



# “I can’t miss a thing” – The contribution of defense mechanisms, grandiose narcissism, and vulnerable narcissism to fear of missing out in emerging adulthood

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## ABSTRACT

The present study examined the contribution of different defense mechanisms (i.e., mature, mental inhibition and avoidance, immature-depressive), grandiose narcissism, and vulnerable narcissism to fear of missing out (FoMO). A non-clinical community sample of 436 white (97.24 % Italians) emerging adults (age range: 18–29 years;  $M = 24.90$ ,  $SD = 2.52$ ) participated in a cross-sectional, questionnaire-based online survey. All participants were cisgender (i.e., identified with the gender assigned at birth), of whom 72.2 % were assigned females at birth; 80.50 % reported a heterosexual orientation. Structural equation modeling indicated that mature defenses and mental inhibition and avoidance defenses did not significantly contribute to FoMO, while grandiose and vulnerable narcissism did. However, higher immature-depressive defenses were associated with increased FoMO over and beyond vulnerable narcissism, suggesting that immature-depressive defenses maladaptively hinder emerging adults from acknowledging and elaborating their own vulnerability, leading to feelings of anxiety and frustration when they perceive exclusion from rewarding activities. The results indicate potential intervention targets, such as grandiose narcissism and immature-depressive defenses, for emerging adults who struggle with FoMO, while also pointing to the need for replication in clinical samples to confirm the importance of including defense mechanisms for diagnosing and treating narcissistic individuals reporting FoMO.

## 1. Introduction

Fear of missing out (FoMO) can be defined as an incessant unease stemming from the belief that one may be excluded from rewarding experiences enjoyed by others, accompanied by a constant need to remain informed on others’ activities (Przybylski et al., 2013). Specific individual difference variables may play a crucial role in understanding FoMO (Rozgonjuk et al., 2021) given previous research indicating that individuals who experience unfulfilled needs for competence, autonomy, and relatedness, as well as those with lower life satisfaction (Przybylski et al., 2013), emotional stability and conscientiousness (Brailovskaia et al., 2023) tend to experience FoMO more frequently. Similarly, positive associations have been found between avoidant and anxious attachment styles and FoMO (Blackwell et al., 2017).

In this context, the personality trait of narcissism becomes also relevant (Akat et al., 2022; Müller et al., 2021; Servidio et al., 2021), since it is characterized by a heightened sense of entitlement, excessive self-admiration, belief in one’s uniqueness and superiority, strong attention-seeking tendencies, and a desire for admiration (Ryan et al., 2008). From this perspective, it seems well within reason to examine the contribution of a fragile self-esteem impacting individuals’ sense of self and interpersonal relationships, which is the core of narcissism (Kwiatkowska et al., 2019), to the apprehension of not being sufficiently significant to others to be included in relevant experiences (FoMO). Indeed, this is tied to an underlying negative or uncertain self-image and a subsequent need for validation through connections with others (Casale & Flett, 2020; Fontana et al., 2022).

Wink (1991) identified two distinct forms or dimensions of

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narcissism: *grandiose* and *vulnerable narcissism*. Subsequent research has corroborated the existence of these two dimensions (Benzi et al., 2023; Fontana et al., 2023; Krizan & Herlache, 2018), which share common traits of a narcissistic self, such as fragile self-esteem, arrogance, egotism, and apparent disregard for others' needs. Despite their shared foundations, however, notable differences between grandiose and vulnerable narcissism exist. Grandiose narcissism is positively associated with independent self-construal and self-esteem, whereas vulnerable narcissism exhibits negative associations with self-esteem (Dickinson & Pincus, 2003; Sedikides et al., 2004).

The two forms of narcissism also differ in their social abilities to attain attention and admiration (McCain & Campbell, 2018). Individuals with high levels of grandiose narcissism often participate in various social interactions and receive the anticipated positive feedback from others, thanks to their self-confident, charismatic, and extroverted demeanor (Morf & Rhodewalt, 2001). This positive feedback reinforces their grandiose beliefs and further strengthens their narcissistic self. Conversely, those with high levels of vulnerable narcissism exhibit insecurity, shyness, dissatisfaction, defensiveness, and self-doubt, which contribute to diminished social competence (Dickinson & Pincus, 2003). Driven by anxiety and marked by low frustration tolerance (Sedikides et al., 2004), these individuals engage less in face-to-face interactions and receive less attention and admiration (Pincus & Roche, 2011; Fontana et al., 2023). Despite these differences, however, the few existing research on the positive association between FoMO and narcissism (Akat et al., 2022; Müller et al., 2021; Servidio et al., 2021) did not distinguish the specific forms of narcissism.

