).

The *Toronto Alexithymia Scale-20* (TAS-20, Bagby et al. 1994, Bressi et al. 1996) is a self-report questionnaire assessing alexithymia. Three interrelated dimensions are derived from the instrument: Difficulty Identifying Feelings, Difficulty Describing Feelings and Externally Oriented Thinking. The sum of the subscale scores produces an overall alexithymia score, where higher scores indicate greater alexithymia levels. The overall number of items is 20, rated on a 5-point Likert scale, ranging from 'strongly disagree' (1) to 'strongly

agree' (5). In the present study, internal consistency of the overall score was high ($\alpha=0.83$). For the subscales, internal consistency ranged from 0.63 (Externally Oriented Thinking) to 0.83 (Difficulty Identifying Feelings).

RESULTS

Correlations among Facebook Addiction, Pathological Narcissism and Alexithymia

Partial correlations, controlling for age and gender, show positive and significant associations between BFAS and PNI scores (see Table 1). In particular, BFAS scores are significantly correlated with both Grandiose and Vulnerable Narcissism. Grandiose Narcissism also correlates positively and significantly with TAS-20 dimensions, apart from the Externally Oriented Thinking one. Finally, BFAS score results positively and significantly correlated with TAS-20 total and the Difficulty Identifying Feelings dimension scores.

The role of pathological narcissism in Facebook addiction

Sex and age were inserted as predictors of BFAS scores in the first model of the hierarchical regression analysis (see Table 2). This model ($R^2=0.23$, $p<0.001$) shows that age ($p<0.001$), but not sex ($p=0.122$) significantly predict BFAS scores. Then, Grandiose and Vulnerable Narcissism have been added in the second model of regression analysis. Results ($R^2=0.32$, $p<0.001$) show that Grandiosity ($p=0.003$) but not Vulnerability ($p=0.454$) predict BFAS scores. Finally, the third model ($R^2=0.33$, $p<0.001$), adding the Difficulty Identifying Feelings dimension to the equation, shows that this significantly predicts BFAS scores above and beyond the variance explained by PNI scores ($p=0.032$).

DISCUSSION

This study aimed at investigating the role of alexithymia and PN in FA. Data supported our first hypothesis towards the associations between alexithymia and both FA and PN. In particular, the difficulty in identifying feelings was significantly associated with FA levels, while the other two dimensions were not. This is in line with the study of De Berardis et al. (2009) where the Difficulty Identifying Feelings factor predicted internet addiction severity. Moreover, this result converges with past studies documenting the association between others behavioral addictions as such as gambling disorder and both alexithymia and pathological personality (e.g. Loredana et al. 2019, Rogier et al. 2020, Rogier & Velotti 2018b). Furthermore, the dimensions of PN correlated with most of the TAS-20 subscales, apart from external oriented thinking. However, the low reliability index of this subscale in our study suggests that this data should be interpreted with caution.

Table 1. Correlations among the BFAS, PNI and TAS-20 scores in the overall sample of N=270 subjects

	BFAS	TAS	TAS DIF	TAS DDF	TAS EOT	PNI CSE	PNI EXP	PNI SSE	PNI HS	PNI GF	PNI DEV	PNI ER	PNI NG	PNI NV
BFAS	-													
TAS	0.19**	-												
TAS DIF	0.26**	0.80**	-											
TAS DDF	0.08	0.79**	0.48**	-										
TAS EOT	0.07	0.71**	0.28**	0.38**	-									
PNI CSE	0.27**	0.49**	0.57**	0.34**	0.13*	-								
PNI EXP	0.19**	0.01	0.12*	-0.06	-0.05	0.30**	-							
PNI SSE	0.22**	0.22**	0.31**	0.11	0.06	0.55**	0.43**	-						
PNI HS	0.19**	0.47**	0.36**	0.54**	0.19**	0.54**	0.37**	0.48**	-					
PNI GF	0.32**	0.32**	0.45**	0.22**	0.04	0.70**	0.48**	0.63**	0.50**	-				
PNI DEV	0.24**	0.48**	0.52**	0.36**	0.21**	0.70**	0.37**	0.43**	0.62**	0.53**	-			
PNI ER	0.31**	0.38**	0.44**	0.24**	0.19*	0.71**	0.49**	0.59**	0.54**	0.73**	0.71**	-		
PNI NG	0.33**	320.**	0.43**	0.18**	0.09	0.72**	0.67**	0.80**	0.58**	0.90**	0.66**	0.89**	-	
PNI NV	0.28**	0.54**	0.57**	0.46**	0.19**	0.91**	0.39**	0.59**	0.79**	0.69**	0.87**	0.76**	0.77**	-

