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Investigating the Relationship between Personality Traits and Academic Burnout: The Mediating Role of Alexithymia

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ABSTRACT

Objective: The present study aimed to investigate the socio-cognitive antecedents of academic burnout within a causal model.

Methods: This research employed a correlational design using structural equation modeling. The statistical population consisted of all adolescent high school students in Firoozabad during the 2020–2021 academic year. A total of 285 students were selected through multistage cluster random sampling. Data were collected using the Academic Burnout Scale, Toronto Alexithymia Scale and NEO Personality Inventory. Data analysis was conducted using structural equation modeling, and the mediating role was examined through the bootstrap procedure in AMOS.

Results: Personality traits had a direct effect on alexithymia as well as an indirect effect on academic burnout through the mediating role of alexithymia. Additionally, alexithymia had a direct effect on academic burnout.

Conclusions: Personality traits and alexithymia are key constructs in explaining academic burnout.

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Introduction

Burnout is generally defined as a psychological syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Adibi et al., 2023; Byrne et al., 2013). One prominent manifestation of burnout is academic burnout, which, among school students, refers to feelings of exhaustion due to academic demands and requirements—manifesting as fatigue, a pessimistic and disengaged attitude toward schoolwork (cynicism), and a sense of inefficacy as a student with low academic performance (Zhang et al., 2007).

As noted, academic burnout comprises three core components: emotional exhaustion, cynicism (disinterest), and inefficacy (Zhang et al., 2007). Of these components, emotional processes—particularly deficits in the ability to manage, analyze, understand, and express emotions—are most closely related to the construct. One such construct associated with academic burnout is alexithymia, or the inability to express emotions (Alizade et al., 2016). Emotions serve multiple functions, including evolutionary, communicative, and social roles. Research has shown that the inability to express emotions is associated with a range of psychological, social, physiological, and other functional difficulties (Gross, 2013). Alexithymia is characterized by disturbances in affective and cognitive functioning, accompanied by difficulty converting the emotional arousal of experiences into feelings and imaginative representations that symbolize emotions (Sedaghatkhah et al., 2023). Notable features of alexithymia include a persistent focus on describing bodily sensations instead of emotions, concrete and externally-oriented thinking, and a restricted imaginative life (Ditzer et al., 2023). These characteristics may cause individuals to perceive themselves as incapable of coping with life challenges, thereby increasing the likelihood of experiencing academic burnout in educational contexts.

Individuals with alexithymia typically exhibit three main features: difficulty identifying feelings, difficulty describing feelings, and an externally oriented thinking style (Ditzer et al., 2023). They struggle with recognizing, expressing, processing, and regulating emotions. Alexithymia may present in various forms, such as difficulty conceptualizing emotions, differentiating between emotions, experiencing emotions consciously, or articulating stress that manifests as somatic dysfunction (Preece et al., 2022). Consequently, individuals who are unable to identify, describe, and express their emotions often cannot adequately communicate their needs, resolve problems, or seek support from others. This can lead to psychological fatigue and, within academic settings,

the onset of academic burnout. Previous research indicates that alexithymia is one of the antecedents of academic burnout (Alizade et al., 2016; Wang et al., 2023).

Furthermore, emotional regulation and dysregulation develop over time and are strongly influenced by stable individual characteristics—particularly personality traits. Personality, defined as a relatively stable pattern of traits, dispositions, or characteristics, contributes to behavioral consistency over time and across situations. These traits may be unique to an individual or shared among members of a species, yet their patterns differ across individuals (Widiger, 2007). Costa and McCrae proposed a five-factor model of personality, comprising neuroticism (N), extraversion (E), agreeableness (A), conscientiousness (C), and openness to experience (O) (Soto & Jackson, 2013).