Considering the proposed connection between narcissism (especially the vulnerable form) and FoMO, emotion regulation emerges as another individual difference variable that could be relevant to consider. One strategy to regulate emotion is using defense mechanisms, which are automatic, implicit, and unconscious psychological processes that mediate an individual's response to internal conflicts and stressful situations (Cramer, 2015; Vaillant, 1977). Defense mechanisms function on a spectrum, ranging from maladaptive defenses to highly adaptive defenses (Perry, 1990). Mature defenses help decrease negative emotions and increase awareness of stressors, promoting the ability to reflect on and tackle such conflicts and leading individuals toward optimal adjustment and resolution of internal and external stressors. Neurotic defenses, which belong to the mental inhibition and avoidance category, protect the self by partially or entirely removing internal conflicts or the emotional component of experiences from conscious awareness. Conversely, immature defenses maintain emotional and cognitive aspects of internal or external stressors outside of awareness, simplifying the representation of the self or significant others into a black-or-white perspective to shield individuals from experiencing overwhelming feelings, desires, and thoughts.

Narcissism-related defense mechanisms are characterized by maladaptive immature defense processes (Kampe et al., 2021), assumed to develop from primary caregivers' early rejection and devaluation experiences (Prunas et al., 2019). As a result, grandiose narcissism emerges as an unconscious compensatory strategy to protect against significant anxieties, shame, and self-esteem threats (Kernberg, 2015). Kernberg (1975) introduced the concept of character defense to explain the essence of narcissistic pathology, which involves upholding the ego via splitting-based, projective, and reality-surpassing defensive operations such as grandiose fantasies, omnipotence, self and others' devaluation and idealization, denial, and externalization.

Empirical research has examined mechanisms explicitly associated with narcissism, sustaining Kernberg's clinical observations. For example, Perry and Perry (2004) discovered devaluation, omnipotence, idealization, and mood-incongruent denial as unique narcissistic defensive operations. Additionally, Hilsenroth et al. (1997) identified idealization, while Raskin and Novacek (1991) pinpointed grandiose fantasies as defenses particularly connected to narcissism. These mechanisms unconsciously aim to prevent uncomfortable and

distressing perceptions of reality from entering consciousness and preserve a sense of power, significance, and grandiose imagination. Similarly, Kampe et al. (2021) outlined distinguished defense processes associated with grandiose and vulnerable types of narcissism: while both were positively associated with specific maladaptive defense mechanisms, only grandiose narcissism was positively associated with adaptive defenses. Moreover, grandiose narcissism appears to have a strategic advantage over vulnerable narcissism in regulating psychological distress through specific defense mechanisms (Kampe et al., 2021).

The present study examined the contribution of different defense mechanisms (i.e., mature, mental inhibition and avoidance, immature-depressive), grandiose narcissism, and vulnerable narcissism to FoMO in emerging adulthood (18–29 years). The focus on emerging adults is particularly relevant as they navigate numerous challenges and life transitions (e.g., forming romantic relationships, having children, pursuing higher education, living independently) (Arnett, 2000), that may foster the development of FoMO while attempting to establish their identities autonomously and independently, and mitigate feelings of uncertainty.

Drawing from existing research (Kampe et al., 2021), it was hypothesized that an implicit defensive pattern that addresses self-esteem challenges through various immature psychological maneuvers might override manifest narcissistic vulnerability in regulating experiencing anxiety and frustration when feeling left out from rewarding activities (FoMO). These maneuvers might encompass impulsive expression without prior thought (action defenses), evading integration of conflicting perceptions of self and others that provoke inferiority feelings (major image-distorting defenses), distorting reality (disavowal defenses), or fortifying vulnerable self-esteem by altering self and others' perceptions (minor image-distorting defenses).

## 2. Method

### 2.1. Participants

A non-clinical community sample of 436 white, cisgender emerging adults (72.2 % assigned females at birth,  $M = 24.90$ ,  $SD = 2.52$ ; age range: 18–29 years) participated in the study. To determine the minimum number of participants required to detect at least small effects, an a-priori power analysis was conducted using the R package *semPower*. Alpha and RMSEA levels were set to 0.05. Results indicated that for 2 latent and 22 observed variables, the required sample size to achieve 80 % power to reject a wrong model was  $N = 411$ . Thus, the obtained sample size is sufficiently powered for the study.