Note: BFAS = Total score Bergen Facebook Addiction Scale; TAS = Total score Toronto Alexithymia Scale-20; TAS DIF = TAS subscale Difficulty Identifying Feelings; TAS DDF = TAS subscale Difficulty Describing Feelings; TAS EOT = TAS subscale External Oriented Thinking; PNI CSE = Pathological Narcissism Inventory subscale Contingent Self-Esteem; PNI EXP = PNI subscale Exploitative; PNI SSE = PNI subscale Self-Sacrificing Self-Enhancement; PNI HS = PNI subscale Hiding the Self; PNI GF = PNI subscale Grandiose Fantasy; PNI DEV = PNI subscale Devaluing; PNI ER = PNI subscale Entitlement Rage; PNI NG = PNI scale Narcissistic Grandiosity; PNI NV = PNI scale Narcissistic Vulnerability; * $p < 0.05$; ** $p < 0.001$

Table 2. Hierarchical multiple regression assessing the independent contribution of pathological narcissism and alexithymia in predicting Facebook addiction

Factors	Model 1 ($R^2 = 0.23, p < 0.001$)				Model 2 ($R^2 = 0.32, p < 0.001$)				Model 3 ($R^2 = 0.33, p < 0.001$)			
	β	t	p	sr	β	t	p	Sr	β	t	p	sr
Constant	12.20	15.03	0.001	0.81	7.60	6.78	0.001	1.12	7.32	6.53	0.001	1.12
Age	-0.11	-8.52	0.001	-0.01	-0.09	-6.80	0.001	0.01	-0.09	-6.93	0.001	0.01
Sex	0.68	1.55	0.122	0.44	0.70	1.68	0.095	0.42	0.73	1.75	0.081	0.41
PNI NG					0.04	3.00	0.003	0.01	0.04	3.07	0.002	0.01
PNI NV					0.01	0.75	0.454	0.01	-0.01	-0.22	0.824	0.01
DIF									0.08	2.16	0.032	0.04

Note: *Italics* β are statistically significant; PNI NG = Pathological Narcissism Inventory Narcissistic Grandiosity; PNI NV = Pathological Narcissism Inventory Narcissistic Vulnerability; DIF = Toronto Alexithymia Scale 20 items Difficulty Identifying Feelings

In addition, we found that all PNI dimensions were positively and significantly related to FA levels. Of note, this is the first study to display data concerning the relationships between FA and the subscales converging in the two main dimensions of PN. Regarding facets of grandiose narcissism, the strongest correlations observed were related to *Grandiose Fantasy* and *Entitlement Rage* subscales. As already stressed by other authors, individuals characterized by grandiose narcissism may (mis)use Facebook as a mean to support their grandiose image of the self throughout the excessive and frequent management and promotion of their personal profile. In relation to the *Entitlement Rage* dimension, our results extend previous literature suggesting that individuals with high levels of grandiose narcissism show a lack of emotional reciprocity in Facebook interactions. For instance, Carpenter (2012) observed that individuals with high levels of Entitlement -Exhibitionism, connected with the belief that one deserves a special treatment and the proneness to ignore others' emotional needs, tend to react aggressively to negative comments posted by others. Moreover, these individuals have been shown to frequently spy others' profile, seeking for comments related to the self (Carpenter, 2012). This activity may potentially explain why the *Entitlement Rage* dimension of grandiose narcissism is positively associated with FA levels.

Contingent Self-Esteem was the dimension of vulnerable narcissism that showed the strongest association with FA. This is in line with previous studies highlighting the link between maladaptive use of social networks and fragile self-esteem (Andreassen et al. 2017). Our data extend previous literature, showing that not only low levels of self-esteem predict maladaptive Facebook use but also fragile self-esteem should be interpreted as excessively dependent on others' feedback. The need to obtain continuous positive feedbacks from others and high levels of rejection sensitivity appear to be components of PN, especially linked to FA. In this light, for individual with pathological narcissism, Facebook is not just a window used to display their own grandiose characteristics but it may also be used as a mean to obtain reassurances when the need for admiration is frustrated.