Neuroticism reflects low emotional stability in the face of a range of negative emotions, such as sadness, irritability, and nervous tension. High levels of neuroticism can increase susceptibility to negative emotional biases and fatigue, hinder clarity in emotional experience and expression, and ultimately exacerbate alexithymia (Widiger & Crego, 2019). In contrast, extraversion and agreeableness are interpersonal traits that can foster positive social relationships and social support during stressful times, helping individuals manage emotions effectively and potentially reducing alexithymia (Picardi et al., 2005). Conscientiousness, which involves socially desirable impulse control, and openness to experience, which relates to cognitive complexity and depth, may enable individuals to develop the knowledge, skills, and awareness needed to address life challenges (Andres et al., 2014). These traits can enhance emotional management and reduce deficits in emotional expression.

Empirical evidence supports the role of personality traits as important antecedents of alexithymia and academic burnout (Ditzer et al., 2023; Karukivi & Saarijärvi, 2014; Li et al., 2023; Luminet et al., 2021; Tahir et al., 2012).

Given the theoretical and empirical associations between these constructs, no study to date has examined their interrelationships within a causal model. Therefore, the present study seeks to address the fundamental question: Does alexithymia mediate the relationship between personality traits and academic burnout?

Material and Methods

The present study was a fundamental research project in terms of its objective and employed a descriptive methodology with a correlational design based on structural equation modeling (SEM). The statistical population comprised all upper-secondary school students enrolled in academic (theoretical) high schools in Firoozabad during the 2020–2021 academic year. According to Meyers et al. (2016), the minimum required sample size for SEM is 200 participants. Accordingly, the study sample consisted of 285 students, selected through multistage cluster random sampling. Specifically, four upper-secondary schools (two boys' schools and two girls' schools) were randomly selected, and within each school, two classes were chosen at random. The final sample included 137 girls (47%) and 148 boys (52%).

Inclusion criteria included the consent of the school and class to participate in the study. The exclusion criterion was incomplete questionnaire responses. Participants were informed that their responses would be used solely for research purposes, that no names or identifying information would be recorded, and that data would be kept confidential.

Measures

Academic Burnout Questionnaire: This scale was developed by Bresó et al. (2007), this self-report instrument consists of 15 items measuring three dimensions: emotional exhaustion (5 items), cynicism toward school (4 items), and academic inefficacy (6 items). Responses are rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), with total scores ranging from 15 to 75. Enayati and Rastegar Tabar (2017) confirmed its content and face validity and reported a Cronbach's alpha of 0.80. In the present study, Cronbach's alpha was 0.83.

Toronto Alexithymia Scale (TAS-20): This scale was developed by Bagby et al. (1994) and translated into Persian by Besharat (2007), this scale contains 20 items rated on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) and assesses three factors: difficulty identifying feelings, difficulty describing feelings, and externally oriented thinking. Besharat (2007) reported Cronbach's alphas of 0.82, 0.75, and 0.72 for the three subscales, respectively, and 0.85 for the total scale. Test–retest reliability over a four-week interval ranged from r = 0.80 to r = 0.87. In another study, In the present study, Cronbach's alpha for the total score was 0.86.

NEO Five-Factor Inventory (NEO-FFI): This inventory was developed by McCrae and Costa Jr (2004), the short form contains 60 items assessing five personality dimensions: neuroticism (N),

extraversion (E), agreeableness (A), conscientiousness (C), and openness to experience (O), with 12 items per dimension. Items are rated on a 5-point Likert scale (1 = strongly agree to 5 = strongly disagree). Ashton and Lee (2005) reported Cronbach's alphas of 0.90, 0.92, 0.89, 0.89, and 0.90 for the respective dimensions. In a Persian validation study, Azkhosh and Asgari (2014) reported factor loadings between 0.60 and 0.80, and overall reliability coefficients of 0.79 (test–retest), 0.63 (Cronbach's alpha), and 0.65 (split-half). In the present study, Cronbach's alpha values for the dimensions ranged from 0.72 to 0.84.

