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Through the lens of ADHD: Factors of academic attrition, rejection sensitivity and path to dropout intention

Vanessa Müller

PhD Dissertation

Supervisor:
Prof. Dr. Bettina Pikó, M.D, D.Sc.

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Acknowledgements

I didn't even know that my curiosity and endless question-asking wasn't just an annoying habit but a skill that could help communities move forward questions that haven't been answered yet. And without the help of many, probably I wouldn't ever have come to my good conscience.

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I dedicate this dissertation to all the students with ADHD symptoms who, though often overwhelmed and frequently misjudged, carry within them an incredible blend of chaos and brilliance. They're the ones never quite fitting into neat boxes.

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Abstract

Attention-Deficit/Hyperactivity Disorder (ADHD) has garnered significant attention in higher education due to its profound impact on academic performance and well-being among university students. ADHD is marked by persistent patterns of inattention, hyperactivity, and impulsivity, which can severely disrupt academic persistence, emotional regulation, and social relationships. In Hungary, these challenges are compounded not only by systemic barriers to obtaining formal diagnosis but also by a lack of tailored interventions in higher education. As a result, the struggles faced by students with ADHD symptoms are further intensified, leaving many without the support they need.

Given the aforementioned challenges, the goals of this dissertation are threefold: (1) to identify factors that predict the occurrence of ADHD symptoms in Hungarian university students, (2) to explore the relationship between these symptoms and dropout intention in this population, and (3) to discover the factors and strategies that support their interpersonal experiences and relationships.

This dissertation is structured into five chapters. Chapter 1 serves as a general introduction, while Chapter 5 provides the discussions and conclusions. The main body consists of three independent studies presented in Chapters 2 through 4, each exploring different aspects of the dissertation topic.

The first study (Chapter 2) aimed to identify potential differences between college students with and without symptoms of ADHD across multiple domains, including academic boredom, active and passive procrastination, problematic smartphone use, and depression. Additionally, we applied regression analysis to determine the most significant predictors of overall ADHD scores, as well as attention deficit and hyperactivity scores independently. The results revealed that students at risk for ADHD showed higher scores across all measured domains, except for active procrastination. A stepwise regression analysis identified passive procrastination, depression, and academic boredom as significant predictors of overall ADHD scores, with smartphone addiction and active procrastination (negatively) also contributing to attention deficit scores. Remarkably, hyperactivity was less predictable by these variables compared to attention deficit.

The second study (Chapter 3) investigated a path model to assess the relationship between ADHD symptoms and dropout intention. We examined the potential mediating effects of academic resilience and depression in this relationship. Additionally, given the potential for general self-efficacy to aid the negative consequences of ADHD, we explored

whether self-efficacy could moderate the impact of ADHD symptoms on dropout intention. The findings revealed that both depression and academic resilience partially mediate the link between ADHD symptoms and dropout intention. Specifically, students with ADHD symptoms tend to struggle with depressive symptoms and reduced academic resilience, which in turn contribute to an increased likelihood of dropping out intention. Self-efficacy, on the other hand, moderated the relationship between ADHD symptoms and dropout intention, meaning that students with higher self-efficacy were less likely to exhibit dropout intentions even when experiencing ADHD symptoms. Interestingly, while academic resilience was found to mediate the ADHD-dropout relationship, the expected protective effect of resilience on depression was not observed in this study, suggesting that both factors may independently affect student outcomes.

The third study (Chapter 4) focused on the association between ADHD symptoms and rejection sensitivity among college students. Specifically, we investigated whether constructs of mental well-being, including resilience, self-regulation, general well-being, creative/executive functioning and savoring mediate or moderate this relationship. To thoroughly investigate these connections, we conducted a path analysis, which enabled us to capture the interrelationships between these variables and their impact on the ADHD-rejection sensitivity link. The results showed a direct positive link between ADHD symptoms and rejection sensitivity (RS), with constructs such as well-being, creative and executive efficiency, self-regulation, and resilience partially explaining this connection. Savoring capacity emerged as a significant moderator, with lower levels of savoring intensifying the relationship between ADHD symptoms and RS.

Despite the dissertation's noteworthy findings, several limitations should be acknowledged. The cross-sectional design and reliance on self-reports may introduce bias, while the sample limits broader generalization. Most participants exhibited ADHD symptoms but lacked formal diagnoses, likely due to long waiting lists for assessments in Hungary. Future studies should replicate this research with diagnosed individuals and consider medication use for a fuller understanding. Longitudinal studies and objective behavioral measures would also deepen insights into the academic and emotional impact of ADHD on university students.

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LIST OF ACRONYMS

ADHD	Attention Deficit Hyperactivity Disorder
APA	American Psychological Association
ARS-30	Academic Resilience Scale-30
DSM-5	The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
RQ	Research Question
ADHD-C	Attention Deficit Hyperactivity Disorder Combined Type
ADHD-HI	Attention Deficit Hyperactivity Disorder Hyperactive-Impulsive Type
ASRS	Adult ADHD Self-Report Scale
BDI	Beck Depression Inventory
CBT	Cognitive Behavioral Therapy
CES-D	The Center for Epidemiologic Studies - Depression Scale
CFI	Comparative Fit Index
GSE	General Self-Efficacy Questionnaire
IRB	Institutional Review Board
MPMHT	Maintainable Positive Mental Health Theory
RMSEA	Root Mean Square Error of Approximation
RS	Rejection Sensitivity
SAS-SV	Smartphone Addiction Scale Short Version
SPSS	Statistical Package for Social Sciences
TLI	Tucker–Lewis index

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CHAPTER 1. General Introduction

1.1. Attention deficit hyperactivity disorder (ADHD)

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder (Simon et al., 2007), originating in childhood, with 40-80% of cases persisting into adolescence (Tandon et al., 2016) and approximately 50% continuing into adulthood (Caye et al., 2016). The prevalence among the general adult population is estimated to be 2.5-6.7% (Song et al., 2021), with a rate of 1.4% in Hungary (Bitter et al., 2010). ADHD manifests in difficulties with executive functions (e.g., time management, prioritization), emotional regulation, activity control, and maintaining focus (DSM-V; APA, 2013), leading to significant functional impairment across all age groups.

