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Pathological narcissism mentalization and gender differences in alcohol misuse among emerging adults

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Abstract
Background Emerging adulthood is a developmental phase marked by increased vulnerability to risky behaviors, including alcohol misuse. Pathological narcissism, particularly grandiose and vulnerable traits, has been identified as a key factor influencing alcohol misuse. The role of mentalized affectivity (namely, the ability to identify, express, and process emotions) may enhance these associations, along with potential gender differences in these dynamics.
Methods A cross-sectional study was conducted with 1,075 emerging adults ($M = 24.26$, $SD = 2.43$; 71.2% assigned female at birth), using self-reports to measure pathological narcissism, mentalization difficulties, and alcohol misuse. Hierarchical regression models were used to examine the relationships between narcissistic traits, mentalized affectivity, and alcohol misuse.
Results Grandiose narcissism was associated with alcohol misuse in the total sample. Narcissistic vulnerability was a stronger predictor of alcohol misuse in female individuals, while difficulties in mentalization (identifying and expressing emotions) were significant predictors of alcohol misuse in males. Grandiose narcissism did not directly predict alcohol misuse in either gender, after controlling for Narcissistic vulnerability.
Conclusions Vulnerable narcissism plays a significant role in alcohol misuse, especially in female individuals, with mentalization difficulties exacerbating these behaviors, particularly in male individuals. Gender differences highlight the need for gender-specific interventions in emerging adults.

Keywords Pathological narcissism · Alcohol misuse · Mentalization · Alcohol consumption · Vulnerable narcissism · Grandiose narcissism

1 Introduction

Emerging adulthood is a distinct developmental stage marked by identity exploration, instability, self-focus, a sense of being "in-between," and perceived possibilities [1]. This period, which spans from late adolescence into the late twenties, is characterized by efforts to establish identity while forming adult-like relationships. During this time, romantic and peer relationships often precede family connections, playing a significant role in identity formation, emotional stability, and intimacy [1]. However, socioeconomic changes in Western societies, such as prolonged educational requirements, delayed marriage, and extended financial dependency on families, have reshaped this developmental stage. Arnett [1]

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identified additional key aspects of this phase, including exploring identity, which involves ongoing self-discovery and navigating relationships in work and social contexts. Instability also arises during this period, with frequent changes in interpersonal relationships, work environments, and living situations. These transitions require emerging adults to adapt to new perspectives, aligning with societal demands.

The COVID-19 pandemic further complicated these challenges by disrupting developmental tasks, increasing anxiety, intensifying feelings of insecurity, and contributing to the avoidance of interpersonal situations [2]. As the world moves beyond the pandemic, it is crucial to update our understanding of how emerging adults navigate toward their developmental goals. Factors such as limited access to higher education or fewer job opportunities can hinder their path to personal fulfillment. This uncertainty can obscure their sense of direction [3]. As Arnett described, the sense of being "in-between" characterizes this transitional period, as individuals are neither fully adolescent nor fully adult. Emerging adults face significant pressure to achieve life-stage-related goals, such as career advancement and determining their social role, which can lead to overwhelming feelings. While some emerging adults thrive during this phase, others may struggle with psychological challenges. Thus, this phase also presents challenges that may increase the risk of psychopathology and risky behaviors [4].

Research shows that emerging adults are particularly vulnerable to psychopathology, including both externalizing symptoms (e.g., substance use) and internalizing symptoms (e.g., anxiety and depression) [5, 6]. For instance, data from the National Comorbidity Survey Replication (NCS-R) suggest that approximately one-quarter of emerging adults in the U.S. meet the criteria for anxiety disorders. Recent studies have also highlighted the correlation between mood disorders and suicidal outcomes in emerging adults aged 18 to 25 [7]. Additionally, somatic symptoms are more common in individuals aged 18 to 29 compared to other age groups. In a European survey, between 9.1% and 23.5% of emerging adults were found to meet the criteria for somatoform syndromes—conditions characterized by physical symptoms without an identifiable cause [8]. The prevalence of somatic disorders in emerging adults ranges between 10 and 20% [9, 10]. Gender differences play a role in the manifestation of psychopathology, with some disorders, such as anxiety, being more prevalent in individuals assigned female at birth. These disorders can severely impact interpersonal relationships, psychosocial functioning, and increase the risk of suicidal ideation [6].

1.1 Alcohol misuse and binge drinking

Binge drinking (BD) and alcohol misuse are widely recognized as major public health concerns globally. The prevailing definition of these behaviors refers to the consumption of excessive amounts of alcohol, leading to intoxication [11]. BD is typically characterized by alternating periods of heavy drinking and abstinence, often involving the consumption of five to six alcoholic drinks within a short timeframe—usually about two hours—often outside of meals [12]. This pattern is the most common form of alcohol misuse among emerging adults, particularly in Western countries [13]. It usually occurs in social and recreational contexts with friends, where alcohol consumption is associated with feelings of well-being and positive emotions [14].

