

The associations between pathological narcissism, alexithymia and disordered eating attitudes among participants of pro-anorexic online communities

Gadi Zerach

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Abstract

Purpose This study investigated the relationships between pathological narcissism, alexithymia, and disordered eating attitudes among participants of pro-anorexic online communities. Specifically, we explored the possible moderating role of alexithymia in the relationships between narcissistic vulnerability and disordered eating attitudes.

Methods Participants included 97 Israeli female young adults who are active participants in pro-anorexic online communities. These participants completed a battery of self-reported questionnaires: The Pathological Narcissism Inventory (PNI); The Eating Attitudes Test-26 (EAT-26); and The Toronto Alexithymia Scale (TAS-20).

Results Narcissistic grandiosity, vulnerability, and alexithymia were positively related to disordered eating attitudes. Alexithymia moderated the relationships between narcissistic vulnerability and the total score of disordered eating attitudes. Furthermore, alexithymia moderated the relationships between both narcissistic vulnerability and grandiosity and the oral control subscale of EAT-26.

Conclusions These findings highlight the interaction between the pathological narcissism and the fundamental trait of alexithymia that might put individuals at risk for disordered eating.

Keywords Narcissistic vulnerability · Narcissistic grandiosity · Pathological narcissism · Alexithymia · Disordered eating

Introduction

Pathological narcissism

Pathological narcissism is driven by an intense need for admiration and recognition, combined with difficulty in regulating these needs [1]. Whereas clinical psychologists and psychiatrists tend to focus on grandiosity as a core feature of narcissistic personality disorder (NPD; [2]), social-personality psychologists view pathological narcissism as comprised of two facets: grandiosity and vulnerability. Narcissistic grandiosity (NG) is characterized by feelings of entitlement, interpersonal manipulateness, and arrogance. Narcissistic vulnerability (NV) is characterized by social withdrawal and emotional dysregulation following the painful disappointment of entitled expectations and self-enhancement failures [3]. Though NV shares some features with NG (i.e., sense of entitlement, grandiose fantasies), the two were found to be distinctive constructs [4].

The relationship between narcissism and disordered eating behaviors and cognitions has been established in the literature [5]. Furthermore, studies have found that narcissistic features characterize patients with eating disorders more than other psychiatric disorders [6]. However, the majority of studies in this field focused on the relations between NPD or grandiosity and eating disorder symptoms. Only few studies examined the associations between the two facets of narcissism and disordered eating separately [7].

Among these studies there is consistency regarding the finding that aspects of NV (i.e., hypersensitivity) are positively correlated with symptoms of eating disorders such as weight preoccupation or drive for thinness among male and female undergraduates [7, 8]. Aspects of NV

G. Zerach (✉)
Ariel University, Ariel 40700, Israel
e-mail: gadize@ariel.ac.il

were also related to body-related avoidance behaviors among women with diagnosed eating disorders [9]. However, there is inconsistency regarding the role of NG in eating behaviors. One study found NG to negatively correlate with weight preoccupation [8]. Other studies found that aspects of NG were unrelated to a drive for thinness [7] and were positively associated with higher levels of a drive for muscularity among male and female undergraduates.

As for purging disordered eating behaviors, NV was found to positively correlate with bulimic symptoms [7, 10, 11]. Aspects of NG—narcissistic leadership and exhibitionism—were found to be unrelated to bulimic symptoms [11]. However, aspects of NG (“Core narcissism”) were positively associated with excessive exercise [10] and body-related comparison and display behaviors among women with diagnosed eating disorders [9].

Alexithymia

Alexithymia is characterized by difficulties in identifying feelings and differentiating between feelings and bodily sensations, difficulties in describing feelings to others, and a concrete cognitive style focused on the external environment [12]. Most studies found high levels of alexithymia in individuals with eating disorders and disturbed eating compared with healthy controls [13]. Specifically, these individuals have difficulties identifying and describing their feelings [14].