In terms of attention deficits, "daydreaming" and seeking environmental stimuli are common, particularly during monotonous tasks, either to make them more interesting or to avoid them altogether. Forgetfulness regarding appointments or the frequent loss of personal items (e.g., books, wallets, keys) are attributed to weaknesses in working memory. Difficulty organizing daily tasks and omitting certain subtasks are also part of the symptom complex (Félegyházy & Gonda, 2015). In the realm of hyperactivity, internal restlessness may manifest, leading individuals to talk excessively, struggle with relaxation, and chronically overcommit themselves (Pulay, 2018). Impulsivity encompasses both cognitive and social aspects in adults: interpersonal conflicts, frequent job changes, and a disorganized cognitive style are common among those with ADHD (Millstein et al., 1997; Somogyi et al., 2015). The intersection of impulsivity and emotional dysregulation can result in heightened sensitivity to criticism (leading to a quick loss of motivation), frequent mood swings, and impulsive, ill-considered decisions (in career and relationships) (Pulay, 2018).

The diagnosis of ADHD is based on the DSM-5 criteria, which classifies ADHD as a neurodevelopmental disorder (American Psychiatric Association, 2013). For a definitive diagnosis, there must be a persistent pattern of inattention and/or hyperactivity-impulsivity for at least 6 months. Additionally, the following criteria must be met:

- Several inattentive or hyperactive-impulsive symptoms were present before the age of 12,
- Several inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g., at home, school, or work; with friends or relatives; in other activities),

- There is clear evidence that the symptoms interfere with or reduce the quality of social, academic, or occupational functioning,
- The symptoms do not occur exclusively during schizophrenia or another psychotic disorder and are not better explained by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, personality disorder, substance intoxication or withdrawal).

The DSM-5 examines inattentive and hyperactive-impulsive symptoms separately, dividing them into two subcategories. In both categories, for a diagnosis of ADHD, 6 or more criteria must be present in children, and 5 or more in adults, for at least 6 months. Based on the proportion of inattentive and hyperactive-impulsive symptoms present, ADHD can be classified into 3 subtypes: the combined presentation, where both inattention and hyperactivity-impulsivity criteria are met; the predominantly inattentive presentation, where only the inattention criteria are met; and the predominantly hyperactive/impulsive presentation, where only the hyperactivity-impulsivity criteria are met. Furthermore, based on the functional impairment caused by the symptoms, cases can be classified as mild, moderate, or severe (APA, 2013). In the treatment of individuals with ADHD, both dopamine and norepinephrine reuptake inhibitors have been proven effective. Additionally, medications targeting the nicotinic cholinergic system, though less prominently, also show improvement in symptoms. This suggests that these three systems are disrupted in ADHD (Charney & Nestler, 2017).

1.2. The etiology of ADHD

The causes of ADHD are currently difficult to pinpoint, as it lacks a unified etiology and symptomatology. The exact pathogenesis of ADHD has not yet been fully clarified, but existing research suggests that, like most psychiatric disorders, it is a heterogeneous and multifactorial condition in terms of etiology (Charney & Nestler, 2017). Both genetically predisposed and environmental factors play a role in its development, but the specific mechanisms by which they contribute to the manifest disorder are still under investigation. However, its genetic heritability is remarkably high (between 70-80%), observable in all genders and across all age groups. In terms of familial clustering, if one parent is affected, their children have a 25-50% chance of also being affected, and more than half of parents with ADHD have at least one child with ADHD (Weiss et al., 2000).

Most of the literature emphasizes the role of psychosocial and environmental factors in either amplifying or mitigating existing genetic and neurobiological factors (Écsi, 2018). Risk

factors can include maternal alcohol consumption during pregnancy, smoking, low birth weight, and prenatal stress. Additionally, abuse, emotional trauma, paternal criminality, maternal mental disorders (lack of a safe family environment), and sexual abuse can also be contributing factors (Guney et al., 2015).

Evolutionary psychopathology explains the development of the disorder through the *mismatch theory*, suggesting that the traits associated with ADHD may have been helpful 30-60 thousand years ago in the struggle for scarce resources and species survival (Morgan, 1982). The *response-readiness theory* examined heightened vigilance (scattered attention), proposing that rapid response (impulsivity) and exploratory behavior (hyperactivity) could have been beneficial in the face of external threats, rapid changes, and difficult-to-obtain food sources (Jensen et al., 1997). The *group-selection theory* reinforces this line of thought, suggesting that novelty-seeking and hyperactivity may have benefited the group in finding new, more habitable areas. The response theory also suggests that risk-taking, flexible strategy switching, and rapid detection of environmental changes are reminiscent of the characteristics of prehistoric hunters (Hartmann, 1993).

The symptoms of ADHD can still be advantageous in certain professions in modern times (e.g., firefighting, police), but since the industrial revolution, sustained attention, task focus, and linear thinking have become the expected qualities in both the workplace and academic environments (Miklósi et al., 2020).

1.3. Students with ADHD symptoms in the higher education

The literature estimates the prevalence of ADHD among university students to be 15.9% (Mak et al., 2021). However, reaching this conclusion has been a long journey for the scientific community. The delayed focus of this research can be attributed to the fact that the disorder was long considered limited to childhood and, therefore, often overlooked in adulthood (Bitter et al., 2010). This is understandable, as symptoms often appear before the age of 12 but frequently only cause dysfunction in young adulthood (Simon et al., 2007); the literature identified this phenomenon as “late-onset” ADHD (Riglin, 2022). In many cases, affected adults enter the healthcare system due to the development of comorbid conditions (Félegyházy & Gonda, 2015).

In recent years, there has been growing attention to the study of affected students in higher education. This is due partly to the rapid increase in the number of students with ADHD reported by higher education institutions (DuPaul et al., 2021), and partly because, despite existing challenges, those admitted to higher education can be considered highly

resilient individuals within the population (Frazier et al., 2007). The available literature predominantly focuses on academic functions (following the medical perspective), with research on psychosocial aspects representing only a small fraction of publications. Longitudinal studies, spanning from school age to adulthood, indicate that students with ADHD experience grade repetition more often, have significantly lower grades, and perform worse in university aptitude assessments compared to their non-affected peers (DuPaul et al., 2021).

These results are not necessarily straightforward consequences, as students with ADHD often have exceptional intelligence (Cornoldi et al., 2013). Some research even considers the symptom complex as a "mimic" of intelligence, which can be associated with exceptional talent (Lee & Olenchak, 2015). The interpretation of underachievement is further complicated by findings that high energy levels, hyperfocus on tasks, and creativity are also present among the characteristics of students with ADHD (Mahdi et al., 2017). The divergent, "outside-the-box" thinking resulting from cognitive dynamism can also be an advantage in students' higher education careers (Sedwick et al., 2019). Nevertheless, affected students remain a highly vulnerable group for academic dropout within higher education institutions.