Research highlighted the high levels of alcohol consumption among individuals aged 18–24, but the issue is global in scope [13]. The World Health Organization (WHO) reported that approximately 16 percent of drinkers worldwide engaged in heavy episodic drinking [15]. Similarly, the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) has identified a peak in BD rates among emerging adults, who are particularly vulnerable to cultural and social pressures that encourage heavy drinking [16]. The transition to adulthood involves acquiring new knowledge, gaining autonomy, and assuming responsibilities, which present opportunities for growth but also increase vulnerability to risky behaviors such as BD and alcohol misuse. While some research suggested that stable romantic relationships could act as protective factors against heavy alcohol use [17–19], other studies indicated that intimate relationships could exacerbate alcohol misuse through a "contamination" of dysfunctional behaviors between partners [20–22]. This contagion effect is also observed among friends, where peer influence plays a crucial role in promoting certain drinking behaviors [23, 24]. Cultural and social factors also contribute to BD and alcohol misuse, where alcohol serves as a coping strategy to detach from psychological and emotional challenges while simultaneously fostering new friendships [25–27].

BD episodes and alcohol misuse frequently occur on weekends, followed by moderate or no consumption during the weekdays, and are associated with significant short- and long-term health risks, including fainting, nausea, memory lapses, and even brain damage [28–31]. Furthermore, alcohol consumption is linked to poor academic and work performance, higher rates of injuries, car accidents, and intentional harm, such as violence and self-harm [32–36]. Studies showed that alcohol-related risks, such as unintentional injuries or violence, increased with higher blood alcohol concentration (BAC) levels, particularly among episodic binge drinkers [37–39]. Importantly, alcohol misuse could lead to brain

damage and potentially progress to alcohol use disorders, especially when this pattern begins during adolescence. This consumption behavior may cause cell death during periods of abstinence, making it particularly harmful to the brain [31, 40–44]. In this context, Petit [44] argued that binge drinking should not be viewed merely as social entertainment, but as a precursor to serious health risks, including brain disorders and a progressive increase in alcohol dependence. Gender differences in risk factors for alcohol consumption are well-documented across various studies, with distinct patterns and consequences observed for men and women. Research indicates that, while men generally display higher mean levels of psychosocial risk factors and alcohol misuse, the severity and impact of these factors are often more pronounced in women. For instance, internalizing symptoms, such as depression, are a significant risk factor for alcohol misuse in women to a greater extent than in men, indicating a gender-specific vulnerability [45]. Additionally, the frequency of alcohol use appears to be less predictive in women due to a gender risk severity paradox, where similar levels of risk exposure lead to more co-occurring problems for women than men, suggesting that women may suffer more severe consequences from comparable risk levels [46]. Moreover, Danzo and colleagues [47] investigated gender differences in the pathways linking alcohol use and internalizing symptoms during emerging adulthood, identifying unique mechanisms for each gender. For males, early alcohol use indirectly reduced internalizing symptoms through associations with deviant peers, possibly by alleviating social isolation. In contrast, females showed a bidirectional relationship, with emotional avoidance mediating the link between internalizing symptoms and subsequent alcohol use, indicating that alcohol serves as a coping mechanism. The narrowing gender gap in alcohol consumption among emerging adults is further highlighted by a decline in alcohol use among males and an increase among females. This shift has led to a rise in alcohol-related health issues for women, including liver inflammation and cardiovascular diseases, underscoring the importance of gender-sensitive prevention strategies [48].

1.2 Alcohol misuse and pathological narcissism

Research showed that personality traits play a role in the frequency of adult alcohol consumption [49], with high extraversion and low consciousness [50] being associated with frequency of alcohol consumptions both in female and male emerging adults. In this context, pathological narcissism is a crucial factor to consider when examining drinking behaviors in emerging adults. Narcissism may significantly contribute to substance misuse, with traits like grandiosity, egocentrism, and fragile self-esteem driving substance use to reinforce the sense of superiority and maintain a self-image [51]. Pathological narcissism is significantly associated with increased alcohol consumption, particularly during weekends. Individuals with higher narcissistic traits are more likely to engage in both moderate and heavy drinking on weekdays and weekends, with male individuals generally consuming more alcohol than female individuals. Narcissistic individuals tend to drink more as part of risky behaviors, driven by their desire for admiration and social validation [52]. However, the relationship between narcissism and alcohol use differs based on the grandiose or vulnerable narcissistic form. Grandiose narcissism is characterized by traits such as fantasies of superiority, entitlement, perfectionism, and exhibitionistic behaviors, often coupled with a lack of empathy [53–55]. Individuals with grandiose narcissism tend to engage in both moderate and heavy drinking, particularly on weekends, driven by the desire for social validation and admiration [56]. Individuals with grandiose narcissistic traits often consume alcohol to reinforce their perceived superiority and gain approval from their peers [57]. While these individuals are prone to risky drinking behaviors, some aspects of grandiose narcissism, such as grandiose fantasy, can even act as protective factors against alcohol-related problems by maintaining a positive self-image and avoiding emotional distress [58].

