


# Comparison of the Effectiveness of Imago Therapy and Schema Therapy on Executive Functions in Students with Academic Burnout

Leila. Karimiabadeh<sup>1</sup>, Hossein. Bigdeli<sup>2\*</sup>, Mohsen. Ahmadi Tahour Soltani<sup>3</sup>

<sup>1</sup> PhD student in Educational Psychology, Department of Psychology (NT.C.), Islamic Azad University, Tehran, Iran

<sup>2</sup> Assistant Professor, Department of Psychology, ET.C., Islamic Azad University, Tehran, Iran

<sup>3</sup> Associate professor, Behavioral Sciences Research Center, Life Style Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran

\* Corresponding author email address: H.bigdeli@iauet.ac.ir

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## ABSTRACT

**Objective:** This study aimed to compare the effectiveness of Imago therapy and schema therapy in improving executive functions among university students experiencing academic burnout.

**Methods and Materials:** The research employed a quasi-experimental design with a pretest–posttest–follow-up structure and a control group. The statistical population consisted of undergraduate students from Shiraz Nonprofit University during the 2024–2025 academic year who met the criteria for academic burnout. Forty-five students were selected using convenience sampling and randomly assigned to three groups: two experimental groups (Imago therapy and schema therapy) and one control group, each comprising 15 participants. The experimental groups received Imago therapy (seven 120-minute modules) and schema therapy (eight 90-minute sessions), while the control group received no intervention. Data were collected at three stages—pretest, posttest, and follow-up—using the Academic Burnout Questionnaire and the Behavior Rating Inventory of Executive Function–Adult Version (BRIEF-A). Data analysis was performed using repeated measures analysis of variance (ANOVA) and Bonferroni post hoc tests with SPSS version 25.

**Findings:** The results demonstrated that both therapeutic interventions led to statistically significant improvements in executive functions—including working memory, cognitive flexibility, and response inhibition—compared with the control group ( $p < .001$ ). Additionally, Imago therapy showed significantly greater effectiveness than schema therapy in both the posttest and follow-up stages ( $F(4,114) = 12.021, p < .001, \eta^2 = .297$ ).

**Conclusion:** These findings highlight the importance of relationship-based and reflective interventions in improving cognitive regulation and reducing academic burnout.

**Keywords:** Imago therapy; schema therapy; executive functions; academic burnout; emotional regulation; cognitive flexibility.

## 1. Introduction

Academic burnout has become one of the most concerning psychological issues among university students in recent years, reflecting a multifaceted interaction between emotional exhaustion, cognitive overload, and motivational decline. This condition typically manifests as reduced engagement with academic tasks, feelings of incompetence, and chronic fatigue, which collectively undermine learning, performance, and psychological well-being (Saadati & Mirzamani, 2019). In academic settings characterized by competitive pressures and high performance expectations, students' mental health and executive functions—the cognitive mechanisms that enable planning, attention regulation, working memory, and self-control—are profoundly affected (McCarthy et al., 2021). The rising prevalence of burnout among students and its association with maladaptive emotional and cognitive patterns necessitate the exploration of evidence-based psychotherapeutic interventions that promote resilience, emotional awareness, and cognitive flexibility.

Academic burnout is not merely an outcome of excessive workload; rather, it reflects an imbalance between internal resources and external demands, often leading to significant impairments in executive functioning and psychological adjustment (Chang et al., 2020). Executive functions represent higher-order cognitive processes that govern self-regulation, decision-making, and goal-directed behavior, serving as essential mechanisms for effective academic adaptation. Deficits in these functions contribute to procrastination, cognitive rigidity, and emotion dysregulation, which in turn perpetuate burnout symptoms (Balideh et al., 2025). Previous research indicates that individuals experiencing burnout display compromised cognitive flexibility and diminished working memory, both of which are critical for problem-solving and adaptive coping (McCarthy et al., 2021). Therefore, enhancing executive functions may constitute a key strategy in mitigating the detrimental cognitive and emotional consequences of academic burnout.

The conceptual foundation of academic burnout draws on the transactional stress model, which posits that cognitive appraisal and coping resources mediate the effects of stressors on psychological outcomes (Dyrbye et al., 2017). In this context, cognitive distortions, schema activation, and maladaptive relational patterns play a central role in shaping emotional responses to academic stress. Chronic exposure to perceived failure and self-criticism gradually leads to

cognitive exhaustion, emotional detachment, and diminished self-efficacy (Saadati & Mirzamani, 2019). Research has further established that deficits in executive attention and cognitive control exacerbate susceptibility to burnout by impairing emotion regulation and adaptive coping (Yao et al., 2024). This theoretical framework suggests that psychotherapeutic interventions aimed at strengthening executive control and cognitive-emotional integration may provide significant relief for students suffering from burnout.