1.4. Statement of the Problem

Research on adult ADHD within Hungary, particularly among the university-aged young adult population, is extremely limited. Furthermore, targeted interventions to support these students are also lacking. Based on the United Nations Convention on the Rights of Persons with Disabilities (CRPD; 2006), individuals affected can access higher education on an equal basis with others, free from discrimination. The Hungarian Parliament recognized this as a state commitment with Act XCII of 2007, acknowledging its binding nature in Hungary as well. The concept of “reasonable accommodation” was introduced, requiring institutions to consider the needs of persons with disabilities. The mandatory accommodations for students are regulated by Government Decree 87/2015 (IV.9.) on the implementation of certain provisions of Act CCIV of 2011 on National Higher Education. This decree includes measures for students with ADHD, such as minimizing wait times during exams, providing breaks for longer exams without leaving the room, breaking down complex questions into subcomponents, and offering exam materials and lecture content in audio or digital formats. These measures are not intended to overlap with the responsibility for ADHD treatment but rather address a range of academic challenges, including time management and learning strategies. While the legal provisions designate academic support as a university

responsibility, some Hungarian institutions are already exceeding these basic requirements. Flexible study arrangements, learning counseling, relaxation techniques, and professional and life counseling are emerging (Müller, 2020). Compared to international standards, Hungary's regulatory obligations reflect minimum and practical expectations (Barakonyi, 2019), with institutions navigating the expansion of services without specific guidance.

Despite facing numerous challenges, students with ADHD symptoms have overcome obstacles within the educational system, demonstrating great levels of resilience (Frazier et al., 2007). However, they remain vulnerable to comorbid disorders (e.g., behavioral addictions, depression) and academic dropout (Ginsberg et al., 2014; Kooji et al., 2010). Once enrolled in college or university, students with ADHD symptoms often face a higher risk of academic challenges. Research indicates they tend to complete fewer years of education than their peers (DuPaul et al., 2021; Nugent & Smart, 2014) and are more likely to drop out (DuPaul et al., 2021; Hechtman et al., 2016). Impaired attention has been identified as a key factor contributing to withdrawal from postsecondary education (Henning et al., 2022). While the precise mechanisms remain unclear, students with ADHD frequently grapple with executive function deficits, leading to difficulties with focus, following instructions, information processing, procrastination, task switching, problem-solving, and organization (Dvorsky & Langberg, 2019). These challenges can hinder their ability to complete assignments, perform well on exams, and meet academic expectations.

Furthermore, self-regulation difficulties are common among students with ADHD, affecting classroom behavior, motivation, perseverance during challenging tasks, and time management (Granziera et al., 2023). These struggles (e.g. rejection sensitivity) can strain peer relationships and interactions with professors, indirectly contributing to academic attrition. Recognizing ADHD is critical, as these students often experience lower psychosocial status than their non-symptomatic peers (Green & Rabiner, 2012). However, with ADHD screening waitlists in Hungary currently spanning 2-3 years, many individuals are either still awaiting assessment or remain undiagnosed (Kilencz et al., 2024). Overall, the vulnerabilities associated with ADHD can negatively impact students' quality of life, mental health, and academic performance (Arnold et al., 2020).

1.5. The present dissertation

Given the lack of research on university students with ADHD symptoms in Hungary, we aimed to explore a wide range of domains to gain a comprehensive understanding of their everyday experiences. Therefore, this dissertation research addresses the literature gaps

through three related studies. Our investigation focused on (1) identifying factors that predict the occurrence of ADHD symptoms in Hungarian university students, (2) explored the relationship between these symptoms and dropout intention in this population, and (3) identified the factors and strategies that support their interpersonal experiences and relationships. Accordingly, the primary research questions (RQ) of this dissertation are outlined below. RQ1 and RQ2 are addressed in Chapter 2, Study 1; RQ3, RQ4 and RQ5 are examined in Chapter 3, Study 2; RQ6, RQ7 and RQ8 are investigated in Chapter 4, Study 3.

- *RQ1:* Do students with and without ADHD symptoms differ in levels of academic boredom, active/passive procrastination, smartphone addiction, and depression?
- *RQ2:* To what extent do active/passive procrastination, academic boredom, smartphone addiction and depression predict ADHD symptoms among university students?
- *RQ3:* Does academic resilience mediate the relationship between ADHD symptoms and depression among university students?
- *RQ4:* How do ADHD symptoms, academic resilience, and depression collectively predict dropout intention among Hungarian university students?
- *RQ5:* Does self-efficacy moderate or mediate the association between ADHD symptoms and dropout intention, thereby potentially reducing dropout risks for students with ADHD symptoms?
- *RQ6:* Can rejection sensitivity in students with ADHD symptoms be explained within the framework of the Maintainable Positive Mental Health Theory?
- *RQ7:* Are resilience, self-regulation, creative efficiency, and well-being significant mediators in the relationship between ADHD symptoms and rejection sensitivity among college students?
- *RQ8:* Does savoring capacity moderate the relationship between ADHD symptoms and rejection sensitivity, with higher savoring capacity potentially reducing rejection sensitivity?