Among participants, 80.50 % ( $n = 351$ ) reported a heterosexual orientation, with the remaining identifying as gay/lesbian ( $n = 42$ , 9.63 %) and bisexual ( $n = 43$ , 9.86 %). All resided in Italy and spoke Italian fluently; almost all ( $n = 424$ , 97.24 %) were Italian citizens. Most participants ( $n = 324$ , 74.31 %) were students, with the remaining 77 (17.66 %) being employed, 16 (3.67 %) being both employed and students, and 19 (4.36 %) being unemployed. One out of two participants ( $n = 261$ , 59.86 %) lived with both parents, 30 (6.88 %) lived with one of the two parents, 90 (20.64 %) lived alone, 20 (4.58 %) lived with their friends, 31 (7.11 %) cohabited, and 4 (0.91 %) lived with their relatives.

### 2.2. Procedure

Informed consent was obtained from all participants. Subjects were assigned a unique reference code to protect their anonymity and provided a private web link to complete self-report questionnaires. Ethical approval was granted by the Ethics Committee of the University of Milan – Bicocca.

### 2.3. Measures

#### 2.3.1. Grandiose and vulnerable narcissism

The *Pathological Narcissism Inventory* (PNI) (Pincus et al., 2009) is a 52 items self-report questionnaire that assesses narcissistic personality traits along two different dimensions: Vulnerable narcissism and Grandiose narcissism, on a 6-point Likert scale from 0 (not at all like me) to 5 (very much like me). Vulnerable narcissism includes fluctuations in self-esteem levels in the absence of external sources of admiration and recognition (Contingent Self-Esteem), unwillingness to show others one’s faults and needs (Hiding the Self), disinterest in others who do not provide admiration, as well as shame over needing recognition from disappointing others (Devaluing), and proneness to experience anger when entitled expectations are not met (Entitlement Rage). Grandiose narcissism encompasses a manipulative interpersonal orientation (Exploitativeness), the use of purportedly altruistic acts to sustain an inflated self-image (Self-Sacrificing Self-Enhancement), and engagement in compensatory fantasies of gaining success, recognition, and admiration (Grandiose Fantasy). Higher scores indicate higher narcissistic traits. Both scales showed good to excellent internal consistency (Grandiose narcissism:  $\alpha = 0.87$ ; Vulnerable narcissism:  $\alpha = 0.94$ ).

#### 2.3.2. FoMO

The *Fear of Missing Out scale* (Przybylski et al., 2013) includes 10 items (e.g., “I get anxious when I don’t know what my friends are up to”, “It bothers me when I miss an opportunity to meet up with friends”) that explore FoMO, rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate higher FoMO. This study used the latent variable for FoMO. The latent variable of FoMO included the 10 observed items.

#### 2.3.3. Defense mechanisms

The *Defense Mechanisms Rating Scales-Self-Report-30* (DMRS-SR-30; Di Giuseppe et al., 2020; Prout et al., 2022) is a 30-item self-report that assesses 28 defense mechanisms hierarchically organized into seven levels of adaptiveness, further organized into three defensive factors (i.e., mature, mental inhibition and avoidance, and immature-depressive). Items are rated on a 5-point Likert scale from 0 (not at all) to 4 (very often/much). The present study used latent variables for the three main defense factors. The latent variables for the Mature defense factor, from the most to the least adaptive, included: affiliation, altruism, anticipation, humor, self-assertion, self-observation, sublimation, and suppression. The latent variables for the Mental inhibition and avoidance defense factor, from the most to the least adaptive, included: isolation of affects, intellectualization, undoing, repression, dissociation, reaction formation, displacement, denial, and autistic fantasy. The latent variables for the Immature-depressive defense factor, from the most to the least adaptive, included: idealization, devaluation, rationalization, projection, splitting of self-image, splitting of object-image, projective identification, passive aggression, help-rejecting complaining, and acting out.

### 2.4. Data analysis

Statistical analyses were conducted using R (ver. 2022.07.2; R Core Team, 2021). Descriptive statistics were used to explore the participants’ general characteristics with the *psych* package. To test the main hypotheses, structural equation modeling (SEM) was performed using the *lavaan* package. Three regression models were computed to assess the contribution of every defensive factor (i.e., mature, mental inhibition and avoidance, and immature-depressive) to the association between grandiose narcissism, vulnerable narcissism, and FoMO.

To compute the models we followed a stepwise approach. First, we tested a model with the association of grandiose narcissism and the latent variable of FoMO (Model 1); second, we tested a model with the association of grandiose narcissism, vulnerable narcissism, and the

latent variable of FoMO (Model 2); third, we tested a model including latent factors of mature (Model 3a), mental inhibition and avoidance (Model 3b), and immature-depressive defenses (Model 3c) to the association of grandiose narcissism, vulnerable narcissism, and the latent variable of FoMO.