Among emerging therapeutic models, **schema therapy** has demonstrated substantial efficacy in addressing maladaptive cognitive structures underlying chronic emotional and behavioral difficulties (Renner et al., 2016). Developed by Young, schema therapy integrates elements of cognitive-behavioral, experiential, and attachment-based approaches to identify and modify early maladaptive schemas—deep-seated cognitive-emotional patterns formed in childhood and reactivated in adult relationships and stressful contexts. These schemas, such as failure, unrelenting standards, or emotional deprivation, often perpetuate cycles of burnout by reinforcing negative self-evaluations and perfectionistic attitudes. Schema therapy targets both cognitive and affective components of these patterns through techniques like cognitive restructuring, imagery rescripting, and behavioral experiments, enabling individuals to develop healthier self-concepts and more adaptive coping responses (Renner et al., 2016).

Recent empirical findings support the use of schema therapy in enhancing executive functioning by improving cognitive flexibility and self-regulation. By confronting rigid schemas and encouraging emotional awareness, individuals become more capable of shifting perspectives, maintaining task focus, and managing frustration in challenging academic environments (Pascual et al., 2019). In students, these improvements translate into better attention management, reduced impulsivity, and increased academic motivation. Moreover, schema therapy's focus on emotional validation and self-compassion aligns well with preventive strategies for academic burnout, which emphasize balanced self-expectations and adaptive coping.

Another promising approach is Imago therapy, originally developed to strengthen relational understanding and empathy between individuals but increasingly recognized for its cognitive-emotional benefits in therapeutic contexts (Bagheri et al., 2023). Imago therapy conceptualizes interpersonal difficulties as reflections of unresolved childhood experiences, emphasizing emotional attunement,

conscious communication, and empathy as mechanisms of psychological healing. Within academic settings, Imago-based interventions have been adapted to promote self-awareness, emotional regulation, and cognitive integration—skills that are critical for managing academic stress and sustaining mental well-being (Ghadampour & Ahmadi, 2023). The structured dialogue process central to Imago therapy—consisting of mirroring, validation, and empathy—fosters emotional safety and cognitive reflection, allowing participants to recognize and reframe negative internal dialogues. Through these processes, students enhance metacognitive awareness and strengthen executive control over attention and emotion.

Imago therapy's effectiveness in improving self-awareness and cognitive processing is supported by recent research showing its positive impact on emotion regulation, interpersonal functioning, and cognitive flexibility among students (Bagheri et al., 2023; Ghadampour & Ahmadi, 2023). By facilitating the integration of affective experiences with rational processing, Imago therapy helps individuals shift from reactive to reflective modes of functioning. This transformation not only enhances interpersonal relationships but also supports higher-order executive processes such as inhibitory control, working memory, and planning—key components of academic success. The therapeutic emphasis on empathy and connectedness further mitigates emotional exhaustion and fosters resilience against burnout-related detachment and cynicism.

The interplay between executive functions and academic well-being has been extensively investigated in developmental and educational psychology. Executive functions—including inhibition, working memory, and cognitive flexibility—are critical determinants of students' capacity to regulate behavior, sustain attention, and manage emotional responses to stressors (Schäfer et al., 2024). Studies demonstrate that students with stronger executive control display better academic outcomes and greater psychological resilience under pressure (Santín et al., 2016). Conversely, impairments in these domains correlate with diminished problem-solving abilities, emotional instability, and maladaptive coping behaviors, which collectively contribute to academic burnout. In this regard, interventions targeting cognitive flexibility and emotional regulation represent promising approaches to restoring optimal executive functioning and academic engagement (Pascual et al., 2019; Yao et al., 2024).

Moreover, neurocognitive research underscores that executive functions are deeply intertwined with emotional

and motivational processes, operating through prefrontal-limbic interactions that shape goal-directed behavior and self-regulation (Schäfer et al., 2024). When students experience sustained stress, the prefrontal cortex's regulatory capacity diminishes, leading to heightened emotional reactivity and impaired cognitive control. Consequently, psychological interventions that strengthen metacognitive awareness and emotional processing can restore functional balance in these neural systems. Schema therapy and Imago therapy, both of which emphasize awareness, cognitive restructuring, and emotional attunement, address these deficits by engaging cognitive and affective networks simultaneously.