Few studies have found alexithymia to positively relate to narcissism [15], and only one study focused on associations between “core narcissism” and “narcissistic defenses” and alexithymia among eating-disordered patients [16]. These study findings indicate that “core narcissism” (e.g., grandiosity, entitlement) was associated with difficulties in describing feelings to others, whereas the “narcissistic defenses” (e.g., placing the needs of others before one’s own needs, but with a tendency to present oneself as ‘martyred’) were associated with difficulties in identifying feelings.

To the best of our knowledge, no studies specifically address the relationships between the concepts of NG and NV and alexithymia. A few studies have shown that individuals with narcissistic characteristics have difficulty in identifying triggers for their emotions [17], and both alexithymia and narcissism were found to be positively associated with disordered eating [7, 11]. Furthermore, a previous study found a positive association between emotional awareness and aspects of narcissism in patients with eating disorders [16]. However, a question remains regarding the possible moderating role of alexithymia in the relations between the two facets of narcissism and disordered eating behaviors and attitudes.

The current study hypothesized that individuals with high levels of both pathological narcissism and alexithymia may display higher levels of disordered eating attitudes. Specifically, it is suggested that the subjective distress experienced in pathological narcissism [3] might lead individuals toward disordered eating. However, these relationships will be stronger among those individuals with alexithymic difficulties, who might express these emotions through acts of eating restriction. Preliminary findings to support this line of thought come from the study of Van Strien and Ouwens [18] who found that alexithymia moderated the relationship between distress and food consumption. Females with higher degrees of the alexithymic aspect, ‘difficulty identifying and describing feelings’, ate the same or even more (thus showing a ‘biological unnatural’ and ‘inapt’ response) in the high-distress condition, compared with those in the low-distress condition.

Pro-anorexia (‘pro-ana’) websites

Over the past 15 years, together with the rise in the prevalence of eating disorders [19], the number of pro-anorexia (‘pro-ana’) websites has also grown and emerged as a new form of online gathering space for individuals with disordered eating. Pro-anorexia websites take a positive and encouraging attitude towards eating disorders. They explicitly encourage extreme thinness and advocate anorexia as a lifestyle choice rather than an illness. These websites have been a cause for concern among clinicians [20]. Specifically, concerns were raised regarding the possibility of negative modeling in the form of eating-related themes of control, success, and perfection [21]. Furthermore, studies have found elaborated “Tips and Tricks” that are directed at dieting/restricting calories, at distraction, and even at lying and concealing symptoms [22]. Indeed, members of these communities were found to display high levels of disordered eating and were motivated by weight-loss advice and social support that they received via this media [23].

The pro-anorexic online communities are platforms on which individuals publicly expose their diet rituals and are able to communicate their thoughts and feelings in a “safer” cyberspace [24]. Although alexithymia has been linked to aspects of pathological narcissism among a clinical group of eating-disordered patients [16], it is not clear whether these links would be found among individuals that hold ‘pro-anorectic’ attitudes but have not necessarily been diagnosed with eating disorders. As ‘pro-ana’ communities provide ‘safe’ and anonymous cyberspace, it is of great interest to examine the links between mostly hidden shameful emotions of self-worth (i.e., pathological narcissism) and the capacity to recognize and communicate

these emotions to others (i.e., alexithymia). This study aims to fill this void by examining the relations between NV and NV, alexithymia and disordered eating.

Therefore, we hypothesize that (1) NV will be positively associated with diet, oral control, and bulimia disordered eating dimensions; (2) NG will be positively associated with diet, oral control, and negatively associated with bulimia; (3) Both NV and NG will be positively associated with alexithymia; (4) Alexithymia will be positively associated with diet, oral control, and bulimia; (5) Alexithymia will moderate the relationship between NV and restrictive disordered eating (Diet and Oral control dimensions).

Methods

Participants and procedure

The participants were 97 Israeli young-adult females who are active members in three pro-anorexic ('Pro-Ana') online communities. Those communities were selected if their content placed emphasis on the pursuit of thinness and promoted this choice of lifestyle. The investigator's research assistant had posted a message briefly explaining that she was conducting a research project focusing on 'attitudes toward Anorexia' and asking for possible participants. Participants who respond to this message were given a link to an electronic self-report questionnaire through an online data gathering website. Participants were required to affirm willingness to participate and by their active participation provided informed consent. No personal identifying information was collected. All procedures were approved by the university's internal review board.