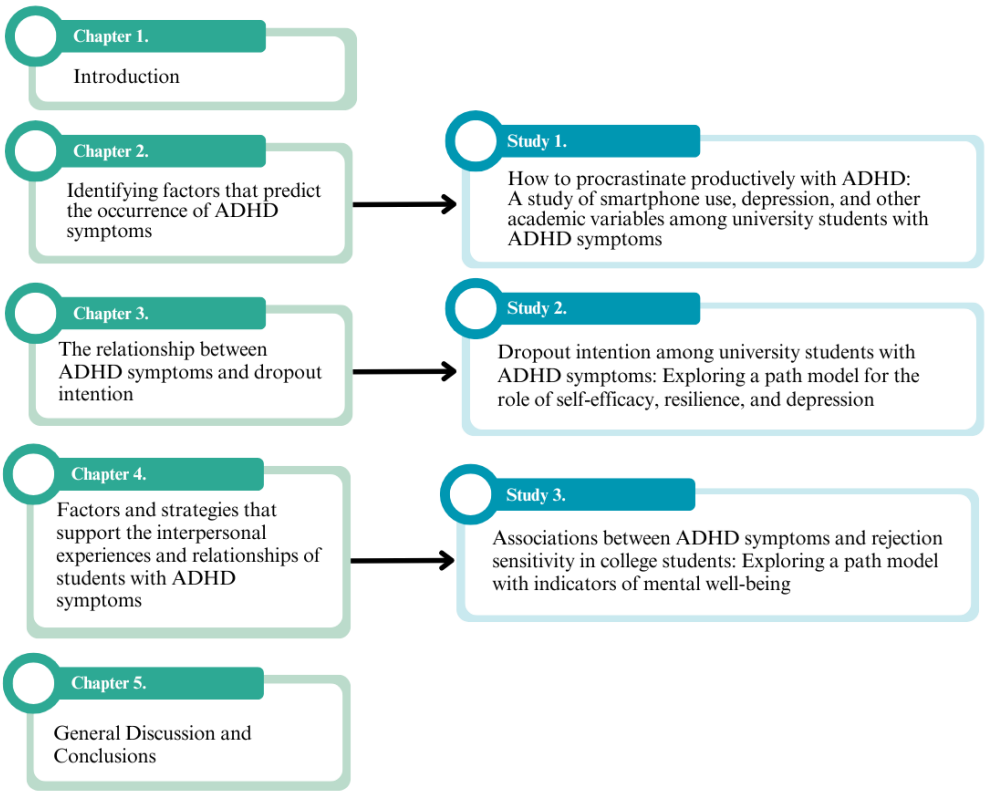
1.6. Structure of the Dissertation

This dissertation is structured into five chapters, aligned with the research aims and questions. Chapter 1 serves as a general introduction, while Chapter 5 provides the discussions and conclusions. Guided by the principles of a study-based—or multistudy—thesis, this dissertation is structured to weave together a series of interconnected studies. The main body consists of three independent studies presented in Chapters 2 through 4, each exploring different aspects of the dissertation topic (see Figure 1). All three articles included in this dissertation were supervised by Prof. Dr. Bettina Pikó, who also served as a co-author.

She contributed through supervision, securing funding, and providing guidance on revisions and editing.

Figure 1

The Structure of the Dissertation



As previously noted, Chapter 1 serves as the general introduction of this dissertation. It covers the primary constructs examined in all studies and their significance (Section 1.1-1.3), the research context of this study (Section 1.4), an overview and the research aims of the dissertation (Section 1.5), and an outline of the dissertation's structure (Section 1.6).

The first study (Chapter 2) aimed to identify potential differences between college students with and without symptoms of ADHD across multiple domains, including academic boredom, active and passive procrastination, smartphone addiction, and depression. Furthermore, we sought to determine the most significant predictors of overall ADHD scores, as well as attention deficit and hyperactivity scores independently. This study has been published as a paper in the *Journal of Attention Disorders* entitled “How to procrastinate productively with ADHD: A study of smartphone use, depression, and other academic variables among university students with ADHD symptoms” (Müller et al., 2023).

The second study (Chapter 3) investigated a path model to assess the relationship between ADHD symptoms and dropout intention. We examined the potential mediating

effects of academic resilience and depression in this relationship. Additionally, given the potential for general self-efficacy to aid the negative consequences of ADHD, we explored whether self-efficacy could moderate the impact of ADHD symptoms on dropout intention. This study has been published as a paper in the journal *Education Sciences* entitled "Dropout intention among university students with ADHD symptoms: Exploring a path model for the role of self-efficacy, resilience, and depression" (Müller et al., 2024a).

The third study (Chapter 4) focused on the association between ADHD symptoms and rejection sensitivity among college students. Specifically, we investigated whether constructs of mental well-being, including resilience, self-regulation, general well-being, creative/executive functioning and savoring mediate or moderate this relationship. This study has been published as a paper in the journal *Learning Disabilities Research & Practice* entitled "Associations between ADHD symptoms and rejection sensitivity in college students: Exploring a path model with indicators of mental well-being" (Müller et al., 2024b).

Chapter 5 is the final section of the main body of this dissertation. It will provide a general discussion and conclusion, synthesizing the findings from all three studies. This chapter will also address the overall limitations, suggest future research directions, and discuss the theoretical and practical implications of the results.

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CHAPTER 2. STUDY 1.

How to procrastinate productively with ADHD: A study of smartphone use, depression, and other academic variables among university students with ADHD symptoms

Abstract

Objective: The association between chemical dependency and Attention-Deficit Hyperactivity Disorder is widely recognized, but there is less data regarding modern behavioral addictions among young adults.

Method: In this cross-sectional study, a sample of 408 Hungarian college students (67.2% female, mean age 23.37 years [*SD* = 3.87]) responded to an online survey including the Adult ADHD Self-Report Scale, the Center for Epidemiologic Studies-Depression Scale (CES-D), the Procrastination Scale, the Short College Boredom Scale, and the Smartphone Addiction Scale (SAS-SV).

Results: Regression analyses showed that passive procrastination (ß = .31, $p < .001$), depression (ß = .20, $p < .001$), academic boredom (ß = .18, $p < .001$), active procrastination (ß = -.12, $p < .001$), and smartphone addiction (ß = .13, $p < .001$) were significantly related to ADHD symptoms, accounting for 41% of the variance.

Conclusion: Findings provide important additions to knowledge of mental health challenges among young adults with ADHD.

Keywords: ADHD; procrastination; smartphone addiction; university students.

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2.1. Introduction

Enrollment in university often poses many challenges to students as for example, they experience decreasing adult supervision and altered family structures. Such changes are especially challenging for students with ADHD (Kaiser et al., 2022; Sedgwick-Müller et al., 2022), and research to better understand characteristics of ADHD in this population and how the transition to university might impact these students should be a priority. While a growing number of studies are focused on this area, there is extremely limited data about Hungarian university students' situation.

The American Psychiatric Association (2013) describes ADHD as a neurodevelopmental disorder characterized by difficulties in concentrating, attending to information, restlessness, hyperactivity, and impulse control (or the combination of these characteristics). It is a major neuropsychiatric disorder in childhood (Simon et al., 2007), with 40-80% symptoms persisting into adolescence (Tandon et al., 2016) and approximately 50% into adulthood (Caye et al., 2016). The current DSM-5 criteria include childhood onset as a diagnostic criterion, but recent literature also proposes the possibility of late-onset (Riglin et al., 2022). It is a widespread disorder with multinational population-based studies indicating substantial prevalence rates among children under 18 years of age (Polanczyk et al., 2007) and adults (Fayyad et al., 2017). Mak et al. (2022) reported that 15.9% of university students across 9 countries screened positive for ADHD. Recognition of the disorder may be crucial as students with ADHD have a significantly lower psychosocial status than their non-symptomatic peers (Green & Rabiner, 2012) and an increased risk for addictive behaviors (Binder et al., 2009). Further, vulnerabilities associated with ADHD can have a negative impact on students' quality of life, mental health, and academic performance (Arnold et al., 2020). At the tertiary education level, an important question in this population is how aspects of university life, digital device use, and mental health problems may be related to ADHD symptoms. Therefore, we aimed to investigate these associations in a sample of Hungarian university students with ADHD symptoms. As mentioned above, this is a yet to be explored field of research in Hungary.