On the other hand, vulnerable narcissism is associated with feelings of emotional emptiness, hypersensitivity to rejection, and an intense need for external validation, often masked by shyness or emotional withdrawal [55, 59, 60]. Unlike grandiose narcissists, individuals with vulnerable narcissism tend to drink as a coping mechanism for emotional instability and distress [57]. Vulnerable narcissism is strongly linked to impaired control over drinking and a higher likelihood of alcohol-related problems. The tendency to devalue others, a hallmark of vulnerable narcissism, exacerbates this lack of control, leading to more significant alcohol-related issues [57]. Moreover, individuals with vulnerable narcissism experience heightened shame, which acts as a key mediator driving them toward addictive behaviors such as problem drinking [61]. Despite their higher recognition of alcohol-related problems, their emotional vulnerability and sensitivity to others' judgments often lead to alcohol use as a form of coping rather than for social validation [57]. The association between pathological narcissism and alcohol consumption exhibits notable gender differences, with men often displaying higher levels of overt narcissism compared to women, who tend to exhibit lower levels of overt narcissism in the context of alcohol use [62]. Additionally, research have shown that men with narcissistic traits are more likely to engage

in maladaptive behaviors such as alcohol overuse, which is associated with externalizing coping strategies linked to narcissistic personality dysfunction [63].

1.3 Alcohol misuse and difficulties in mentalization

The link between alcohol misuse and pathological narcissism highlights the potential role of mentalization. Few studies have specifically examined the influence of mentalization deficits on binge drinking. Mentalization refers to the ability to interpret one's own actions and those of others in terms of thoughts, emotions, aspirations, and desires. This skill profoundly influences daily interactions and significantly impacts the quality and stability of interpersonal relationships, as it fosters a deeper and more empathetic understanding of social dynamics [64]. In the absence of adequate mentalization, relationships are likely to remain superficial and fragile, lacking the depth and intimacy required for a solid emotional foundation [64]. In this context, mentalized affectivity refers to the interaction between emotional regulation and mentalizing processes in understanding one's own and others' behaviors, as well as their desires, emotions, and beliefs [65]. This concept involves three key aspects of emotional regulation: identifying emotions (recognizing and reflecting on emotions and their effects), processing emotions (modulating and differentiating complex emotions), and expressing emotions (either outwardly or inwardly) [66]. Effective emotional regulation relies on mentalization, the capacity to reflect on one's own thoughts and emotions, and to anticipate emotional responses to future events.

A recent study found a strong correlation between alcohol misuse and low mentalization skills [67]. Research on substance use suggests that the association between low mentalizing ability and alcohol misuse may arise from individuals using substances to manage internal states they cannot fully comprehend or process [68]. Mentalization impairments can be either temporary or persistent and are associated with a wide range of psychopathologies, including depression [69], anxiety, and various personality disorders [70, 71]. In the context of addictions, much of the literature has focused on behaviors such as gambling [72], with relatively little attention given to binge drinking. Therefore, this research explored deficits in mentalization abilities as they relate to alcohol misuse, an area that still remains underexplored.

1.4 The present study

Building on the available literature, this research aims to investigate the relationship between narcissistic traits (both grandiose and vulnerable), mentalized affectivity, and alcohol misuse in emerging adults. Specifically, the study will explore how narcissistic grandiosity and vulnerability differentially contribute to alcohol-related behaviors and problems, while considering the incremental predictive role of mentalization difficulties in relation to these associations. This research will also assess potential gender differences, providing a nuanced understanding of the interaction between narcissism, mentalization, and alcohol misuse in female and male emerging adults. Despite established links between pathological narcissism and alcohol misuse, as well as between mentalizing difficulties and alcohol misuse, further research is needed to determine whether mentalizing difficulties provide additional predictive value in this context. While narcissistic traits are known contributors to alcohol misuse, they may not fully capture the complex mechanisms that elevate risk, particularly as deficits in mentalizing can exacerbate maladaptive coping strategies such as alcohol misuse. By entering mentalizing difficulties after narcissistic traits in our model, we aim to test the incremental validity of mentalizing, addressing a research gap regarding its independent contribution to alcohol misuse. Furthermore, examining these constructs in sequence offers insight into how they collectively influence alcohol misuse risk, especially across genders, where distinct pathways for males and females may emerge. This approach not only clarifies the role of mentalizing in predicting alcohol misuse but also provides a nuanced understanding of its interaction with narcissistic traits in emerging adults.

Thus, the following hypotheses were formulated:

1. Grandiose Narcissism will directly contribute to increased alcohol misuse in female and male emerging adults.
2. Vulnerable Narcissism will directly affect the increase of alcohol misuse in female and male emerging adults over and above Grandiose Narcissism.
3. Difficulties in mentalized affectivity will predict an increase in alcohol misuse, contributing incrementally to the relationship between pathological narcissism and alcohol misuse both in female and male individuals.