The of participants' age ranged from 18 to 34 ($M = 22.51$, $SD = 2.82$) and the mean body mass was 18.55 ($SD = 1.92$). Most of the participants were born in Israel (93.8 %, $n = 91$) and were working in full or part-time jobs (76.2 %, $n = 74$). Sixty percent ($n = 59$) of the sample defined themselves as secular and 64.9 % ($n = 63$) reported having full academic education or being in academy at the time of the study. 87.6 ($n = 85$) were single and 63.9 % ($n = 62$) defined their socio-economic status as 'average' as compared with the SES in Israel.

Measures

The pathological narcissism inventory

The pathological narcissism inventory (PNI [25]) was used to assess grandiose and vulnerable aspects of pathological narcissism. The PNI is a 52-item measure for which responses are made on scales ranging from 0 (not at all like me) to 5 (very much like me). This instrument assesses

seven dimensions of pathological narcissism: contingent self-esteem (e.g., "It's hard for me to feel good about myself unless I know other people like me"), exploitative tendencies (e.g., "I find it easy to manipulate others"), self-sacrificing self-enhancement (e.g., "I try to show what a good person I am through my sacrifices"), hiding of the self (e.g., "When others get a glimpse of my needs, I feel anxious and ashamed"), grandiose fantasy (e.g., "I often fantasize about being recognized for my accomplishments"), devaluing (e.g., "When others don't meet my expectations, I often feel ashamed about what I wanted"), and entitlement rage (e.g., "It irritates me when people don't notice how good a person I am"). The seven dimensions load onto the two higher-order factors of grandiose narcissism (exploitative, self-sacrificing self-enhancement, and grandiose fantasy) and vulnerable narcissism (contingent self-esteem, hiding the self, entitlement rage, and devaluing). The PNI reliability was found to be high and its validity examination has shown that it is correlated in the expected direction with other measures of narcissism (e.g., NPI) as well as related constructs such as self-esteem and psychological symptoms (e.g., [26]). The PNI was translated and adapted to Hebrew for the purpose of another study [27] and has shown high internal consistencies of NV and NG (0.89 and 0.90, respectively). In the present study, the internal consistencies of the PNI grandiosity and vulnerability subscales were 0.90 and 0.96, respectively.

The Eating Attitudes Test-26 (EAT-26)

The EAT-26 [28] is a shortened version of the EAT-40 questionnaire for the study of attitudes and behaviors characteristic of eating disorders in a variety of population groups. It is comprised of three subscales: the diet subscale relating to avoidance of fattening food and preoccupation with being thin; the bulimia and food preoccupation subscale measuring thoughts about food, particularly cognitions representative of bulimia; and the oral control subscale related to perceived pressure from external people to gain weight and self-control over eating. The EAT-26 responses were made on scales ranging from 1 (never) to 6 (always) The EAT-26 has demonstrated sound reliability and validity in identifying individuals at risk of an eating disorder [29]. An EAT-26 total score of 20 or higher indicates strong body image concerns and disordered eating behaviors. The questionnaire was translated into Hebrew and was validated on a sample of female soldiers in their late teens. The EAT-26 translation was found to be highly reliable. The factor structure is different from that obtained in clinical groups, and the EAT-26 was significantly correlated with body image, weight, and diet [30]. In the present study, the internal consistency of the EAT-26

total score was 0.94 and consistencies for the sub-scales were 0.92 for ‘dieting’, 0.81 for ‘bulimia’ and 0.84 for ‘oral control’.