All models were computed using a weighted least squares—mean and variance adjusted (WLSMV) estimator to account for Likert-based ordinal measurements. The fit of the model was evaluated by accounting for complementary goodness of fit indexes (Ullman & Bentler, 2013):  $\chi^2$  statistic (if  $\chi^2$  is not significant, it means that model fit with the observed data; however, this statistic is sensitive to sample size and needs to be interpreted adopting a multifaceted approach); Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) (values  $\geq 0.95$  indicate a good fit, values  $\geq 0.90$  indicate an adequate fit); Root Mean Square Error of Approximation (RMSEA) (values  $< 0.05$  indicate an excellent model fit, values between 0.05 and 0.08 moderate fit, and values between 0.08 and 0.10 acceptable fit, such as the non-statistical significance of its associated 90 % confidence interval).

### 3. Results

Table 1 shows means and standard deviations for all variables, while Table 2 shows Pearson’s correlations between the variables included in the study.

Model 1 included the association of grandiose narcissism with FoMO. The fit indices of the model were satisfactory ( $\chi(df) = 113.11(44)$ ,  $p < .001$ ;  $\chi/df = 2.57$ ; CFI = 0.98; TLI = 0.97; RMSEA = 0.06 [90 % CI (0.05, 0.07)]),  $p = .106$ ). A significant direct association was found between grandiose narcissism and latent variable of FoMO ( $\beta = 0.49$ ,  $p < .001$ ): the higher grandiose narcissism, the higher FoMO. The model explained a total variance of 25 % of FoMO.

Model 2 included the association of grandiose and vulnerable narcissism with FoMO. The fit indices of the model were satisfactory ( $\chi(df) = 122.72(53)$ ,  $p < .001$ ;  $\chi/df = 2.32$ ; CFI = 0.98; TLI = 0.97; RMSEA = 0.05 [90 % CI (0.04, 0.07)]),  $p = .246$ ). A significant direct association was found between grandiose ( $\beta = 0.17$ ,  $p = .018$ ) and vulnerable narcissism ( $\beta = 0.55$ ,  $p < .001$ ) and latent variable of FoMO: the higher narcissistic traits, the higher FoMO. The model explained a total variance of 43 % of FoMO.

Model 3a included the association of grandiose and vulnerable narcissism, and mature defenses with FoMO (Fig. 1). The fit indices of the model were satisfactory ( $\chi(df) = 229.20(166)$ ,  $p < .001$ ;  $\chi/df = 1.38$ ; CFI = 0.99; TLI = 0.98; RMSEA = 0.03 [90 % CI (0.02, 0.04)]),  $p = .996$ ). A significant direct association was found between grandiose ( $\beta = 0.17$ ,  $p = .017$ ) and vulnerable narcissism ( $\beta = 0.50$ ,  $p < .001$ ) and latent variable of FoMO: the higher narcissistic traits, the higher FoMO. No significant association was found between mature defenses and FoMO ( $\beta = -0.06$ ,  $p = .420$ ). The model explained a total variance of 44 % of FoMO.

Model 3b included the association of grandiose and vulnerable narcissism, and mental inhibition and avoidance defenses with FoMO (Fig. 2). The fit indices of the model were satisfactory ( $\chi(df) = 330.74(185)$ ,  $p < .001$ ;  $\chi/df = 1.78$ ; CFI = 0.97; TLI = 0.95; RMSEA = 0.04 [90 % CI (0.03, 0.05)]),  $p = .952$ ). A significant direct association was found between grandiose ( $\beta = 0.17$ ,  $p = .016$ ) and vulnerable narcissism ( $\beta =$