2.1.1. The relationship between boredom, depression, smartphone, and ADHD

There are a number of challenging situations in university students' life which can impede both their academic progress and mental health. Some of these may be particularly relevant for youth with ADHD. Inadequate environmental stimuli and prolonged exposure to monotonous stimuli may result in higher levels of academic boredom among students with

ADHD which can undermine their academic success (Castens & Overbey, 2009). High boredom-prone individuals tend to perform poorly on measures of sustained attention and they often show higher levels of symptoms of ADHD and depression (Malkovsky et al., 2012). Psychiatric comorbidity is well documented in every lifestage of ADHD individuals, above all mood disorders (Ohnishi et al., 2019). Depression has been described as a mediator between ADHD symptoms and poor academic performance (Riboldi et al., 2022). To being at elevated risk of depression (Kaiser et al., 2022), students with ADHD are more likely to develop alcohol and drug dependence (Baker et al., 2012) as well as behavioral addictions (Karaca et al., 2017). The association between chemical dependence and ADHD symptoms is widely recognized, but there is less data regarding modern behavioral addictions. Students living with ADHD might be considered a high-risk group for smartphone addiction (Kim, 2018) due to their reactiveness to instant rewards and stimulation (Kocyigit et al., 2021).

Modern digital devices and social media platforms in particular offer many positive opportunities but also pose risks to mental health. As a technology-oriented group, university students regularly use smart devices (White et al., 2010). However, in an “always-on” culture (Kuss & Griffiths, 2017), it may be necessary to separate the frequent use of devices from a behavioral addiction. Problematic smartphone use can be characterized as the overuse of a device, which has negative consequences for everyday life and needs to be controlled by the user. The initial excitement and pleasure can be replaced by a form of problematic behavior considered unhealthy for the self and his/her environment (Park et al., 2012). Smartphone addiction can serve as a coping mechanism against stress, depressive symptoms, or other mental health problems for students during their academic years (Ahmed et al., 2022, Kim et al., 2015; Matar Boumosleh & Jaalouk, 2017). In addition, excessive smartphone use can also be associated with another academic challenge, that is, a higher level of academic procrastination (Liu et al., 2022).

2.1.2. The relationship between academic procrastination and ADHD

Solomon and Rothblum (1984) described procrastination as a tendency to postpone a task until an inconvenient time, while according to Lay's (1995) it is a tendency to postpone starting and completing tasks and can be characterized as a general personality trait. The historical perspective considered the concept of passive procrastination to be a phenomenon of consciously chosen delay and rational abstention (DeSimone, 1993). Social, technological, and economic change gave the concept a negative connotation. The phenomenon of procrastination is associated with notions of unreasonable delay and dysfunctional behavior

and action (Ellis & Knaus, 1977; Silver & Sabini, 1981), closely associated with adverse consequences and outcomes. It is also reported as a problem related to self-regulation (Tice & Bratslavsky, 2000; Van Eerde & Klingsieck, 2018), a symptom of ADHD and research suggests that procrastination among college students may be linked to ADHD symptoms (Bodalski et al., 2022).

Previous studies on the relationship between ADHD and procrastination have used a one-dimensional (passive) approach to procrastination. However, Choi and Moran (2009) have created a multidimensional construct of procrastination: the phenomenon of active procrastination appeared alongside the passive concept. While passive procrastination is based on negative feelings related to the task, active procrastination can be viewed as a conscious decision to achieve optimal performance. This latter behavior may be sign of a time pressure preference, conscious decision-making, capacity to meet deadlines, and the ability to achieve satisfactory outcomes (Howell & Watson, 2007). A positive relationship can be assumed between creativity, well-being (Ismail, 2016), self-efficacy, and active procrastination (Schraw et al., 2007). The concept of active procrastination has been surrounded with doubt in the scientific community whether it is a real procrastination or an indicator of time management (Van Eerde, 2003). Nevertheless, stepping away from a dysfunctional approach and focusing on its adaptive side can lead to new perspectives on understanding the academic life of university students with ADHD.

2.2. Present Study

The aim of this study was twofold. First, we aimed to investigate potential differences between college students with and without symptoms of ADHD, across academic boredom, active and passive procrastination, smartphone addiction, and depression. We hypothesized that students with ADHD symptoms would score higher scales measuring these constructs. Second, in multivariate analyses (namely, stepwise linear regression analyses) we aimed to detect the most relevant correlates of ADHD overall scores as well as of attention deficit and hyperactivity scores separately.

2.3. Method

2.3.1. Study Design and Sample

A cross-sectional study was conducted among Hungarian university students from November 2021 to January 2022. Data were collected by a self-administered online questionnaire using the Typeform platform. The participants were between 18 and 35 (M =

23.37, SD = 3.87) years studying at a Hungarian higher education institution. A total of 408 participants took part in the study, 274 female (67.2%) and 134 male (32.8%), 322 (78.9%) full-time students, 83 (20.3%) part-time students, and three distance learners (0.7 percent). By level of education, 313 students (76.7%) were enrolled in a bachelor's degree, 55 in a master's degree (13.5%), 29 in an undivided master's degree program (7.1 percent), and 11 in doctoral studies (2.7 percent). The Doctoral School of Education, University of Szeged Institutional Review Board (IRB), approved the research and study procedures. After providing informed consent, the participants answered questions regarding basic demographic information and then completed the survey questionnaires. All participants responded to all items on the relevant scales; no data were missing. The study materials were administered in Hungarian.

2.3.2. Measures

ADHD. ADHD symptoms were screened using the World Health Organization's (WHO) Adult ADHD Self-Report Scale (ASRS-v.1.1) which contains 18 items and can be completed in a self-reported manner (Kessler et al., 2005). The participants responded to the statements on a five-point scale based on their experienced frequency ranging from 1 (*never*) to 5 (*very often*). Nine questionnaire items focused on hyperactive/impulsive symptoms (e.g., "How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?"), while nine examined attention deficit symptoms (e.g., "When you have a task that requires a lot of thought, how often do you avoid or delay getting started?"). The first six items of the ASRS can be considered a screening test. A total score above 12 points indicates a risk of ADHD (Farcas et al., 2018); this criterion was also used in our present study. In the current study, Cronbach's $\alpha = .87$.