The Toronto alexithymia scale (TAS-20)

The TAS-20 [31]. The TAS-20 is the most widely used tool measuring alexithymia. The scale yields a global alexithymia score and three subscale scores representing different cognitive facets of the construct: difficulty identifying feelings, difficulty describing feelings, and external oriented thinking. The first two refer to a cognitive inability to process emotional information at an explicit level, whereas the third refers to a tendency to focus attention on external events rather than on internal emotional experiences, as a cognitive style. The scale consists of 20 items and each item is rated on a 5-point Likert scale, ranging from “strongly disagree” to “strongly agree”. Scores range from 20 to 100. The scale has well-established psychometric properties [32]. It was translated to Hebrew and has confirmed the structure of the three factors on a sample of female students. The reliabilities of the total scale and the subscales ranged from 0.68 to 0.84 [32]. In the present study, the internal consistency of the TAS-20 total was high ($\alpha = 0.91$).

Data analysis

Data analysis was divided into three stages. First, we calculated the rates of participants who reported themselves as underweight (BMI) and above the cut-off score in the EAT-20. Second, the relationships between pathological narcissism, alexithymia and disordered eating dimensions, were examined with a series of Pearson correlation analyses. Third, in order to examine the unique contribution of the independent variables and the moderating role of

alexithymia to disordered eating dimensions, a four-step hierarchical regression analysis was performed.

Results

Our first aim was to examine descriptive statistics of the participants. Body mass index is defined as the individual’s body mass divided by the square of their height. Our results show that 54.4 % ($N = 43$) were underweight (BMI < 18.5). Furthermore, 76.3 % ($N = 74$) of the participants had a total score of above 20 in the EAT-26 inventory indicating disordered eating behavior.

Our next aim was to examine the relationships between the study variables. As hypothesized and as can be seen in Table 1, NG was strongly positively related to NV and both were positively related to alexithymia. NV was positively related to EAT-26 diet and oral control subscales and had a lower magnitude correlation with the bulimia subscale. NG was also positively related to EAT-26 diet and oral control subscales. However, contrary to our hypothesis NG was positively correlated with the bulimia subscale. Alexithymia was positively related to diet, bulimia, and oral control. It is worth noting that BMI score was negatively related to NG and NV, and to diet and oral control subscales, but was not significantly correlated with the bulimia subscale.

Our next aim was to examine the relative contributions of NG and NV and alexithymia to the total EAT-26 score and its subscales. Due to detection of possible multicollinearity between NG and NV ($VIF > 4$), we decided to conduct regression analyses separately for NV and NG. In each regression we also examined the moderating role of alexithymia on the associations between NV and disordered eating, and between NG and disordered eating. In order to do so, two sets of four three-step hierarchical

Table 1 Pearson correlation coefficients of narcissism grandiosity and vulnerability, alexithymia, BMI and EAT-26 disordered eating dimensions

	2	3	4	5	6	7	8
1. Narcissism grandiosity							
2. Narcissism vulnerability	–						
3. Alexithymia	0.69***	–					
4. Diet	0.73***	0.62***	–				
5. Bulimia	0.49***	0.53***	0.63***	–			
6. Oral control	0.58***	0.62***	0.71***	0.34***	–		
7. EAT-26 total score	0.73***	0.69***	0.96***	0.71***	0.81***	–	
8. BMI	–0.41***	–0.34***	–0.30***	–0.10	–0.46***	–0.34***	–
Mean	3.11	55.31	19.21	6.12	8.52	33.26	18.55
Standard deviation	1.0	16.25	10.80	4.30	5.69	18.22	1.92

** $p < 0.01$, *** $p < 0.001$

regression analyses were conducted. All the variables were standardized before inclusion in the regression models. In the first step of each regression, we entered age and BMI as control variables. In the second step, we entered NV/NG and alexithymia variables. In the last step, we entered the two-way interaction between NV/NG and alexithymia.

In the first set of regression analyses (with NV and without NG), the total set of variables explained 63 % of the variance of the total EAT-26 score [$F(5, 96) = 31.61, p < 0.00$]; 59 % of the variance of the diet subscale [$F(5, 96) = 26.70, p < 0.00$]; 33 % of the variance of the bulimia subscale [$F(5, 96) = 9.23, p < 0.00$]; and 52 % of the variance of the oral control subscale [$F(5, 96) = 19.96, p < 0.00$]. As can be seen in Table 2, in the last model of the regressions, we found that above and beyond age and BMI score, both NV and alexithymia significantly contributed to all disordered eating dimensions. The higher the levels of NV and alexithymia that participants reported, the higher their level of disordered eating. Specifically, NV strongly contributed to the diet subscale.