Prior to data collection, participants received explanations regarding the study objectives, the nature of the questionnaires, and the instructions for completing them. The instruments were then administered for self-completion. Descriptive statistics (mean and standard deviation) and Pearson correlation coefficients were computed. Hypotheses were tested using structural equation modeling in AMOS version 21.

Results

First, descriptive statistics including means and standard deviations were computed, followed by correlation coefficients among the study variables. Finally, findings related to the study hypothesis were examined. The complete descriptive statistics and correlation matrix are presented in Table 1.

Table 1. Descriptive Statistics and Correlation Matrix for Study Variables

Variable	Mean	SD	Emotional exhaustion	Cynicism	Inefficacy	Academic burnout
Extroversion	47.17	7.97	-0.64**	-0.52**	-0.65**	-0.70**
Agreement	47.28	8.24	-0.57**	-0.55**	-0.58**	-0.66**
Conscientiousness	45.84	7.86	-0.61**	-0.58**	-0.59**	-0.69**
Openness to Experience	47.32	8.01	-0.59**	-0.55**	-0.62**	-0.68**
Neuroticism	27.46	8.07	0.54**	0.52**	0.54**	0.62**
Alexithymia	42.66	13.41	0.28**	0.25**	0.27**	0.31**
Academic burnout	33.88	8.71	0.73**	0.65**	0.68**	1

As shown in Table 1, the dimensions and total score of academic burnout were significantly and negatively correlated with the personality traits of extraversion, agreeableness, conscientiousness, and openness to experience, and significantly and positively correlated with neuroticism. Additionally, academic burnout showed a significant positive correlation with alexithymia. Given the significant relationships between the components and total score of academic burnout with all study variables, the next step was to examine the research question.

To test the question—**"**Does alexithymia mediate the relationship between personality traits and academic burnout?"—structural equation modeling (SEM) was conducted. Results indicated that most of the hypothesized paths were statistically significant. The final model representing the relationships among the study variables is depicted in Figure 1, and Table 2 presents the model fit indices.

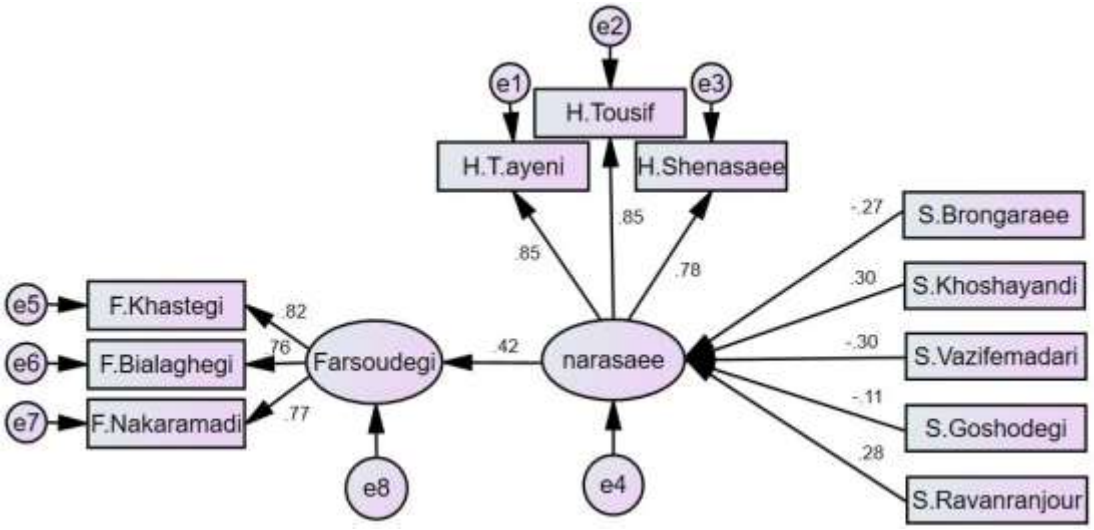

Figure 1. Research model

Table 2. Fit Indices for the Final Model

Indices	X^2/df	P	GFI	AGFI	IFI	TLI	RATIO	PCFI	RMSEA
Before modification	5.29	0.001	0.83	0.75	0.81	0.81	0.12	0.001	5.29
After modification	1.11	0.07	0.97	0.94	0.92	0.93	0.04	0.13	1.11