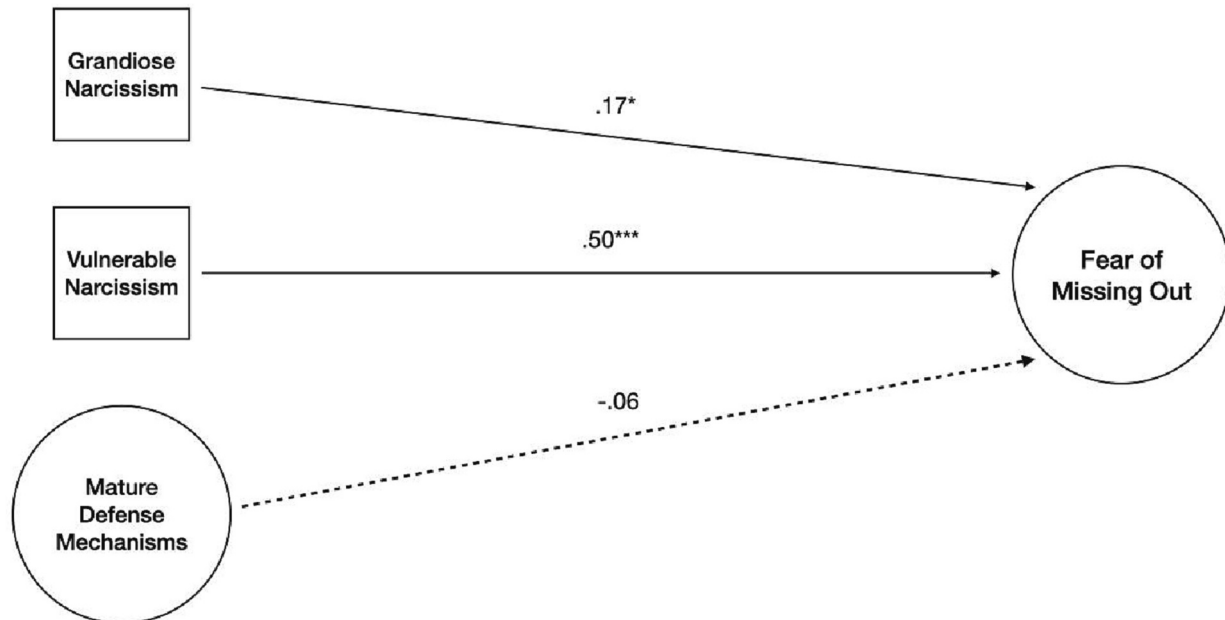
**Table 1**  
Means and standard deviations for grandiose and vulnerable narcissism, defense mechanisms, and fear of missing Out (N = 436).

	Mean	SD
Grandiose narcissism	3.51	0.71
Vulnerable narcissism	3.24	0.83
Mature defenses	41.48	12.39
Mental inhibition and avoidance defenses	29.35	8.07
Immature-depressive defenses	27.34	9.42
Fear of missing out	2.47	0.79

**Table 2**  
Pearson's correlations between grandiose and vulnerable narcissism, defense mechanisms, and fear of missing Out ( $N = 436$ ).

	Grandiose narcissism	Vulnerable narcissism	Mature defenses	Mental inhibition and avoidance defenses	Immature-depressive defenses	Fear of missing Out
Grandiose narcissism	–					
Vulnerable narcissism	0.60***	–				
Mature defenses	–0.37***	–0.63***	–			
Mental inhibition and avoidance defenses	0.18***	0.36***	–0.66***	–		
Immature-depressive defenses	0.31***	0.56***	–0.78***	0.09	–	
Fear of missing out	0.47***	0.60***	–0.40***	0.16***	0.41***	–

Note.  
\*\*\*  $p < .001$ .



**Fig. 1.** Model for the associations of grandiose and vulnerable narcissism, latent variable of mature defense mechanisms, and latent variable of fear of missing out ( $N = 436$ ).  
Note. To improve the clarity of the figure, factor loadings were not included. Solid lines represent statistically significant direct associations, and dashed lines represent nonsignificant associations. Only statistically significant standardized estimates are provided in the model. \* $p \leq .05$ ; \*\*\* $p \leq .001$ .

0.52,  $p < .001$ ) and latent variable of FoMO: the higher narcissistic traits, the higher FoMO. No significant association was found between mental inhibition and avoidance defenses and FoMO ( $\beta = 0.04$ ,  $p = .623$ ). The model explained a total variance of 43 % of FoMO.

Model 3c included the association of grandiose and vulnerable narcissism, and immature-depressive defenses with FoMO (Fig. 3). The fit indices of the model were satisfactory ( $\chi(df) = 272.61(203)$ ,  $p < .001$ ;  $\chi/df = 1.34$ ; CFI = 0.99; TLI = 0.98; RMSEA = 0.03 [90 % CI (0.02, 0.04)],  $p = .998$ ). A significant direct association was found between grandiose narcissism ( $\beta = 0.21$ ,  $p = .010$ ) and immature-depressive defenses ( $\beta = 0.23$ ,  $p = .031$ ) and latent variable of FoMO: the higher grandiosity, the higher FoMO; the greater use of immature-depressive defenses, the higher FoMO. No significant association was found between vulnerable narcissism and FoMO ( $\beta = 0.36$ ,  $p = .167$ ). The model explained a total variance of 47 % of FoMO.