2 Methods

2.1 Design and procedures

Participants for this cross-sectional study were recruited through snowball sampling methods, utilizing word-of-mouth referrals and sharing the study link on various social media platforms (e.g., Facebook, Instagram). After reviewing and agreeing to the online informed consent form, they proceeded to complete the questionnaires hosted on the Qualtrics online platform. The survey took approximately 25 min to complete. Participation was voluntary, and the survey design ensured privacy and anonymity. No material or monetary incentives were provided to participants. Inclusion criteria required participants to be between 18 and 29 years of age and fluent in Italian. Individuals older than 29 years were excluded from the study. Confidentiality was strictly maintained, and data were presented in aggregated form. The study adhered to the Ethical Code of the American Psychological Association (APA) and the Declaration of Helsinki. All materials and procedures received approval from the Ethics Committee of the University of Milan – Bicocca (protocol code n. 775, date of approval 14 June 2023) and the Territorial Ethics Committee of Lazio Area 2 (protocol code n. 78.24, date of approval 21 March 2024).

2.2 Participants

A community-based, non-clinical sample of 1075 cisgender emerging adults participated in the study. Of these participants, 71.2% were assigned female at birth. The average age was 24.26 years ($SD = 2.83$), with an age range of 18 to 29 years. In terms of sexual orientation, 73.3% ($n = 788$) identified as heterosexual. The remaining participants identified as gay or lesbian ($n = 120$, 11.2%), bisexual ($n = 123$, 11.4%), or queer + ($n = 44$, 4%). One participant (0.1%) did not report their sexual orientation. All individuals resided in Italy, and the majority ($n = 1{,}034$, 96.2%) were Italian citizens.

Regarding occupational status, most participants were students ($n = 644$, 59.9%). The others were employed ($n = 316$, 29.4%), both employed and studying ($n = 60$, 5.6%), or unemployed ($n = 55$, 5.1%). Living arrangements showed that 72.2% (n = 776) lived with their parents, while 11.1% (n = 120) lived alone. A total of 179 participants (16.7%) did not disclose their living situation.

A preliminary power analysis was performed using G*Power version 3.1.9.5 to determine the minimum required sample size for evaluating the study's hypothesis. The results indicated that a sample size of $N = 180$ was necessary to achieve 95% power when detecting a small effect size at a significance level of $\alpha = 0.01$ using the Fisher's test.

2.3 Materials

Participants were asked to complete the following self-report instruments:

The *Alcohol Use Disorders Identification Test* (AUDIT) is a 10-item screening tool developed by the World Health Organization (WHO) to detect hazardous and harmful alcohol consumption, as well as potential alcohol dependence [73]. Initially created for use in primary healthcare settings, the AUDIT has been validated in diverse populations and is effective in identifying a wide range of alcohol-related issues, from risky drinking to severe alcohol use disorders [74, 75]. The AUDIT assesses three core domains: alcohol intake, potential dependence, and alcohol-related harm. Alcohol intake is assessed through questions about the frequency and quantity of drinking (items 1–3). Dependence symptoms are evaluated by questions related to control over drinking, such as difficulty stopping once started (items 4–6). Alcohol-related harm is measured through questions about the negative consequences of drinking, including injuries and concerns raised by others (items 7–10) [74, 75]. The total score ranges from 0 to 40, with higher scores indicating greater alcohol-related risks [75]. A score of 8 or higher is considered the threshold for hazardous drinking, with scores of 15 or more indicating a high likelihood of alcohol dependence. The AUDIT can be administered in various modalities, including paper and online formats, and typically takes around two minutes to complete. Its brevity and ease of use make it ideal for both clinical and research settings. The AUDIT has demonstrated strong psychometric properties, with internal consistency (Cronbach's alpha) ranging from 0.75 to 0.97 across studies and it has been validated in multiple languages and cultural contexts, reinforcing its suitability for international use [73, 74]. In the present study, Cronbach's alpha value was 0.80, indicating good reliability.