The literature on burnout among students consistently emphasizes its pervasive and multidimensional nature. Dyrbye et al. (2017) reported high rates of psychological distress—including depression and anxiety—among medical and university students, highlighting the urgent need for preventive and corrective interventions (Dyrbye et al., 2017). Chang et al. (2020) similarly observed that stress, depression, and lack of support were strongly predictive of burnout symptoms among students in demanding academic programs (Chang et al., 2020). Such findings suggest that burnout not only reflects psychological vulnerability but also impairs cognitive efficiency, ultimately compromising academic achievement. Interventions that cultivate emotional intelligence, interpersonal awareness, and executive control thus offer a multidimensional pathway to restoring psychological balance and enhancing learning outcomes.

Research in cognitive psychology further supports the notion that improved executive functioning is associated with enhanced academic motivation, adaptive emotional responses, and effective self-regulation (Balideh et al., 2025). Executive functioning acts as a mediator between cognitive resources and behavioral performance, allowing individuals to prioritize tasks, inhibit distractions, and flexibly adjust to changing demands. When students engage in therapeutic processes that promote reflection, empathy, and cognitive restructuring, as in Imago and schema therapies, they experience not only emotional relief but also measurable cognitive benefits. Enhanced executive function contributes to greater academic persistence, reduced procrastination, and improved problem-solving—factors that collectively buffer against burnout and academic disengagement.

Empirical evidence from educational and clinical contexts reinforces the role of executive function training in

academic resilience. Pascual et al. (2019) found that executive functioning predicts motor and academic performance in younger students, while Santín et al. (2016) demonstrated that engagement in structured cognitive-physical activities improves academic performance through enhanced attention and inhibitory control (Pascual et al., 2019; Santín et al., 2016). These findings extend to higher education, where executive functioning mediates the relationship between mental health and academic performance (Balideh et al., 2025). Within this framework, therapeutic interventions like Imago therapy and schema therapy may serve as complementary educational tools to improve not only mental health but also academic competencies.

From a clinical standpoint, the integration of relational and cognitive-behavioral approaches provides a comprehensive response to the complex nature of academic burnout. While schema therapy primarily focuses on restructuring maladaptive cognitive-emotional patterns, Imago therapy targets interpersonal awareness and emotional communication, both of which are essential for cognitive flexibility and executive control (Bagheri et al., 2023; Ghadampour & Ahmadi, 2023). Combining insights from these models enables a holistic understanding of how cognitive schemas and relational dynamics interact to shape academic stress responses. Students who develop empathy, reflective thinking, and self-regulatory strategies become more capable of managing academic challenges without succumbing to emotional exhaustion or cognitive dysfunction.

In summary, academic burnout represents a significant threat to students' cognitive health and educational development, characterized by the erosion of executive functioning, emotional regulation, and motivation. The current study aims to compare the effectiveness of Imago therapy and schema therapy in improving executive functions among students experiencing academic burnout.

## 2. Methods and Materials

### 2.1. Study Design and Participants

This study employed a quasi-experimental design with a pretest–posttest structure, including a control group and a follow-up phase. In this design, participants were randomly assigned to three groups: two experimental groups (Imago therapy and schema therapy) and one control group. The experimental groups each received a specific therapeutic intervention, while the control group did not receive any

intervention. The research variables were assessed in three stages: pretest, posttest, and follow-up.

The statistical population consisted of all undergraduate students of Shiraz Nonprofit University during the 2024–2025 academic year who exhibited symptoms of academic burnout. After administering the Academic Burnout Screening Questionnaire, individuals who scored above the cutoff point of 60 were identified. A total of 45 participants were selected through convenience sampling and then randomly assigned to three groups of 15 participants each. The sample size was determined using G\*Power software based on a statistical power of 0.80 and a significance level of 0.05.

### 2.2. Measures

The Academic Burnout Questionnaire developed by Bresó, Salanova, and Schaufeli (1997), inspired by Maslach's occupational burnout model, was designed to measure levels of fatigue and academic demotivation among students. This instrument consists of 14 items assessing three core dimensions of academic burnout—academic exhaustion, academic cynicism, and academic inefficacy—using a five-point Likert scale ranging from “never” to “always.” Academic exhaustion refers to feelings of pressure and fatigue arising from academic activities; academic cynicism reflects negative attitudes or indifference toward studying; and academic inefficacy denotes perceived inability to accomplish academic tasks successfully. Items related to inefficacy are reverse-scored, and higher total scores indicate higher levels of academic burnout. This instrument demonstrates strong psychometric properties. Cronbach's alpha coefficients were reported as 0.84 for exhaustion, 0.82 for cynicism, and 0.76 for inefficacy, with a three-factor structure confirmed by factor analysis (Bresó, Salanova, & Schaufeli, 1997; Schaufeli, Martínez, Pinto, Salanova, & Bakker, 2002). In Iranian studies, the reliability and validity of this questionnaire have also been supported, with Cronbach's alpha coefficients ranging from 0.78 to 0.89 (Mahdavi & Raeit Ebrahimabadi, 2015; Sa'adati & Mirzamani, 2019). This questionnaire is a valid and practical tool for identifying various levels of academic burnout and examining its relationship with psychological variables such as motivation, academic engagement, and mental health. It can also serve as a basis for educational and counseling interventions.