Importantly, we found that alexithymia moderated the associations between NV and the total EAT-26 score and oral control subscale. We also found a marginal effect for this moderating effect in the diet subscale. Thus, our hypothesis was partially supported. In order to examine the moderating role of alexithymia, we conducted post hoc probing for this possible moderator using the PROCESS procedure [33]. We separated these variables into two by adding and subtracting one standard deviation from the value for each participant. In this analysis 5,000 bootstrapped samples were drawn to estimate moderating effect. The results show that for those who reported high levels of alexithymia, we found positive association between NV and EAT-26 total score ($b = 0.71, p < 0.001$) and oral control ($b = 0.54, p < 0.001$). For those who reported low levels of alexithymia we found a lower level magnitude of association between NV and EAT-26 total score ($b = 0.40, p < 0.01$), and we did not find a significant association between alexithymia and oral control. Hence, if a participant endorsed high levels of alexithymia and was also characterized with high levels of NV, then the probability of him or her reporting high levels of disordered eating increased.

In the second set of regression analyses (with NG and without NV), the total set of variables explained 68 % of the variance of the total EAT-26 score [$F(5, 96) = 24.96, p < 0.00$]; 51 % of the variance of the diet subscale [$F(5, 96) = 19.19, p < 0.00$]; 30 % of the variance of the bulimia subscale [$F(5, 96) = 7.88, p < 0.00$]; and 55 % of the variance of the oral control subscale [$F(5, 96) = 21.89, p < 0.00$]. As can be seen in Table 3, in the last model of the regressions, we found that above and beyond age and BMI score, alexithymia significantly contributed to all

disordered eating dimensions while NG significantly contributed to total EAT-26 score and diet and oral control subscales.

We also found that alexithymia moderated only the association between NG and the oral control subscale. In order to examine the moderating role of alexithymia, we conducted post hoc probing for this possible moderator using the PROCESS procedure [33]. In this analysis 5,000 bootstrapped samples were drawn to estimate moderating effect. We separated these variables into two by adding and subtracting one standard deviation from the value for each participant. The results show that for those who reported high levels of alexithymia, we found a positive association between NG and oral control ($b = 0.53, p < 0.001$). For those who reported low levels of alexithymia we did not find any significant association between NG and oral control ($b = 0.20, p = 0.06$). Hence, if a participant endorsed high levels of alexithymia and was also characterized with high levels of NG, then the probability of him or her reporting high levels of oral control disordered eating increased.

Discussion

Our findings show that the two facets of pathological narcissism, i.e., grandiosity and vulnerability were positively related to disordered eating attitudes. While the relationship between single unitary dimension of narcissism and disordered eating behaviors has been established in the literature [5], this study is one of the first to report about the associations between two subtypes of pathological narcissism and a range of eating disorder symptoms. In this study 76.3 % of the participants scored above the EAT-26 threshold for eating disorders and 54.4 % were underweighted. Thus, the findings regarding the relations between pathological narcissism and disordered eating behaviors can be cautiously ascribed to young adult females who are active members of pro-anorexic online communities and who most likely suffered from eating disorders symptoms and specifically anorexia nervosa.

It is worth noting that only about half of the participants reported themselves as underweight (BMI of below 18.5 %). This surprising finding can be attributed to the fact that this is a non-clinical sample. Thus, it might represent women who have disordered eating cognitions but not a full-blown eating disorder. Furthermore, the sample might consist of participants in remission from anorexia or in a morbid process toward anorexia. All might find the virtual community a “safer” cyberspace to get social support [23, 24].