As shown in Table 2, the initial model did not demonstrate adequate fit. After removing non-significant paths and applying the modification indices suggested by AMOS, the model achieved an acceptable fit. The post-modification fit indices confirmed that the final model was well-fitted to the data.

Table 3. Standardized Direct, Indirect, and Total Effects in the Final Model

Path	Direct effect	Indirect effect	Total effect
Extraversion on alexithymia	-0.27	-	-0.27
Extroversion on Academic Burnout with Mediation of alexithymia	-	-0.05	-0.05
Agreeableness on alexithymia	0.30	-	0.30
Agreeableness on Academic Burnout with Mediation of alexithymia	-	0.04	0.04
Duty on alexithymia	-0.30	-	-0.30
Conscientiousness on Academic Burnout with Mediation of alexithymia	-	-0.05	-0.05
Openness to Experience on alexithymia	-0.11	-	-0.11
Openness to Experience on Academic Burnout with Mediation of alexithymia	-	-0.02	-0.02
Neuroticism on Academic Burnout with Mediation of alexithymia	0.28	-	0.28
Neuroticism on Academic Burnout with Mediation of alexithymia	-	0.04	0.04
Suffocation on Academic Burnout	0.42	-	0.42

Based on Figure 1 and Table 3, the results can be summarized as follows:

Extraversion had a significant negative direct effect on alexithymia ($\beta = -0.27$, $p = .001$) and a significant negative indirect effect on academic burnout through alexithymia ($\beta = -0.05$, $p = .04$). Agreeableness had a significant positive direct effect on alexithymia ($\beta = 0.30$, $p = .001$). Conscientiousness had a significant negative direct effect on alexithymia ($\beta = -0.30$, $p = .001$) and a significant negative indirect effect on academic burnout through alexithymia ($\beta = -0.05$, $p = .04$). Openness to experience had a significant negative direct effect on alexithymia ($\beta = -0.11$, $p = .04$). Neuroticism had a significant positive direct effect on alexithymia ($\beta = 0.28$, $p = .001$) and alexithymia had a significant positive direct effect on academic burnout ($\beta = 0.42$, $p = .001$).

Discussion

The present study aimed to examine the mediating role of alexithymia in the relationship between personality traits and academic burnout. The results indicated that neuroticism had a positive relationship with alexithymia, whereas the remaining personality traits showed negative relationships with alexithymia. Furthermore, alexithymia was positively associated with academic burnout. Findings also revealed that alexithymia significantly mediated the relationships between the dimensions of personality traits and academic burnout. These findings are consistent with the results of Alizade et al. (2016), Enayati and Rastegar Tabar (2017), Tahir et al. (2012), Wang et al. (2023) and Karukivi and Saarijärvi (2014).

From a theoretical perspective, among the Big Five personality factors, extraversion and agreeableness are primarily related to interpersonal characteristics. Extraverts, due to their broader

social networks (Azkhosh & Asgari, 2014), are more likely to seek help from others when facing interpersonal or intrapersonal challenges. By obtaining greater social support, they enhance their psychological resilience to cope with these challenges. This sense of support enables them to perceive themselves as more capable of regulating their emotions and, consequently, to experience fewer difficulties in expressing emotions. As difficulties in expressing emotions and distinguishing emotional states from bodily sensations are key features of alexithymia (Gross, 2013), extraversion can reduce alexithymia through enhanced psychological and social resources. In contrast, if an individual struggles with emotion regulation and expression, interpersonal relationships may deteriorate, academic tasks may become more challenging, and adaptation to the educational environment may be impaired. Over time, such challenges can lead to diminished interest in academic matters and result in academic burnout, which is characterized by reduced engagement and energy for academic activities (Zecca et al., 2015). Students experiencing academic burnout often lack motivation for class participation and display behavioral patterns such as absenteeism, tardiness, and leaving classes early. Thus, the observed significant mediating role of alexithymia in the relationship between extraversion and academic burnout is both theoretically plausible and empirically supported.