#### 4. Discussion

The present study investigated the associations between grandiose and vulnerable narcissistic traits, defense mechanisms, and FoMO among emerging adults. The bivariate correlations showed an inverse association between both grandiose and vulnerable narcissism and

mature defense mechanisms, indicating that individuals with narcissistic traits tend to use less mature defense mechanisms, such as humor, sublimation, and suppression (Kampe et al., 2021). This might result from narcissistic traits encompassing the need for validation from others, and a fear of rejection (Jauk et al., 2017), which might, in turn, make it difficult for emerging adults to use mature defense mechanisms that require a more stable sense of self, particularly in a developmental period characterized by uncertainty and feeling-in-between (Arnett, 2000).

Similarly, narcissistic traits were positively associated with mental inhibition and avoidance defenses, such as denial, isolation, and reaction formation, and with immature-depressive defenses, such as devaluation, splitting of self-image, and acting out. These findings align with previous evidence (Perry & Perry, 2004) and suggest that individuals exhibiting narcissistic traits might experience difficulties in effectively regulating their emotional responses and managing stress and, consequently, might be more prone to employing maladaptive defense mechanisms as a means of coping with these challenges (Casale, 2022; Kampe et al., 2021).

Moreover, when considering Model 2, grandiose and vulnerable narcissism were positively associated with FoMO. The positive association between narcissism and FoMO is consistent with previous research

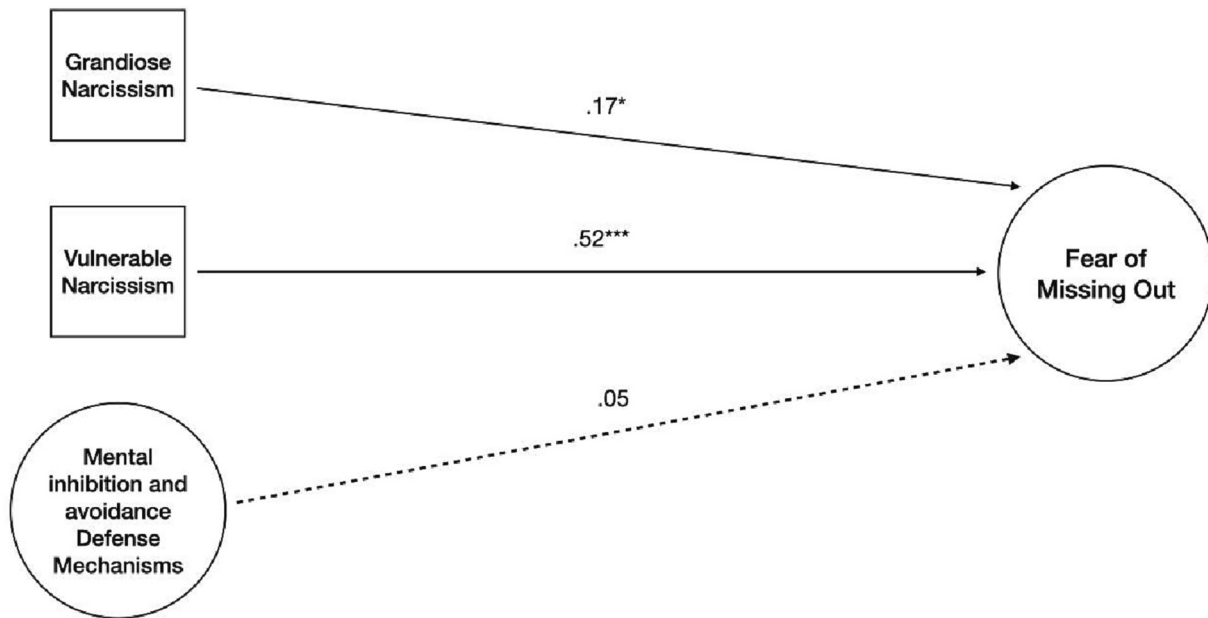


Fig. 2. Model for the associations of grandiose and vulnerable narcissism, latent variable of neurotic defense mechanisms, and latent variable of fear of missing out ( $N = 436$ ).

Note. To improve the clarity of the figure, factor loadings were not included. Solid lines represent statistically significant direct associations, and dashed lines represent nonsignificant associations. Only statistically significant standardized estimates are provided in the model.  $*p \leq .05$ ;  $***p \leq .001$ .