The Behavior Rating Inventory of Executive Function—Adult Version (BRIEF-A), developed by Roth, Gioia, and



Isquith (2005), is a well-validated instrument for assessing executive functions in adults based on real-world behavioral observations. Unlike traditional cognitive tests that evaluate executive performance in laboratory settings, the BRIEF-A focuses on daily behavioral manifestations of executive functioning, which enhances its clinical and research utility.

The BRIEF-A comprises 72 items to be completed by adults aged 18 years and older, based on their experiences during the past six months. Items are rated on a five-point Likert scale ranging from 1 (never) to 5 (often). The inventory includes nine clinical scales forming two broader indices: the Behavioral Regulation Index (BRI)—which includes Inhibit, Shift, and Emotional Control subscales—and the Metacognition Index (MI)—which includes Initiate, Working Memory, Plan/Organize, Organization of Materials, and Monitor subscales. The BRIEF-A is used clinically to diagnose executive dysfunctions in disorders such as ADHD, traumatic brain injury, depression, and neurocognitive disorders; in research to explore the relationship between executive functioning and academic, occupational, and social performance; and in therapeutic contexts to evaluate the effectiveness of psychological and cognitive rehabilitation interventions. Psychometric studies have reported high internal consistency (Cronbach's alpha ranging from 0.78 to 0.95) and good concurrent validity with other executive function measures. Raw scores for each scale are converted to T-scores, where higher scores indicate greater difficulties in executive functioning.

### 2.3. Interventions

The schema therapy intervention was conducted in eight structured sessions, each focusing on the identification and modification of early maladaptive schemas through a combination of cognitive, behavioral, and experiential techniques. In the first session, participants were introduced to the therapeutic framework, group norms, and confidentiality principles, fostering trust and emotional safety. The second session focused on understanding the concept and origins of schemas, helping participants identify their personal maladaptive patterns. The third session addressed maladaptive coping styles—avoidance, surrender, and overcompensation—and explored their roles in maintaining schemas. In the fourth session, participants practiced cognitive reappraisal to challenge dysfunctional beliefs, supported by schema flashcards and group dialogue. The fifth session incorporated advanced cognitive techniques such as guided imagery and inner dialogue

restructuring to modify deep-seated beliefs. The sixth session emphasized behavioral change through role-playing and personalized behavioral assignments to translate cognitive insights into real-life actions. The seventh session centered on consolidating healthy schemas, strengthening emotional regulation, and preventing relapse into maladaptive patterns. Finally, the eighth session involved a comprehensive review of therapeutic progress, reflection on individual and group growth, and post-assessment planning for continued self-development beyond therapy.

The Imago therapy intervention followed Agathagelou's (2013) model and consisted of seven 120-minute modules designed to enhance self-awareness, emotional regulation, and relational competence through structured experiential and dialogical processes. The first module focused on establishing group trust and empathy by introducing the foundational principles of Imago theory and exploring the human need for connection and emotional safety. The second module examined the brain's relational systems, distinguishing instinctive and cognitive responses, and trained participants to recognize defensive reactions such as fight, flight, freeze, and submission in relational contexts. The third module introduced the Imago Dialogue—a structured three-step communication tool (mirroring, validation, empathy)—to replace destructive communication with conscious dialogue, practiced through dyadic exercises. The fourth module explored the roots of relational frustration, linking adult conflicts to unmet childhood needs and emotional wounds, encouraging participants to transform criticism into constructive communication. The fifth module focused on psychosocial developmental stages, identifying arrested growth points and inner child wounds through personal growth mapping and self-compassion exercises. The sixth module examined the influence of socialization on self-concept, guiding participants to differentiate and integrate various aspects of the self—authentic, performing, denied, and rejected selves—through reflective and acceptance-based practices. The final module centered on releasing past projections and repetitive relational defenses through group-based projection identification, completion of unfinished sentences, and symbolic exercises aimed at fostering self-acceptance, forgiveness, and emotional integration.

### 2.4. Data Analysis

Data were analyzed using repeated-measures analysis of variance (Repeated Measures ANOVA) to examine the

effects of time, group, and their interaction. Bonferroni post hoc tests were used to compare group means. All statistical analyses were conducted using SPSS version 25.