Depression. The Center for Epidemiologic Studies - Depression Scale (CES-D; Radloff, 1977) was used to measure depression. The CES-D assesses the affective and somatic components of depressive symptoms. The questionnaire contains 20 items (e.g., "I was bothered by things that usually don't bother me.") which are responded to on a four-point scale ranging from 0 (*rarely or never*) to 3 (*very often or always*). Total scores can vary between 0 and 60 points with higher scores indicating more severe depressive symptoms. Based on Vilagut et al. (2016), a sensitivity of 83% and specificity of 78% can be estimated with a cutoff of 20 points - we also used this in our research. The Cronbach's $\alpha = .90$ in the present study.

Procrastination. The Hungarian 8-item version of the Procrastination Scale was used to measure active and passive procrastination (Jagodics et al., 2019). The questionnaire is the

shortened validated version of the original Active-Passive Procrastination Questionnaire (Choi & Moran, 2009). Four questionnaire items are suitable for measuring traditional passive (e.g., "Even after I make a decision I delay acting upon it.") and four assess active procrastination (e.g., "I finish most of my assignments right before deadlines because I choose to do so."). Participants answered the questionnaire items on a seven-point Likert scale ranging from 1 (*not typical at all*) to 7 (*totally typical*). Scores for each four-item subscale can be calculated from average item responses. Higher scores indicate the behavior of procrastination. Cronbach-α value = .71 in the present current study.

Academic boredom. The 20-item Short College Boredom Scale (Pekrun et al., 2010) was used to measure academic boredom. Eleven items measure boredom during class, and nine measure boredom while studying. Respondents indicate how much they agree with the given statements using a Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). The questionnaire results can be obtained by calculating the average points of the two subscales; a higher value indicates a higher degree of boredom. In the current research we did not use the subscales separately. Cronbach-α value = .89.

Smartphone addiction. To measure problematic smartphone use, we administered the 10-item Smartphone Addiction Scale Short Version (SAS-SV) (Kwon et al., 2013). The participants answered (e.g., "My life would be empty without my smartphone") on a five-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). Total score could vary between 5 and 50, with higher scores indicating problematic smartphone use. In the current study Cronbach-α = .87.

2.4. Results

Participants were divided into two groups based on their ASRS scores. Group without ADHD symptoms (n = 215) included those with ASRS scores below the cutoff, while Group with ADHD symptoms (n = 193) included those with ASRS scores above the cutoff. As demonstrated in Table 1, results indicated significant group differences.

As to be expected, individuals with symptoms of ADHD reported significantly higher levels of attention deficit ($p<.001$) and hyperactivity symptoms ($p<.001$) than their counterparts. They also scored significantly higher on academic boredom ($p<.001$) and passive procrastination ($p<.001$), but significantly lower on active procrastination ($p<.001$) scales. Among the psychological variables, smartphone addiction ($p<.001$) and depression ($p<.001$) scores were higher for the group with ADHD symptoms.

Table 1

Means, Standard Deviation, and Independent Sample T Test Analyses of Variance for Study Variables (students with ADHD symptoms (n = 215) *and without ADHD symptoms* (n = 193)

Variable	Group with ADHD symptoms		Group without ADHD symptoms		*t*(406)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Academic variables							
Academic boredom	33.93	7.67	27.71	7.66	8.17	<.001**	0.81
Passive procrastination	20.44	5.67	14.42	6.86	9.58	<.001**	0.96
Active procrastination	13.80	6.32	17.29	6.54	-5.47	<.001**	-0.54
Psychological variables							
Smartphone addiction	23.91	7.59	18.19	6.82	7.96	<.001**	0.79
Depression	28.98	12.34	19.11	11.43	8.34	<.001**	0.83
ADHD symptoms							
Attention deficit	9.82	2.60	4.48	2.24	22.25	<.001**	2.19
Hyperactivity	5.81	1.60	3.42	1.91	13.61	<.001**	1.36

Note. * $p < .05$. ** $p < .001$

Table 2 shows the results for multiple linear regression analysis of overall ADHD scores using the stepwise method.

Table 2

Linear Regression Results for overall ADHD scores (ASRS) (stepwise method)

Variable	ß	SE	95% CI		*p*
			LL	*UL*	
Passive procrastination	.31	0.03	0.15	0.28	<.001**
Depression	.20	0.02	0.05	0.11	<.001**
Academic boredom	.18	0.03	0.08	0.26	<.001**
Active procrastination	-.12	0.03	-0.14	-0.02	.002*
Smartphone addiction	.13	0.03	0.02	0.13	.004*

Note. * $p < .05$. ** $p < .001$; F (5,402) = 63.235, MSE = 767.753, $p < .001$. $R_{adj}^2 = .41$

Based on the value of the Durbin-Watson test (d = 1.59), the data met the assumption of independent errors. Among the academic variables, passive and active procrastination and

academic boredom proved to be significant predictors. Depression and smartphone addiction also contribute significantly to the regression model. The explained variance is 41%.

Table 3

Linear Regression Results for Attention Deficit Scores (stepwise method)

Variable	ß	SE	95% CI		*p*
			LL	*UL*	
Passive procrastination	.35	0.02	0.14	0.23	<.001**
Depression	.18	0.01	0.03	0.07	<.001**
Smartphone addiction	.16	0.02	0.03	0.11	<.001**
Active procrastination	-.16	0.02	-0.12	-0.04	<.001**
Academic boredom	.15	0.02	0.05	0.17	<.001**

Note. * $p < .05$. ** $p < .001$; F (5, 402) = 67.40, MSE = 484.37. $p < .001$. $R_{adj}^2 = .46$

In the stepwise regression analysis for attention deficit scores, passive procrastination, depression, smartphone addiction, active procrastination, and academic boredom contributed the most to the variance. Based on the value of the Durbin-Watson test (d = 1.53), the data met the assumption of independent errors. The explained variance is 46%. The model is shown in Table 3.

As demonstrated in Table 4, the result for the stepwise regression analysis showed that academic boredom, depression, and passive procrastination contributed the most to the variance of the hyperactivity symptoms score. The data met the assumption of independent errors based on the value of the Durbin-Watson test (d = 1.66). The explained variance is 10%.