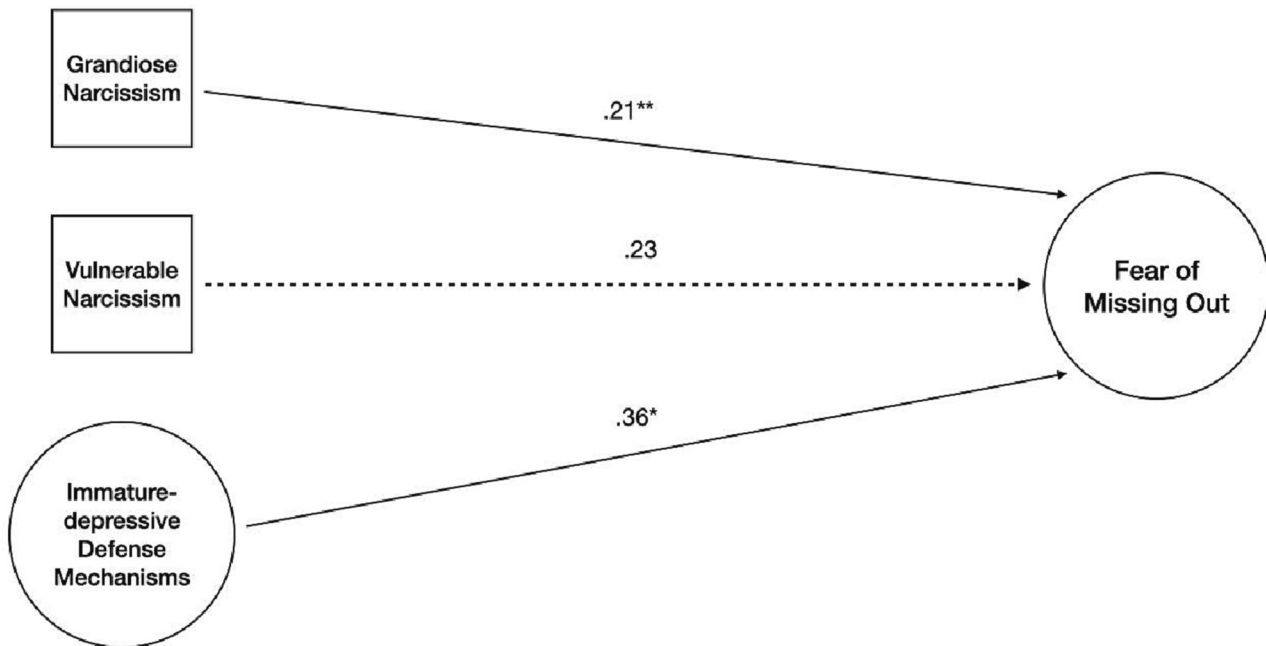


Fig. 3. Model for the associations of grandiose and vulnerable narcissism, latent variable of immature-depressive defenses, and latent variable of fear of missing out ( $N = 436$ ).

Note. To improve the clarity of the figure, factor loadings were not included. Solid lines represent statistically significant direct associations, and dashed lines represent nonsignificant associations. Only statistically significant standardized estimates are provided in the model.  $*p \leq .05$ ;  $***p \leq .001$ .

(Akat et al., 2022; Müller et al., 2021; Servidio et al., 2021), indicating that emerging adults with high levels of vulnerable and grandiose narcissistic traits might experience a heightened need to be constantly connected to others and to be updated on social events, which may lead to increased FoMO. This is in line with the idea that narcissistic individuals strongly desire attention and admiration from others (Kernberg, 2015).

Furthermore, Model 3c revealed that higher immature-depressive

defenses were associated with higher FoMO over and beyond vulnerable narcissism. This is consistent with previous research showing that maladaptive defense mechanisms are associated with various adverse outcomes, such as anxiety, depression, and interpersonal problems (Cramer, 2015). Also, this result underscores the significance of utilizing immature-depressive defense mechanisms as an implicit tactic for regulating emotions in the face of FoMO. Specifically, it indicates that emerging adults predominantly employ depressive defenses (such as



devaluation, projection, self-image splitting, object-image splitting, projective identification, passive aggression, help-rejecting complaining, and acting out) and immature defenses (such as rationalization and idealization) to cope with their FoMO, rather than relying on their fragile narcissistic qualities as a form of refuge.

Since vulnerable narcissism loses significance in relation to FoMO when immature-depressive defenses are entered into the model, it stands reason that such defenses maladaptively hinder emerging adults from acknowledging and elaborating their own vulnerability, leading to feelings of anxiety and frustration when they perceive exclusion from rewarding activities. In this vein, a closer look at the items of the FoMO scale (e.g., “I fear others have more rewarding experiences than me”, “I fear my friends have more rewarding experiences than me”, “I get worried when I find out my friends are having fun without me”, “I get anxious when I don’t know what my friends are up to”, “It bothers me when I miss an opportunity to meet up with friends”) seems to confirm this explanation.