In this line, after these preliminary analyses, we tested the role of the two main variables, PN and alexithymia, on FA controlling for gender and age. Hypothesis has been supported for Grandiose but not for Vulnerable Narcissism. This datum is in line with previous literature (Casale & Fioravanti 2018) attesting that Facebook stimulates the exhibition of people's life aspects and ambitions, and it is an arena where individuals with grandiose traits might be prone to become addicted. A great deal of attention has been given to the idea that narcissistic personalities in general tend to seek the satisfaction of narcissistic needs through the use of social networks, wishing for positive online feedback like the famous Facebook "Likes". Our results confirm that the grandiose dimension of narcissism may predominantly explain this behavior. Thus, data suggests that

Vulnerable Narcissism does not explain FA beyond the role of grandiose narcissism. Clinically, this may indicate that grandiose facets of narcissism should be primarily focused in Facebook addiction treatment and that vulnerable aspects should be considered secondary targets of clinical interventions.

Noteworthy, when we tested the role of alexithymia, we found that the difficulty to identify feelings predicted FA levels above and beyond the role of PN. This data supports the idea that emotion dysregulation is a common mechanism underlying addictions. Deficits in the capacity to regulate emotional states has already been depicted as central factors accounting for the development and maintenance of Gambling Disorder (Rogier & Velotti 2018a). A growing number of published researches argues that failures occurring in different steps of emotion regulation should be considered transdiagnostic markers of a wide range of psychopathologies (e.g. Werner & Gross 2010, Garofalo et al. 2018). Our study suggests that FA is not an exception to the rule and that alexithymia may be a strategic target of clinical interventions for Facebook addicted with narcissistic personality traits. For instance, targeting the capacity of the individual to identify and verbalize negative emotional states related to the narcissistic need for recognition from others may help him/her to reach an awareness of dysfunctional beliefs underlying sensitivity to shame or fear of shame and, in turn, to foster the implementation of functional emotion regulation strategies. This would be likely to reduce the need for the individual to use Facebook as a regulator of negative affects.

Specifically, alexithymia is a strong barrier to psychological treatments as it impedes the recognition of emotional distress and the restructuring of related distorted beliefs. For instance, this feature is a significant predictor of a poor engagement in psychotherapeutic process and a poor quality of therapeutic alliance (Ogrodniczuk et al. 2006). Also, it has been shown that individuals with Personality Disorders and alexithymia show more interpersonal problems compared to non-alexithymic patients with Personality Disorders (Nicolò et al. 2011). As FA is thought to be characterized by interpersonal problems (Sheldon et al. 2011), this may explain why, in our sample, alexithymia predicted levels of Facebook addiction beyond the role of PN. From this perspective, further studies may want to longitudinally test the mediational role of alexithymia in the pathways linking pathological personality to FA. As stressed by Dimaggio et al. (2006), clinicians should shift from a descriptive to a more processual approach to mental functioning of individuals with Personality Disorders. In this sense, treatment for Facebook addicted with narcissistic traits may benefit from a greater focus on the impairments in self-monitoring capacities such as emotional awareness. Personality psychopathologies (e.g. PN) should be targeted by clinical interventions but also broader functional impairments (as such as alexithymia) should be addressed as more strategic therapeutic objectives in the field of FA.

Limitations and future directions

The findings regarding the relationships between alexithymia, PN and FA contain several limitations and they give an interesting stimulus for further research. Certainly, the sample size represents a limitation of the study and it should be further increased. Also, our sample mostly included men. Therefore, our results are less likely to be generalized to a population of women. Moreover, the cross-sectional design of this study limits the possibility to infer causality. Also, the role of other third variables needs to be considered in future studies. Moreover, according to Griffiths (2012), BFAS has been developed to assess addiction to one particular commercial company's service (i.e., Facebook) rather than the whole activity itself (i.e., social networking). Further distinctions between the different constructs on the topic of internet addiction are required.

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Contribution of individual authors:

Guyonne Rogier performed the analysis and contributed to write the draft.

Rosetta Castellano wrote the draft of the paper.

Patrizia Velotti conceived of the idea and performed verified the analytical methods. She supervised the findings of this work.

All authors discussed the results and contributed to the final manuscript.

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