Table 4

Linear Regression Results for Hyperactivity Scores (stepwise method)

Variable	ß	SE	95% CI		*p*
			LL	*UL*	
Academic boredom	.17	0.01	0.02	0.07	.002*
Depression	.14	0.01	0.04	0.08	.004*
Passive procrastination	.11	0.02	0.01	0.02	.038*

Note. * $p < .05$. ** $p < .001$; F (3, 404) = 15.02, MSE = 61.17, $p < .001$. $R_{adj}^2 = .10$

2.5. Discussion

Academic life has many challenges for students and particularly those with ADHD; therefore, we aimed to explore two groups of college students, based on their ADHD scores, across the domains of depression, academic boredom, procrastination, and smartphone addiction. Results demonstrated that students at risk for attention deficit hyperactivity disorder (group with ADHD symptoms) showed higher scores on all scales involved, except for active procrastination. Next, we aimed to determine the most relevant correlates of ADHD symptoms (overall score and those for the subscales) using stepwise multiple regression analysis. While passive procrastination, depression, and academic boredom were universal predictors in each case, smartphone addiction and active procrastination (with negative sign) only contributed to the overall ADHD scores and Attention Deficit scores but not to Hyperactivity scores. In addition, it seems, these variables could much less predict hyperactivity than attention deficit.

Consistent with extant literature (Rabiner et al., 2008; Riglin et al., 2021), the group with ADHD symptoms reported higher levels of depression. Psychiatric comorbidity with ADHD is well documented (Ohnishi et al., 2019). Although we know more about this comorbidity in children, our understanding of this phenomenon in adults is limited since most studies have been based on only clinical episodes. Besides specific life events, academic stress and failures might play important roles in elevating the risk of depressive symptoms in university students. Not surprisingly, depression has been found to be related to ADHD symptoms and poor academic performance (Riboldi et al., 2022).

Likewise, the level of academic boredom was significantly higher in the group with ADHD symptoms. Previous findings also revealed a strong relationship between boredom and ADHD, but not in the academic setting (Malkovsky et al., 2012). Inattention and impulsivity share common characteristics with boredom, but the determination if boredom is a core symptom of ADHD or it is a consequence of the disorder still awaits resolution (Malkovksy et al., 2012). According to previous studies, boredom can significantly predict poor academic achievement among students with ADHD (Castens & Overbey, 2009). Nevertheless, it has been suggested that positive classroom experiences may be related to academic success for students with ADHD (Caroll et al., 2022). The current results also indicate that this population is in need of research-based, interactive methods during their study process to reduce their emerging boredom and improve learning outcomes.

Consistent with extant literature (Kocyigit et al., 2021) our results indicated that students with ADHD obtained higher scores on the smartphone addiction scale. In addition,

this variable was a significant predictor of attention deficit but not hyperactivity. Prior findings also indicated that increased smartphone addiction risk was associated with ADHD, especially with the symptoms of inattention (Panagiotidi & Overton, 2022). The significant difference between the two groups (with and without ADHD symptoms) can be explained by several factors. Besides the sensation-seeking personality (Pironti et al., 2016), and impulsivity (Pironti et al., 2016), the vulnerability of this population towards problematic use may be explained by loneliness (Kim, 2018). Loneliness shows a higher presence in the lives of adults living with ADHD compared to the average population (Stickley et al., 2017). Thus, deprivation from social interactions may be one of the causes of problematic smartphone use. The excessive use may be also interpreted as a maladaptive coping strategy (Rozgonjuk et al., 2018), a lack of academic self-efficacy (Li et al., 2020), or avoidance during cognitively stressful work (Davis, 2002).

The most powerful contribution of our study is the separation of procrastination into both active and passive procrastination. To our best knowledge, this is the first study investigating the relationship between procrastination and ADHD symptoms using this multidimensional approach. Some prior studies linked ADHD symptoms with more frequent procrastination among college students and it can be described as a trademark symptom of ADHD. Procrastination may be accounted for by poor emotional regulation skills and low self-esteem (Bodalski et al., 2022), or underlying deficits in executive functioning (Bolden & Fillauer, 2019). Procrastination among students with ADHD may also stem from a general tendency to start or delay a task, maladaptive coping strategies, failure in self-regulation, or avoidance (Niermann & Scheres, 2014; Van Eerde & Klingsieck, 2018).

We found that students with ADHD symptoms scored higher on the passive procrastination scale, but lower on the active procrastination scale. A possible explanation can be that students who perceive discrepancies between their performance and performance goals are less likely to use active procrastination (Coutinho et al., 2022). It is noteworthy that active procrastination has been found to be a positive predictor of resilience (Ajaikumar, 2021), and it is also linked to self-efficacy and academic achievement (Hensley, 2014). Individuals with ADHD often experience shame in terms of procrastination (Schrevel et al., 2016), which may be another reason for their academic difficulties. In multivariate analyses, passive procrastination was a universal positive predictor of overall ADHD scores and its subscales. On the other hand, active procrastination was a negative contributor to attention deficit but it was not a significant contributor to hyperactivity. Symptoms of hyperactivity include excessive talk, and “being always on the go” (Niermann & Scheres, 2014). Individuals living

with ADHD-Hyperactive-Impulsive Type (ADHD-HI) and ADHD-Combined Type (ADHD-C) may find it difficult to wait to complete a task or activity. Therefore, time pressure preference and conscious decision-making may be a characteristic of primarily Inattentive ADHD.

This perspective of procrastination suggests that we need to break the long-standing view of describing procrastination as an undesirable strategy and shed light on its adaptive perspective, especially in the population of students with ADHD. While passive procrastination is often based on negative feelings related to the task, active procrastination can be seen as conscious decision-making, an effort to achieve satisfactory outcomes (Howell & Watson, 2007) which can even be a positive contributor to students' well-being (Ismail, 2016; Schraw & et al., 2007) and also fewer symptoms of attention deficit.

2.5.1. Strengths and Limitations

This study has several strengths, including exploring the role of several aspects of university life, digital device use, and mental health problems in ADHD symptoms. We also put special attention on different domains of procrastination. In addition, the investigation of these associations is a novelty in Hungary. However, we should also note some limitations here. One of the limitations is that the data were derived from self-report. Although the ADHD scale we used has been found to be appropriate for use as screening test (Farcas et al., 2018; Kessler et al., 2005), it does not serve as a diagnosis. However, since this study was not based on clinical diagnoses, we had the opportunity to explore the correlates of ADHD symptoms without pathologizing them. This is useful in terms of preventing negative psychological consequences as ADHD symptoms can be more common among university students than the number of students with an ADHD diagnosis. Finally, we should also mention that due to the nature of the cross-sectional method and the specific sample, our study does not allow us to determine cause-and-effect relationships and cannot be generalized to the entire population.