Conscientiousness, on the other hand, reflects goal-directed behavior and socially acceptable impulse control (Roberts et al., 2014). Conscientious individuals tend to hold themselves accountable for their emotions and behaviors in social interactions as well as for their mental well-being. This self-regulation reduces the likelihood of impulsive emotional expression without considering its psychological and social consequences, thereby facilitating the accurate identification and appropriate expression of emotions. Given that difficulties in identifying, describing, and expressing emotions are central features of alexithymia (Gross, 2013), conscientiousness is inversely related to alexithymia. However, when such difficulties are present, individuals may experience emotional exhaustion, feel depleted of affective energy, and lose the capacity or motivation to address challenges in the academic environment—ultimately contributing to academic burnout (Maslach & Leiter, 2016). Therefore, the significant mediating effect of alexithymia between conscientiousness and academic burnout is also theoretically consistent.

Regarding openness to experience, individuals high on this trait tend to possess breadth, depth, and complexity in their cognitive, mental, and experiential lives. They typically have wide-ranging interests, enjoy novelty, and are associated with intellectual curiosity, receptiveness to new ideas, and creativity (Silvia & Christensen, 2020). Such individuals often possess rich social and psychological experiences, and this diversity of experiences equips them with multiple strategies for addressing psychological and social problems. In emotionally charged situations, they are more likely to evaluate circumstances carefully and adjust their emotional responses accordingly. This capacity reduces the likelihood of confusion or impulsivity in emotional expression and facilitates accurate identification, description, and expression of emotions, thereby lowering alexithymia levels (Gross, 2013). A reduction in alexithymia, in turn, enhances emotional competence, resilience in academic and social contexts, and a sense of efficacy in problem-solving—ultimately lowering academic burnout. Thus, the significant mediating role of alexithymia between openness to experience and academic burnout is also conceptually sound.

Finally, the positive association between neuroticism and alexithymia can be explained by the fact that neuroticism is characterized by a chronic tendency to experience distressing emotions such as fear, sadness, embarrassment, anger, guilt, and disgust (De Gucht et al., 2004). These tendencies hinder effective emotion regulation and impair the identification, description, and expression of emotions, thereby increasing alexithymia (Gross, 2013). Elevated alexithymia, in turn, exacerbates negative emotions and hampers social interactions, leading to emotional exhaustion and, specifically, academic burnout. Accordingly, the significant mediating role of alexithymia in the relationship between neuroticism and academic burnout is well-supported.

In summary, positive personality traits can enhance psychological resilience and social support, enabling individuals to manage emotions more effectively and thereby reducing academic burnout. In contrast, neuroticism, by fostering negative emotional states and reducing psychological resilience, impairs emotion regulation and increases academic burnout. Thus, the significant mediating role of alexithymia in the relationship between personality traits and academic burnout is both reasonable and theoretically justified.

While this study sought to address certain limitations of previous research, it is not without its own constraints. First, the participants were secondary school students, and caution should be exercised in generalizing the findings to other populations. Second, as the proposed model was evaluated

using structural equation modeling, causal inferences should be made with caution. Future research is encouraged to control for demographic factors such as gender and socioeconomic status, given their potential influence on academic burnout. Furthermore, exploring other cognitive, emotional, and behavioral constructs—such as hope and responsibility—may extend the current findings and provide a broader understanding of the antecedents of academic burnout.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

S. F.S.N., M.J.P. and K.S. contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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