An etiologic perspective further helps clarify the result that immature-depressive defenses subtract variance to vulnerable narcissism in relation to FoMO. Narcissistic defenses are conceptualized as a developmental consequence of primary caregivers’ early experiences of rejection and devaluation (Prunas et al., 2019). As a result of this intersubjective experience, the child begins to develop a model of the self as unworthy of care and a model of significant others as rejecting and unresponsive to their needs, which influence their subsequent expectancies when in a relationship with others. Given these circumstances, it is probable that emerging adults who exhibit narcissistic personality traits, particularly in the vulnerable form, may find themselves inadequately equipped to manage stressful situations that arise during interpersonal interactions. Consequently, such individuals may be less likely to engage with others, thereby setting in motion a negative feedback loop that reinforces their self-conception as undeserving of admiration and attention and their perception of others as rejecting and undervaluing (Pincus & Roche, 2011; Rogoza et al., 2022), ultimately culminating in FoMO. Future studies may help clarify this hypothesis by investigating FoMO in relation to the quality of childhood experiences and the subsequent attachment pattern developed by individuals who report FoMO later in life.

The present study features limitations that merit mention and open avenues for future research. Firstly, the findings are based on a non-clinical sample, which may not adequately represent the pathological manifestations of narcissism, although participants reported moderate levels of both forms of narcissism, on average. Secondly, data were collected via one-time surveys, meaning the results offer only a snapshot of individuals’ experiences at a specific time and no causal inference can be made. Future longitudinal studies might provide evidence of indirect effects of immature defenses in the association between narcissistic traits and FoMO. Thirdly, the study analyzed FoMO as an individual difference variable, providing limited insight into its contextual and temporal stability. Like other stable constructs like self-esteem, it is reasonable to expect that situational and relational factors may influence the variability of FoMO across days, weeks, or even months. Lastly, the study relied on self-report measures, which may be susceptible to response biases. Therefore, future research should address these limitations using more diverse samples across different age cohorts, longitudinal designs, and multiple assessment methods.

Aside from its limitations, the present study emphasizes potential intervention targets, such as grandiose narcissism and immature-depressive defenses, for emerging adults who struggle with FoMO. Given that FoMO is an individual difference variable (Przybylski et al., 2013), replicating our results in clinical populations would confirm the necessity of considering defense mechanisms when diagnosing and treating narcissistic individuals who report experiencing FoMO. Such an approach would highlight the importance of idiographic (versus nomothetic) perspectives in the assessment of narcissistic personality, emphasizing the notion that to comprehend symptoms of

psychopathology, it is crucial to understand the individual who presents with them, as previously demonstrated effectively in the Psychodynamic Diagnostic Manual (Lingiardi & McWilliams, 2015). Thus, the present study suggests the utility of identifying individuals’ defensive repertoires developed to manage distress and stressful relational experiences.

Likewise, clinical interventions aimed at treating FoMO in relation to narcissism should prioritize addressing emerging adults’ use of immature-depressive defense mechanisms. Given that FoMO has been linked to various adverse outcomes for both mental and physical health (e.g., depression, mindfulness, physical symptoms) (Przybylski et al., 2013), it is imperative to continue investigating the defense mechanisms that are implicated in the relation between personality and FoMO. This will enable targeted and effective interventions based on individuals’ core personality features, as well as provide a more nuanced understanding of how different defense mechanisms might influence the experience of FoMO and its negative consequences. In this vein, future research should assess maladaptive personality traits while considering underlying and unconscious mechanisms. As most psychological disorders are related to dysfunctional emotion regulation and most processes operate implicitly rather than explicitly (Sheppes et al., 2015), the inclusion of implicit ways of managing affects and stressors would be a fruitful endeavor.

#### CRediT authorship contribution statement

N.C., I.M.A.B., L.A.L.P., and A.F. conception, design, and data collection. I.M.A.B. data analysis. N.C. and A.F. original draft. N.C., I.M.A.B., L.A.L.P., and A.F. review and editing. All authors read and approved the final manuscript.

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#### Ethical approval

The Ethics Committee of the University of Milan – Bicocca approved the research.

#### Informed consent

Informed consent was obtained from all individual participants included in the study.

#### Declaration of competing interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

#### Data availability

The datasets generated during and/or analyzed during the present study are available from the corresponding author upon reasonable request.

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