### 3. Findings and Results

In this study, 45 undergraduate students participated, with a mean age of 21.2 years and a standard deviation of 2.4 years. Among them, 27 were female ( $M = 20.9$ ,  $SD = 2.7$ )

and 18 were male ( $M = 21.6$ ,  $SD = 2.2$ ). Participants were randomly assigned to three groups: the Imago therapy group (9 females and 6 males), the schema therapy group (9 females and 6 males), and the control group (9 females and 6 males).

Descriptive indices of the research variables, including means and standard deviations for both the experimental and control groups across the pretest, posttest, and follow-up phases, are presented in Table 1.

**Table 1**

*Descriptive Statistics of Research Variables*

| Group          | Variable            | M (Pretest) | SD (Pretest) | M (Posttest) | SD (Posttest) | M (Follow-up) | SD (Follow-up) |
|----------------|---------------------|-------------|--------------|--------------|---------------|---------------|----------------|
| Imago therapy  | Executive functions | 170.48      | 12.04        | 187.87       | 9.96          | 143.03        | 10.12          |
| Schema therapy | Executive functions | 166.27      | 12.58        | 189.33       | 11.33         | 115.21        | 12.08          |
| Control        | Executive functions | 171.42      | 11.99        | 170.27       | 10.06         | 169.47        | 6.75           |

As shown in Table 1, there were observable differences between the mean scores of participants in the experimental groups compared to the control group in both posttest and follow-up assessments. To determine whether these differences were due to measurement errors or confounding variables—or were in fact the result of the independent variables (Imago therapy and schema therapy)—inferential statistical analyses were conducted.

The preliminary assumption tests confirmed that the distribution of the dependent variable scores across the three measurement phases (pretest, posttest, and follow-up) met the requirement of normality, as the Kolmogorov–Smirnov test results were not statistically significant for any variable

in either the experimental or control groups. This indicates that the dependent variable followed a normal distribution. Additionally, Mauchly's test of sphericity was not significant, confirming that the variances of the differences among the levels of the repeated measures were equal and that the sphericity assumption was met. The Box's M test also showed nonsignificant results, indicating homogeneity of covariance matrices across groups. Thus, all key assumptions of repeated measures analysis of covariance—including normality, sphericity, and homogeneity of variances—were satisfied, allowing for valid interpretation of the repeated measures ANOVA results.

**Table 2**

*Within-Subjects Analysis for Executive Functions*

| Source       | Sum of Squares | df  | Mean Square | F      | p    | Partial Eta Squared |
|--------------|----------------|-----|-------------|--------|------|---------------------|
| Time         | 236.672        | 2   | 118.336     | 49.466 | .001 | .465                |
| Time × Group | 115.026        | 4   | 28.757      | 12.021 | .001 | .297                |
| Error        | 272.719        | 114 | 2.392       | —      | —    | —                   |

According to Table 2, the calculated F value for executive functions was statistically significant. The significance of the F test for the assessment phase indicates that the assumption of equality among pretest, posttest, and follow-up conditions can be rejected. The significant interaction between time (pretest, posttest, and follow-up) and group membership (experimental vs. control) with  $F(4, 114) =$

$12.021$ ,  $p < .001$  demonstrates a significant difference across the three phases, suggesting that changes in executive function were meaningfully influenced by group membership.

To further explore between-group differences, the results of the between-subjects effects test are presented in Table 3.

**Table 3***Between-Group Significance Test for Executive Functions*

| Source    | Sum of Squares | df | Mean Square | F        | p    | Partial Eta Squared |
|-----------|----------------|----|-------------|----------|------|---------------------|
| Intercept | 3293.889       | 1  | 3293.889    | 1039.348 | .000 | .948                |
| Group     | 201.926        | 2  | 100.963     | 31.858   | .000 | .528                |
| Error     | 180.644        | 57 | 3.169       | —        | —    | —                   |

As shown in Table 3, the between-group analysis revealed a significant difference in executive function scores among the three groups (Imago therapy, schema therapy, and control), with a large effect size ( $\eta^2 = .528$ ). Thus, with 99% confidence, it can be concluded that there are statistically

significant differences in executive function among the groups. To determine the specific differences, pairwise comparisons were conducted, and the results are presented in Table 4.