The *Pathological Narcissism Inventory* (PNI), developed by Pincus et al. [76], is a widely used measure for assessing pathological narcissistic traits in both adolescents and adults [77]. The inventory consists of 52 items, scored on a 6-point Likert scale, where 0 indicates "Not at all like me" and 5 indicates "Very much like me." The PNI comprises seven first-order subscales that combine into two broader second-order dimensions: *Narcissistic Grandiosity* (NG) and *Narcissistic Vulnerability* (NV). Narcissistic Grandiosity includes the following subscales: Exploitativeness, defined by the tendency to manipulate others for personal gain (e.g., "I find it easy to manipulate people"); Self-Sacrificing Self-Enhancement, which refers to using altruistic behaviors to inflate one's self-image (e.g., "I try to show what a good person I am through my sacrifices"); and Grandiose Fantasy, characterized by fantasizing about receiving recognition and admiration for accomplishments (e.g., "I often fantasize about being recognized for my achievements"). Narcissistic Vulnerability encompasses four subscales: Contingent Self-Esteem, which reflects fluctuating self-worth dependent on external validation (e.g., "I need others to acknowledge me"); Devaluing, which refers to a lack of interest in others who do not provide admiration (e.g., "Sometimes I avoid people because I'm concerned that they'll disappoint me"); Hiding the Self, or reluctance to show vulnerabilities or needs to others (e.g., "I can't stand relying on other people because it makes me feel weak"); and Entitlement Rage, defined by a propensity to become angry when entitled expectations are unmet (e.g., "I can get pretty angry when others disagree with me"). Higher scores on these dimensions indicate more pronounced narcissistic traits. Previous studies have supported the PNI's validity and reliability in both clinical and non-clinical populations. For example, Di Pierro et al. [78] demonstrated its effectiveness in assessing pathological narcissism in community samples and individuals with personality disorders. Additionally, the construct's validity has been well supported, showing strong convergent and discriminant validity [79, 80]. In the present study, only the Narcissistic Grandiosity (NG) and Narcissistic Vulnerability (NV) second-order scales were utilized, with Cronbach's alpha values ranging from 0.85 to 0.93.

The *Brief-Mentalized Affectivity Scale* (B-MAS) [75] is a succinct self-report instrument developed to assess an individual's ability to reflect upon and regulate emotions—key components of mentalization. Designed as a more concise version of the Mentalized Affectivity Scale (MAS) [81], the B-MAS consists of 12 items that evaluate three fundamental dimensions of mentalized affectivity: Identifying (IDE), Processing (PRO), and Expressing (EXP) emotions. *Identifying* emotions refers to the recognition and labeling of one's feelings, as well as understanding their sources (e.g., "I try to put effort into identifying my emotions"). *Processing* emotions involves managing the intensity and duration of emotions through implicit regulation strategies (e.g., "It is hard for me to manage my emotions"). *Expressing* emotions pertains to effectively communicating emotions to others (e.g., "I often keep my emotions inside"). The B-MAS maintains the psychometric strengths of the original MAS while reducing the time required for administration, making it an ideal tool for use in both research and clinical settings. Its brevity enhances usability, yet it continues to exhibit strong construct validity, showing significant correlations with well-established measures of emotion regulation and mentalization. Moreover, the B-MAS has demonstrated predictive validity concerning various mental health outcomes. Thus, the B-MAS remains an effective tool for evaluating mentalized affectivity across diverse populations [82, 83]. The internal consistency of the B-MAS, as reflected by Cronbach's alpha, ranges from 0.77 to 0.81, indicating good reliability.

2.4 Statistical analyses

Data analyses were conducted using IBM SPSS Statistics for Macintosh, Version 27.0, and JASP (v.0.8.13). Initially, the dataset was examined for data entry accuracy and missing values. Normality was assessed by evaluating the skewness and kurtosis of each variable. The assumptions of multiple regression—including independence of residuals, linearity of variable relationships, homoscedasticity, multicollinearity, and error distribution—were then verified. A t-test was performed to identify gender differences in relevant variables. Subsequently, two hierarchical multiple regressions were conducted separately for males and females to explore the associations between narcissistic features, mentalized affectivity, and alcohol misuse.

In the first hierarchical regression model for the female subsample, alcohol misuse was the outcome variable. Narcissistic grandiosity was included as a predictor in Step 1. In Step 2, Narcissistic vulnerability was added to assess its association with alcohol misuse beyond NG. Finally, in Step 3, the dimensions of mentalized affectivity were incorporated to examine their relationship with alcohol misuse over and above narcissistic grandiosity and narcissistic vulnerability. The second hierarchical regression model was conducted separately for the male subsample.

Table 1 Descriptive statistics of the Study Variables

						Skewness		Kurtosis	
	N	Mean	Median	SD	Minimum	Maximum	Skewness	SE	Kurtosis	SE
Alc_Mis	1075	4.36	3.00	4.330	0.000	31.00	2.1199	0.0746	5.9789	0.149
NG	1075	2.43	2.46	0.688	0.360	4.69	− 0.0199	0.0746	0.0868	0.149
NV	1075	2.24	2.28	0.770	0.134	4.52	− 0.0150	0.0746	0.0312	0.149
PROCESSING	1075	16.19	16.00	4.901	4.000	28.00	− 0.0991	0.0746	− 0.1102	0.149
DIFFINEXPRESSING	1075	14.66	15.00	5.355	4.000	28.00	0.1141	0.0746	− 0.5675	0.149
IDENTIFYING	1075	20.46	21.00	4.770	4.000	28.00	− 0.4181	0.0746	− 0.2762	0.149