As for the inconsistency regarding the role of NG in eating behaviors, our results regarding the positive

Table 2 Regression coefficients of EAT-26 disordered eating dimensions by narcissism vulnerability, alexithymia and their interaction

Predicting variables	EAT-26 total			Diet			Bulimia			Oral control		
	β	SEB	$R^2\Delta$	β	SEB	$R^2\Delta$	β	SEB	$R^2\Delta$	β	SEB	$R^2\Delta$
Step I			13.9 %***			11.8 %**			0.2 %*			21.9***
Age	-0.13	0.12		0.16	0.12		-0.09	0.10		-0.05	0.11	
BMI	-0.34***	0.11		-0.30**	0.11		-0.09	0.11		-0.46***	0.10	
Step II			47.5 %***			46.2 %***			31.7 %***			26.4 %***
Age	-0.10	0.08		-0.14	0.09		-0.06	0.10		-0.00	0.09	
BMI	-0.02	0.08		0.02	0.10		0.11	0.10		-0.24*	0.09	
Narcissism vulnerability	0.49***	0.08		0.59***	0.09		0.30**	0.11		0.22*	0.10	
Alexithymia	0.33***	0.09		0.20*	0.09		0.37***	0.10		0.38**	0.10	
Step III			2.0 %*			0.2 %			0.1 %			0.4 %**
Age	-0.13	0.09		-0.16*	0.09		0.17	0.10		-0.06	0.10	
BMI	0.02	0.08		0.05	0.10		-0.07	0.11		-0.17**	0.11	
Narcissism vulnerability	0.57***	0.10		0.66***	0.08		0.32**	0.11		0.34***	0.10	
Alexithymia	0.33***	0.08		0.21**	0.08		0.37***	0.10		0.39***	0.09	
NV* Alexithymia	16*	0.06		0.14 [^]	0.06		0.04	0.07		0.24**	0.07	
Adjusted R^2		0.63***		0.59***		0.34***						0.52***

NV Narcissism vulnerability

[^] $p < 0.07$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3 Regression coefficients of EAT-26 disordered eating dimensions by narcissism grandiosity, alexithymia and their interaction

Predicting variables	EAT-26 total			Diet			Bulimia			Oral control		
	β	SEB	$R^2\Delta$	β	SEB	$R^2\Delta$	β	SEB	$R^2\Delta$	β	SEB	$R^2\Delta$
Step I			13.9 %***			11.8 %**			0.2 %			21.9***
Age	-0.13	0.12		-0.16	0.12		-0.09	0.10		-0.05	0.11	
BMI	-0.34***	0.11		-0.30**	0.11		-0.09	0.11		-0.46***	0.10	
Step II			43.8 %***			39.5 %***			27.7 %***			30.4 %***
Age	-0.12	0.09		-0.15*	0.09		-0.05	0.10		-0.04	0.09	
BMI	-0.06	0.09		-0.03	0.10		0.11	0.10		-0.23**	0.09	
Narcissism grandiosity	0.34***	0.08		0.39***	0.09		0.07	0.11		0.30***	0.08	
Alexithymia	0.48***	0.08		0.40***	0.09		0.52***	0.10		0.38***	0.08	
Step III			0.1 %			0.1 %			0.1 %			0.2 %*
Age	-0.12	0.09		-0.16*	0.09		-0.04	0.10		-0.07	0.10	
BMI	-0.06	0.08		-0.03	0.10		0.09	0.11		-0.19**	0.11	
Narcissism grandiosity	0.35***	0.09		0.39***	0.08		0.04	0.11		0.36***	0.08	
Alexithymia	0.48***	0.08		0.40***	0.08		0.53***	0.10		0.38***	0.09	
NG* Alexithymia	0.04	0.06		0.01	0.06		-0.09	0.07		0.16*	0.07	
Adjusted R^2		0.58***			0.51***			0.30***			0.55***	

NG Narcissism grandiosity

^ $p < 0.07$; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

correlation between NG and disordered eating are consistent with the studies that find that aspects of grandiosity were positively associated with higher levels of drive for muscularity [7]. Grandiosity was also positively related to excessive exercise [10] and body-related comparison and display behaviors [9]. Thus, our results add to the body of literature by relating NG not only to restrictive aspects of disordered eating such as diet and oral control but also to purging type attitudes such as bulimia and food preoccupation attitudes.