**Table 4***Pairwise Comparisons of Experimental and Control Groups on Executive Functions*

| Time      | Variable            | Comparison                 | Mean Difference | SE   | Sig. (p) |
|-----------|---------------------|----------------------------|-----------------|------|----------|
| Pretest   | Executive functions | Imago vs. Schema therapy   | -0.05           | 0.56 | .930     |
|           |                     | Imago vs. Control          | -0.06           | 0.56 | .912     |
|           |                     | Schema therapy vs. Control | -0.01           | 0.56 | .982     |
| Posttest  | Executive functions | Imago vs. Schema therapy   | 1.51            | 0.47 | .002     |
|           |                     | Imago vs. Control          | 3.30            | 0.47 | .001     |
|           |                     | Schema therapy vs. Control | 1.79            | 0.47 | .001     |
| Follow-up | Executive functions | Imago vs. Schema therapy   | 1.49            | 0.50 | .001     |
|           |                     | Imago vs. Control          | 4.47            | 0.50 | .001     |
|           |                     | Schema therapy vs. Control | 2.99            | 0.50 | .001     |

According to Table 4, there were no significant differences among groups in executive function scores at the pretest stage. However, in both the posttest and follow-up stages, significant differences were found between the Imago therapy and schema therapy groups, as well as between each experimental group and the control group. The mean executive function scores for the Imago therapy group were significantly higher than those of the schema therapy

and control groups in the posttest and follow-up assessments.

Additionally, both experimental groups (Imago and schema therapy) demonstrated significantly higher executive function scores than the control group in posttest and follow-up phases, confirming the effectiveness of both interventions.

**Table 5***Pairwise Comparison of Pretest, Posttest, and Follow-up Phases in Experimental and Control Groups*

| Group          | Variable            | Comparison         | Mean Difference | SE    | Sig. (p) |
|----------------|---------------------|--------------------|-----------------|-------|----------|
| Imago          | Executive functions | Pretest–Posttest   | -3.462          | 0.663 | .001     |
|                |                     | Pretest–Follow-up  | -4.788          | 0.497 | .001     |
|                |                     | Posttest–Follow-up | -1.325          | 0.403 | .004     |
| Schema therapy | Executive functions | Pretest–Posttest   | -1.900          | 0.540 | .002     |
|                |                     | Pretest–Follow-up  | -3.250          | 0.667 | .001     |
|                |                     | Posttest–Follow-up | -1.350          | 0.636 | .047     |
| Control        | Executive functions | Pretest–Posttest   | -0.10           | 0.203 | .628     |
|                |                     | Pretest–Follow-up  | -0.25           | 0.306 | .424     |
|                |                     | Posttest–Follow-up | -0.15           | 0.169 | .385     |

As shown in Table 5, the mean differences between the pretest and posttest phases were significant at the  $p < .001$

level, indicating that the mean executive function scores in the experimental groups changed significantly from pretest

to posttest. Likewise, significant differences were observed between pretest and follow-up phases ( $p < .001$ ), confirming that improvements in executive function persisted over time in the experimental groups compared to the control group.

Accordingly, the findings support the hypothesis that there is a significant difference between the effectiveness of Imago therapy and schema therapy on executive functions among students with academic burnout. The mean executive function scores in the Imago therapy group were significantly higher than those in the schema therapy group at both posttest and follow-up stages. Thus, Imago therapy demonstrated greater effectiveness than schema therapy in enhancing executive functions. Consequently, the sixth research hypothesis was confirmed, indicating that Imago therapy is more effective than schema therapy in improving executive functions.

#### 4. Discussion and Conclusion

The results of the present study revealed that both Imago therapy and schema therapy produced significant improvements in executive functions among students suffering from academic burnout, with the Imago therapy group showing superior outcomes compared to the schema therapy group. This finding suggests that both interventions are effective in enhancing higher-order cognitive processes such as working memory, cognitive flexibility, and inhibitory control, but the relational and emotionally integrative nature of Imago therapy may offer more comprehensive benefits. Improvements in executive functions following psychological interventions align with the theoretical framework that emphasizes the interplay between emotional regulation, cognitive control, and psychological well-being. Burnout—characterized by chronic stress, emotional exhaustion, and cognitive depletion—often leads to impaired executive functioning, manifested in difficulties with attention regulation, problem-solving, and self-control (McCarthy et al., 2021). The observed gains in executive functioning suggest that both therapeutic modalities fostered neurocognitive recovery through mechanisms involving emotional awareness, self-reflection, and cognitive restructuring.

Schema therapy's positive impact on executive functioning can be attributed to its focus on identifying and modifying early maladaptive schemas that distort self-perception and cognitive processing (Renner et al., 2016). Through cognitive reappraisal and imagery rescripting, schema therapy helps individuals challenge automatic

negative thoughts and restructure dysfunctional belief systems, thereby improving cognitive flexibility and metacognitive awareness. Previous findings support that confronting maladaptive schemas leads to enhanced emotional stability and attentional control, which are critical components of executive functioning (Pascual et al., 2019). In the present study, participants who underwent schema therapy likely benefited from increased self-awareness and emotional regulation, leading to improved cognitive efficiency in academic contexts. The intervention's focus on developing "healthy adult" modes—characterized by rational thinking, self-compassion, and emotional balance—appears to have contributed to these cognitive improvements.