Alc_Mis = Alcohol Misuse; NG = Grandiose Narcissism; NV = Vulnerable Narcissism; PROC = Processing Emotions; DIFFINEXPR = Difficulties in Expressing Emotions; IDENT = Identifying Emotions

Table 2 Zero-Order Correlations Among Pathological Narcissism, Alcohol Misuse and Mentalized Affectivity

Correlation matrix						
	1	2	3	4	5	6
1.Alc_Mis	—					
2.NG	0.138 ***	—				
3.NV	0.158 ***	0.583 ***	—			
4.PROC	-0.110 ***	-0.059	-0.426 ***	—		
5.DIFFINEXPR	-0.015	0.034	-0.304 ***	0.330 ***	—	
6.IDENT	-0.066 *	0.157 ***	0.075 *	0.175 ***	0.322 ***	—

Alc_Mis = Alcohol Misuse; NG = Grandiose Narcissism; NV = Vulnerable Narcissism; PROC = Processing Emotions; DIFFINEXPR = Difficulties in Expressing Emotions; IDENT = Identifying Emotions;

* p < .05

** p < .01

*** p < .001

3 Results

In all scales, no missing values were present. Descriptive statistics indicated that the variables were normally distributed with respect to skewness and kurtosis, except for Alcohol Misuse, which showed a slight departure from normality (see Table 1). In the entire sample, 133 participants (12.4%) were identified as alcohol abusers, of whom 61% ($n = 75$) were female. Additionally, 38 participants (3.5%) were classified as alcohol dependents, with 54.3% ($n = 19$) of them being female.

Overall, the data revealed significant gender differences in alcohol misuse, $t(1032) = -4.29$, $p < 0.001$; narcissistic grandiosity, $t(1032) = -3.31$, $p < 0.001$; narcissistic vulnerability, $t(1032) = 2.46$, $p < 0.001$; emotional processing, $t(1032) = -3.89$, $p < 0.001$; and emotional identification, $t(1032) = 4.62$, $p < 0.001$. No significant gender differences were found for emotional expression, $t(1032) = 1.81$, $p = 0.07$.

The linear associations between study variables are presentend in Table 2, while the results of the hierarchical regression models for female and male individuals are presented in Tables 3 and 4. In initial bivariate analyses, narcissitic grandiosity was significantly associated with alcohol misuse, indicating that higher levels of narcissistic grandiositiy correlated with increased alcohol-related behaviors. However, in the multivariate model, after controlling for narcissitic vulnerability and other predictors, grandiosity no longer significantly predicted alcohol misuse. Partial regression plots and a plot of studentized residuals against predicted values confirmed linearity. The independence of residuals was supported by Durbin-Watson statistics of 1.81 for the female model and 1.79 for the male model. Homoscedasticity was observed through visual inspection of a plot of studentized residuals versus unstandardized predicted values, and there was no evidence of multicollinearity, as indicated by tolerance values greater than 0.1.

In female individuals, narcissistic grandiosity significantly predicted alcohol misuse (Table 3). Step 1 was statistically significant, $R^2 = 0.02$, $F(1, 726) = 16.84$, $p < 0.001$. In Step 2, narcissistic grandiosity no longer significantly predicted

Table 3 Effects of Narcissistic Grandiosity, Narcissistic Vulnerability, and Mentalized Affectivity on Alcohol Misuse in Females

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.863	0.518		3.595	0.000					
	NG	0.859	0.209	0.151	4.104	0.000	0.151	0.151	0.151	1.000	1.000
2	(Constant)	1.192	0.537		2.219	0.027					
	NG	0.209	0.259	0.037	0.810	0.418	0.151	0.030	0.029	0.640	1.563
	NV	0.976	0.233	0.190	4.182	0.000	0.212	0.153	0.152	0.640	1.563
3	(Constant)	2.547	0.994		2.563	0.011					
	NG	0.272	0.279	0.048	0.975	0.330	0.151	0.036	0.035	0.546	1.831
	NV	0.904	0.287	0.176	3.154	0.002	0.212	0.117	0.114	0.422	2.372
	PROC	− 0.055	0.034	− 0.070	− 1.611	0.108	− 0.140	− 0.060	− 0.058	0.702	1.425
	DIFFINEXPR	0.050	0.030	0.072	1.660	0.097	− 0.036	0.062	0.060	0.701	1.427
	IDENT	− 0.058	0.032	− 0.071	− 1.800	0.072	− 0.059	− 0.067	− 0.065	0.844	1.184

Alc_Mis = Alcohol Misuse; NG = Grandiose Narcissism; NV = Vulnerable Narcissism; PROC = Processing Emotions; DIFFINEXPR = Difficulties in Expressing Emotions; IDENT = Identifying Emotions;

Table 4 Effects of Narcissistic Grandiosity, Narcissistic Vulnerability, and Mentalized Affectivity on Alcohol Misuse in Males