Two possible explanations are suggested for this new finding. First, in contrast to other studies [11], in our sample we found strong positive relationship between NV and NG. It is possible that in this study the participants constitute a sample of individuals that are characterized with both covert and overt aspects of narcissism [1] that make them more vulnerable to disordered eating. Second, it is possible that because of the unique feature of ‘pro-ana’ online communities that provide a strong sense of social support [23], individuals with higher levels of NG feel more comfortable to inflate their self-esteem by reporting disordered eating rituals. Moreover, this behavior can make them role models for other ‘pro-ana’ members and promote the ideal of ‘thinspiration’ as a preferable lifestyle [21].

Our results also point to positive relations between alexithymia and disordered eating among ‘pro-ana’ members. These results concur with most studies that found high levels of alexithymia in individuals with eating disorders and disturbed eating compared with healthy controls [13]. Importantly, we found that alexithymia moderated the relationships between NV and eating attitudes total score. Alexithymia also moderated the relationships between NV and NG and the eating oral control subscale score. Hence, if a participant endorsed high levels of NV or NG and was also characterized with high levels of alexithymia, then the probability of her reporting high levels of restrictive disordered eating increased.

How can we explain this moderating effect? NV is characterized by emotional dysregulation following the painful disappointment of entitled expectations and self-enhancement failures [1]. In addition, individuals with eating disorders have difficulties identifying and describing their feelings that might precede the development of their eating problems [14]. It is possible that as a way to avoid or cope with their feelings, narcissistic vulnerable individuals turn to the symptomatic route of restrictive eating behaviors [18]. The more an individual suffers from uncontrollable feelings of inferiority and experience fragile self-value, and the less she learns how to deal with it, the more she needs to control and publicly expose her strong discipline through the online communities. Indeed, the most common themes in these communities were found to be control, success, and perfection [14]. Thus, participants can

avoid talking about the ambivalent feelings routed in their eating disorder [34] and emphasize their control over it.

Another possible explanation is related to the unique subjective experience of ‘pro-ana’ online community members. Through analysis of ‘pro-ana’ members’ narratives, Dias [24] found that what those women are not able or ready to say to family, friends or professionals, they are able to express in the “safer” space of cyberspace. Thus, it is argued that our results of higher levels of disordered eating attitudes among ‘pro-ana’ participants who experience high levels of NV and alexithymia, reflecting an alternative way of communicating shameful emotions (through talking about eating acts) for those who are feeling locked in their own personal experience. In other words, experiencing high levels on alexithymia might lead the vulnerable individual to the ‘pro-ana’ communities as a safe medium to understand and express her shameful feelings.

Limitations of study

First, the use of self-report measures entails the risk of a reporting bias. Future studies should consider gathering data from multiple sources such as from the participants’ friends and making use of objective measures of eating disorder symptoms. Second, the use of self-report measures also entails the risk that the results were influenced by patients’ denial of symptoms [35] or even unawareness of illness and symptoms [36]. Since there was no clinical evaluation of the data, the results should be interpreted cautiously. Third, the cross-sectional design of this study strongly limits our ability to infer causality. Last, we sampled only three main online communities that might not represent the characteristics of this population.

Conclusions

Despite these limitations, this study yielded several important findings. This is one of the first studies to report about the relations between the two facets of narcissism and disordered eating, emphasizing the dire need to treat narcissism in a more complex manner. Furthermore, this study sheds light on the positive association between NG and disordered eating domains that were not assessed before, such as bulimia and food preoccupation. Importantly, the findings of this study point to the possible moderating role of alexithymia in the relations between NV and restrictive disordered eating. With the assistance of the specific characteristics of ‘pro-ana’ online communities, individuals with higher levels of both NV and alexithymia might find ‘pro-ana’ as a ‘safer’ place to communicate. However, those communications might serve as a negative

model directing others to eating routines that might put them at risk.

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