However, the superior effectiveness of Imago therapy in this study may be explained by its dual emphasis on emotional connection and cognitive integration. Unlike schema therapy, which primarily targets internal cognitive patterns, Imago therapy integrates relational, affective, and reflective dimensions that collectively enhance self-regulation and executive functioning (Bagheri et al., 2023; Ghadampour & Ahmadi, 2023). By engaging participants in structured dialogues emphasizing mirroring, validation, and empathy, Imago therapy cultivates emotional awareness and cognitive reflection simultaneously. This relational-emotional integration strengthens prefrontal-limbic coherence, improving cognitive control, emotional stability, and attentional flexibility—core domains of executive function (Schäfer et al., 2024). The group-based format of Imago therapy also likely amplified its effects by fostering social support, collective reflection, and emotional validation, all of which are known to buffer against burnout-induced cognitive impairments.

These results are consistent with recent studies showing that interventions enhancing emotional intelligence and interpersonal communication lead to measurable improvements in executive functioning and mental health outcomes (Balideh et al., 2025). Balideh et al. (2025) found that students with higher executive functioning and supportive school climates demonstrated greater academic well-being, suggesting that cognitive control and social-emotional resources jointly influence resilience against burnout. The current findings extend this evidence by highlighting how therapeutic interventions that strengthen both cognitive and relational capacities can mitigate the adverse effects of academic burnout. Furthermore, the results resonate with Yao et al. (2024), who reported that executive attention and metacognitive awareness play



crucial roles in predicting cognitive outcomes such as phonological and attentional performance (Yao et al., 2024). In this sense, Imago therapy's reflective dialogue structure may have facilitated metacognitive monitoring and attentional control, leading to greater cognitive flexibility and inhibitory precision.

The findings also align with McCarthy et al. (2021), who demonstrated that chronic stress and academic burnout significantly impair students' cognitive efficiency and self-regulation capacities (McCarthy et al., 2021). By reducing emotional reactivity and enhancing awareness of internal states, both Imago and schema therapies may counteract the neuropsychological consequences of stress, such as reduced working memory performance and impaired decision-making. Chang et al. (2020) similarly identified a strong correlation between burnout, stress, and depressive symptoms among students, emphasizing the role of coping resources in mitigating cognitive decline (Chang et al., 2020). These findings support the conclusion that interventions designed to foster self-awareness, empathy, and cognitive reframing can restore executive control mechanisms compromised by burnout.

From a neurocognitive standpoint, the observed effects can be interpreted through the interaction between emotional regulation and prefrontal executive systems. Prolonged exposure to academic stress disrupts prefrontal cortex functioning, leading to diminished executive control and increased emotional impulsivity (Santín et al., 2016). Both schema and Imago therapies, by enhancing reflective functioning and emotional regulation, may help restore prefrontal activation, improving attention, inhibition, and problem-solving capacity. Schäfer et al. (2024) emphasized that executive functions such as inhibition, working memory, and cognitive flexibility play an essential role in complex problem-solving and adaptive functioning (Schäfer et al., 2024). Therefore, the present findings underscore the therapeutic potential of interventions that enhance these cognitive skills through emotionally grounded and relationally attuned techniques.

Another explanation for the results lies in the emotional processing components inherent in both therapeutic models. Schema therapy employs cognitive restructuring and emotional awareness to transform maladaptive emotional responses, while Imago therapy employs empathy and emotional attunement to facilitate cognitive reorganization. This integrative engagement of affective and cognitive domains mirrors the findings of Dyrbye et al. (2017), who highlighted that emotional exhaustion, depression, and

anxiety are key mediators of academic burnout and can significantly impair cognitive functioning (Dyrbye et al., 2017). The current results suggest that addressing emotional dysregulation through therapy not only alleviates distress but also restores executive functioning, which is essential for academic engagement and mental resilience.

Moreover, these findings reinforce the notion that cognitive and emotional development are interdependent in academic settings. Pascual et al. (2019) demonstrated that executive functions are predictive of performance in both motor and academic domains, emphasizing that cognitive control processes are essential for adaptive learning behaviors (Pascual et al., 2019). The improvements observed in this study may thus represent a broader enhancement in cognitive adaptability, emotional insight, and academic functioning. Similarly, Santín et al. (2016) reported a positive correlation between physical activity, executive functions, and academic performance in adolescents, suggesting that integrative interventions targeting both emotion and cognition can yield far-reaching educational benefits (Santín et al., 2016).