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.719	1.066		3.489	0.001					
	NG	0.608	0.405	0.086	1.500	0.135	0.086	0.086	0.086	1.000	1.000
2	(Constant)	3.617	1.076		3.361	0.001					
	NG	0.388	0.506	0.055	0.768	0.443	0.086	0.044	0.044	0.642	1.557
	NV	0.308	0.425	0.052	0.724	0.469	0.084	0.042	0.041	0.642	1.557
3	(Constant)	5.613	1.850		3.034	0.003					
	NG	0.451	0.518	0.064	0.871	0.385	0.086	0.050	0.049	0.599	1.668
	NV	0.466	0.496	0.078	0.939	0.349	0.084	0.054	0.053	0.462	2.163
	PROC	− 0.081	0.065	− 0.080	− 1.238	0.217	− 0.104	− 0.071	− 0.070	0.767	1.304
	DIFFINEXPR	0.127	0.063	0.131	2.024	0.044	0.044	0.116	0.115	0.763	1.311
	IDENT	− 0.151	0.066	− 0.148	− 2.302	0.022	− 0.085	− 0.132	− 0.130	0.780	1.282

Alc_Mis = Alcohol Misuse; NG = Grandiose Narcissism; NV = Vulnerable Narcissism; PROC = Processing Emotions; DIFFINEXPR = Difficulties in Expressing Emotions; IDENT = Identifying Emotions;

alcohol misuse when narcissistic vulnerability was entered into the model. The explained variance of Step 1 significantly increased when narcissistic vulnerability was added ($\Delta R^2 = 0.02$). Step 2 was statistically significant, $R^2 = 0.04$, $F(2, 725) = 17.36$, $p < 0.001$. Notably, in Step 3, mentalized affectivity variables were included in the model, and only narcissistic vulnerability predicted alcohol misuse in female individuals, with no significant increase in explained variance from Step 2 ($\Delta R^2 = 0.01$, $R^2 = 0.06$, $F(5, 722) = 8.53$, $p < 0.001$). Thus, the higher the narcissistic vulnerability, the higher the alcohol misuse in female emerging adults.

In male individuals, narcissistic grandiosity did not predict alcohol misuse (Table 4). Step 1 was not significant, $R^2 = 0.01$, $F(1, 304) = 2.25$, $p = 0.13$. In Step 2, neither narcissistic grandiosity nor narcissistic vulnerability significantly predicted alcohol misuse. The explained variance from Step 1 did not significantly increase when narcissistic vulnerability was added ($\Delta R^2 = 0.00$, $R^2 = 0.01$, $F(2, 303) = 1.39$, $p = 0.25$). Notably, in Step 3, when mentalized affectivity variables were included in the model, difficulties in expressing and identifying emotions predicted alcohol misuse in male individuals, with a significant increase in explained variance from Step 2 ($\Delta R^2 = 0.03$, $R^2 = 0.01$, $F(5, 300) = 2.42$, $p < 0.05$). Therefore, the greater the difficulties in expressing and identifying emotions, the higher the alcohol misuse in male emerging adults.

4 Discussion

This study aims to address gaps in the literature regarding the relationship between pathological narcissism, mentalization difficulties, and alcohol misuse in emerging adults. The findings reveal critical insights into how grandiose and vulnerable narcissism, coupled with mentalization difficulties, may contribute to alcohol misuse behaviors in this developmental phase. These results align with previous research [47, 53, 58] while expanding the understanding of gender differences and mentalization difficulties in the context of alcohol consumption.

Firstly, vulnerable narcissism played a significant role in alcohol misuse, particularly among female individuals. To the extent that vulnerable narcissism is characterized by emotional fragility, hypersensitivity to rejection, and a deep need for external validation, it likely lead individuals to use alcohol as a coping mechanism for emotional distress. This finding is consistent with previous research, highlighting that individuals with high levels of vulnerable narcissism are more prone to engage in maladaptive behaviors, such as substance use, to manage their internal struggles [53]. Vulnerable narcissist individuals, particularly female emerging adults, may turn to alcohol to alleviate feelings of inadequacy, shame, or rejection, reinforcing a cycle of emotional instability and alcohol misuse [47, 58]. The fact that this pattern was more pronounced in female individuals aligns with literature suggesting that they are more likely to use alcohol as a form of self-medication for emotional distress [46].

In contrast, grandiose narcissism did not emerge as a significant predictor of alcohol misuse in either gender once vulnerable narcissism was accounted for. This shift suggests that the initial relationship between grandiose narcissism and alcohol misuse may be better explained by grandiose narcissism's shared variance with other factors, such as narcissistic vulnerability and mentalizing difficulties. Consequently, while grandiose narcissism contributes to the overall risk profile at a bivariate level, its independent predictive value is reduced when examined alongside these additional variables. This finding underscores the importance of considering the interplay between different narcissistic traits and cognitive-affective factors in understanding alcohol misuse risk. Grandiose narcissism, which is characterized by inflated self-esteem, fantasies of superiority, and entitlement, is more outwardly expressed through behaviors aimed at garnering admiration and social validation [52]. While previous studies have linked grandiose narcissism to risk-taking behaviors such as binge drinking [53], our findings suggest that grandiose narcissism may not directly contribute to problematic alcohol misuse. Instead, grandiose narcissists may engage in drinking primarily as a social activity, driven by the desire to maintain their perceived superiority in social settings, rather than as a means of coping with emotional difficulties [52]. This supports the notion that grandiose narcissists are more focused on maintaining a positive self-image and are less likely to experience the emotional distress that typically leads to substance misuse and alcohol misuse [56–58].

An important aspect of this study is the role of mentalized affectivity for alcohol misuse, particularly among male individuals. The findings indicated that difficulties in identifying and expressing emotions were significant predictors of alcohol misuse in male emerging adults, highlighting the importance of emotional regulation in substance use behaviors. Insofar as mentalization plays a crucial role in managing emotional responses and interpersonal interactions [59, 60], difficulties in this ability can lead to maladaptive coping strategies, such as alcohol misuse, as individuals struggle to process and express their emotions in healthy ways. This finding is consistent with previous research, suggesting that poor emotional regulation is a key factor in the development of substance use problems, particularly in male individuals [61, 62, 65, 66]. That mentalization difficulties were more predictive of alcohol misuse in male emerging adults may reflect gender differences in emotional processing, with male individuals being more likely to suppress or avoid their emotions, leading to higher rates of alcohol misuse. Our findings align with prior research indicating that poor mentalization and related affective deficits, such as alexithymia, can lead to maladaptive coping strategies like alcohol misuse [84, 88]. The difficulties in processing and expressing emotions observed in male participants may reflect a broader issue of interoceptive sensibility, as highlighted in recent work by Lyvers and Thorberg [87], underscoring the need for gender-sensitive approaches in addressing emotion regulation as a pathway to substance misuse. Furthermore, studies have shown that emotion dysregulation and impulsivity are significant predictors of alcohol misuse across clinical and nonclinical populations, supporting the relevance of these findings for understanding gender differences in alcohol misuse [85, 86].

The gender differences observed in the study further underscore the complexity of the relationship between narcissism, mentalized affectivity, and alcohol misuse. While vulnerable narcissism was a stronger predictor of alcohol misuse in female individuals, mentalization difficulties played a more prominent role in male individuals. These findings highlight the need for gender-specific interventions that address the unique psychological and emotional

challenges faced by emerging adults in their substance use behaviors. Specifically, interventions targeting emotional regulation and mentalization skills may be particularly beneficial for male emerging adults, while those addressing vulnerable narcissism and emotional distress may be more effective for female emerging adults [61, 62].

Several limitations should be acknowledged. First, the cross-sectional design prevents to infer causality among pathological narcissism, mentalization difficulties, and alcohol misuse. While significant associations were found, it is unclear whether narcissistic traits and mentalized affectivity led to increased alcohol misuse or if alcohol misuse exacerbates these psychological factors. Longitudinal studies are thus needed to establish temporal relationships and potential causal pathways between these variables. Second, the reliance on self-report measures might have introduced response biases, such as social desirability or recall inaccuracies. In this vein, participants might have underreported or overreported their alcohol consumption and narcissistic tendencies due to social expectations or personal perceptions. Future research could benefit from incorporating objective measures, such as biological markers of alcohol use or reports from close relatives, to validate self-reported data. Third, the sample was predominantly female and consisted of cisgender emerging adults from a specific cultural context. This gender imbalance and cultural homogeneity limit the generalizability of the findings to other populations, including gender diverse individuals and those from diverse cultural backgrounds. Expanding the sample to include a more balanced representation of genders and cultures would enhance the applicability of the results.

Additionally, the use of convenience sampling methods, such as snowball sampling through social media, may have resulted in selection bias. Participants who were more active on social media or interested in psychological research might differ systematically from those who did not participate, potentially affecting the study's external validity. Employing randomized sampling techniques in future studies could mitigate this issue. Furthermore, the study did not control for other variables that could influence alcohol misuse, such as comorbid mental health conditions (e.g., depression, anxiety disorders), personality traits beyond narcissism (e.g., impulsivity, neuroticism), or environmental factors (e.g., peer pressure, family history of substance abuse). These factors might confound the relationships observed between narcissism, mentalization, and alcohol misuse. Future research should consider including these variables to provide a more comprehensive understanding of the factors contributing to alcohol misuse in emerging adults.

In conclusion, this study contributes to the growing body of research on narcissism, mentalization, and substance use by emphasizing the differential roles of grandiose and vulnerable narcissism and highlighting the importance of mentalization difficulties in alcohol-related behaviors. By suggesting that vulnerable narcissism and mentalization difficulties independently contribute to alcohol misuse, the findings provide a more nuanced understanding of the psychological mechanisms underlying alcohol use in emerging adults [44, 61].

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Declarations

Competing interests None to declare.

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