The comparative advantage of Imago therapy may also be related to its unique focus on empathy as a mechanism of cognitive-emotional integration. By promoting mutual understanding and emotional resonance within a group context, Imago therapy encourages participants to regulate emotions and cognitions dynamically, reducing automatic reactivity and promoting flexible responses. Ghadampour and Ahmadi (2023) demonstrated that Imago therapy significantly reduced cognitive avoidance and increased self-awareness among students, indicating that its relational emphasis enhances reflective cognition and emotional regulation (Ghadampour & Ahmadi, 2023). Bagheri et al. (2023) further found that Imago therapy improved cognitive flexibility and emotional regulation, key predictors of executive functioning (Bagheri et al., 2023). These studies collectively explain why, in the present research, Imago therapy resulted in stronger and more sustained improvements in executive functions compared to schema therapy.

Schema therapy, despite being slightly less effective, remains a highly beneficial approach for addressing academic burnout. Its strength lies in its capacity to restructure enduring maladaptive cognitive frameworks that maintain self-defeating behaviors and emotional distress. Renner et al. (2016) reported the effectiveness of schema therapy in treating chronic emotional disorders such as depression by targeting early maladaptive schemas and

modifying core emotional patterns (Renner et al., 2016). The improvements in executive functioning observed in the schema therapy group of this study likely reflect enhanced cognitive control and emotional stability resulting from schema restructuring. Therefore, while Imago therapy's interpersonal emphasis may facilitate faster or broader cognitive gains, schema therapy's depth-oriented restructuring ensures long-term emotional integration and cognitive coherence.

The present findings also contribute to the growing recognition that interventions fostering empathy, self-awareness, and cognitive flexibility can significantly influence academic well-being. Balideh et al. (2025) emphasized that executive functions serve as predictors of academic well-being, mediating the relationship between school climate and student adjustment (Balideh et al., 2025). When students develop the ability to regulate attention, inhibit impulsive behaviors, and engage in perspective-taking, they are better equipped to manage stress and maintain motivation in demanding academic environments. The improvements observed after Imago and schema therapies thus reflect a broader enhancement of both cognitive and affective dimensions of student functioning.

Overall, the findings of this study underscore the close relationship between emotional regulation, executive functioning, and academic resilience. Both Imago and schema therapies appear to improve these interrelated domains, but Imago therapy's integration of empathy, reflection, and interpersonal connection renders it particularly effective in restoring cognitive efficiency among students experiencing burnout. The enhancement of executive functions following therapeutic intervention represents not only cognitive rehabilitation but also emotional empowerment, contributing to sustainable academic engagement and mental health.

## 5. Limitations & Suggestions

Despite the robustness of the findings, this study faced several limitations. The relatively small sample size limits the generalizability of the results to broader student populations. The participants were drawn from a single university context, which may not reflect the diversity of academic environments and cultural factors influencing burnout and cognitive performance. The use of self-report instruments, while practical, may have introduced response bias or inaccuracies in assessing emotional and cognitive changes. Additionally, the study's short follow-up period

restricts conclusions regarding the long-term stability of therapeutic effects. Future research using longitudinal designs, larger samples, and neurocognitive assessment tools would provide a more comprehensive understanding of the sustained impacts of these interventions.

Future studies should examine the neurobiological mechanisms underlying the observed cognitive improvements by incorporating neuroimaging or electrophysiological measures to identify neural correlates of therapy-induced changes. Comparative studies across different age groups, academic levels, and cultural settings could elucidate contextual moderators of treatment effectiveness. Researchers are also encouraged to explore the integration of Imago and schema therapy principles into hybrid models that combine cognitive restructuring with relational and emotional processing. Additionally, future investigations might evaluate the mediating roles of self-compassion, emotional intelligence, and resilience in linking therapeutic intervention to executive functioning improvements.

From a practical standpoint, the results suggest that university counseling centers and educational psychologists can incorporate Imago and schema therapy modules into student support programs to enhance cognitive flexibility and reduce burnout symptoms. Group-based Imago sessions, emphasizing empathy and reflective dialogue, may be particularly effective in fostering collaborative learning and emotional well-being. Schema therapy techniques can be adapted into psychoeducational workshops to help students identify and modify maladaptive beliefs related to performance and self-worth. Integrating these evidence-based approaches into academic environments can contribute to healthier, more self-aware, and cognitively resilient student populations.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

All authors equally contributed to this article.

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