2.5.2. Conclusion

In essence, our findings underline the mental health challenges youth with ADHD symptoms might face during their university years. This study adds to a growing corpus of research regarding vulnerability toward depression, boredom, and behavioral addictions among this population. On this basis, we conclude that during the development of health interventions, the connection between ADHD symptoms and smartphone addiction should be considered. In addition to this, our results give valuable insights to the phenomenon of

procrastination. Active procrastination seems to reduce the severity of overall ADHD and inattention, but not hyperactivity symptoms. Future studies could fruitfully explore this issue by using longitudinal designs to gain a better understanding of the relationships among these variables. Greater efforts are needed to ensure cultivation of the adaptive side of procrastination among students living with ADHD. While the current study mainly focused on the risk factors associated with ADHD the findings may stimulate the much-needed multifaced, strengths-based approach toward the population of university students with ADHD.

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2.6. Bridging Section: Connecting Study 1 and Study 2

The first study sought to determine what drives ADHD symptoms to their peaks. It focused on identifying which variables — like procrastination, depression, and smartphone use — contribute most to the heightened experience of these symptoms among university students. This wasn't just about understanding surface-level behaviors; it was about identifying patterns that could explain why some students are more vulnerable to the challenges associated with ADHD symptoms. Passive procrastination, depression, and academic boredom stood out as key factors. Meanwhile, active procrastination offered a glimpse of hope, suggesting that even within struggle, some students develop adaptive strategies.

Study 2 took the insights from Study 1 and expanded on them, shifting from individual behaviors to their long-term consequences. If we can identify the variables that heighten ADHD symptoms, can we also identify the mechanisms that help students navigate their academic journeys successfully — or push them toward disengagement?

Study 2 took this next logical step, expanding the focus from understanding ADHD symptoms themselves to examining their consequences. It explored how academic resilience and depression mediate the connection between ADHD symptoms and dropout intention. It also introduced self-efficacy as a potential buffer, asking whether a strong belief in one's ability to handle challenges could reduce the risk of dropout, even for students struggling with ADHD symptoms.

The transition from Study 1 to Study 2 was driven by a goal to move from understanding what makes ADHD symptoms worse to addressing the larger academic and emotional outcomes these symptoms influence. Study 2 wasn't just a follow-up; it was an effort to connect the pieces, exploring how personal domains, academic resilience, and self-efficacy shape the broader trajectories of students living with ADHD symptoms.

CHAPTER 3. STUDY 2.

Dropout Intention among University Students with ADHD Symptoms: Exploring a Path Model for the Role of Self-Efficacy, Resilience, and Depression

Abstract

Major conceptual models of ADHD and learning disabilities underscore the adverse effects they have on academic performance and dropout from university. Therefore, identifying psychological risks and protective factors can aid in managing academic challenges and decreasing dropout rates. In this cross-sectional study, a sample of 395 Hungarian college students (66.6% female, mean age 23.72 years [SD = 3.87]) responded to an online survey including the Adult ADHD Self-Report Scale, Beck Depression Inventory, General Self-Efficacy Questionnaire, Academic Resilience Scale, and the Higher Education Retention Questionnaire. Path analysis indicated that depression and academic resilience mediate the relationship between ADHD symptoms and dropout intention, while self-efficacy moderates this association. The findings highlight the critical role of psychological factors in shaping academic dropout for college students with ADHD symptoms. Enhancing academic resilience and self-efficacy may help mitigate the negative impact of ADHD symptoms on college retention.

Keywords: ADHD symptoms; higher education; risk and protective factors; dropout intention

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3.1. Introduction

The conceptualization of attention-deficit hyperactivity disorder (ADHD) has undergone a paradigm shift in recent years. Previously considered to be limited to childhood, research and clinical attention have now begun to focus on the adult population [1], with findings indicating symptom continuity in 40–80% of childhood cases into adolescence [2] and approximately 50% into adulthood [3]. Despite a tendency for cases to be hidden in higher education settings [4], Mak and colleagues [5] reported that 15.9% of university students across nine countries screened positive for ADHD, while Shaw and Selman [6] found that 8.4% of individuals currently applying for entry into universities reported having ADHD. These statistics are particularly relevant for Hungary, where significant demand for diagnosis far exceeds the capacity of available resources, resulting in a substantial lack of knowledge regarding the prevalence of ADHD among college students, its relationship with mental health status, and potential interventions for the affected population [7].

Once in college or university, students with ADHD generally complete fewer years of education than their peers [8,9] and are more likely to drop out than students without ADHD [8,10]. Henning and colleagues [11] emphasized impaired attention as a major factor contributing to withdrawal from postsecondary education. While the mechanism underlying the relationship between these two variables remains unclear, students with ADHD often face difficulties with executive functions, manifesting as challenges in focusing on tasks, following directions, comprehending and retaining information, transitioning between activities, problem solving, and organizing their work. Consequently, they may struggle to complete assignments, perform well on tests, and meet academic demands [12]. Furthermore, students with ADHD frequently encounter challenges related to self-regulation, including difficulties with classroom behavior, motivation, perseverance during demanding tasks, and time management. These struggles can also impact peer relationships and interactions with professors, and indirectly influence academic attrition [13].

Previous research examined academic success by analyzing “real dropout” cases and measuring academic persistence based on the duration of students’ enrollment in the university [8], including their decision to discontinue studies [14]. However, Respondek and colleagues [15] identified a limitation in these studies, all of which were conducted after the students had already dropped out leading to limited samples. To address this shortcoming, it is recommended that students’ intention to drop out of university be assessed as it has been found to have a strong association with and predict the actual dropout. The intention to drop out is typically assessed by considering two aspects: (a) the contemplation of leaving

university and (b) discussing this matter with parents, friends, or others. By detecting signs that identify potential dropouts early, universities may be able to implement intervention programs to prevent them from following through with their intentions [14]. It is important to acknowledge that while DuPaul and colleagues [8] studied the academic persistence and enrollment status of students with ADHD, their research did not include dropout intentions. Furthermore, the referenced studies [14,15] primarily focused on typical university students and did not address ADHD symptoms or include clinical samples with ADHD.

In addition to the above-mentioned perspectives, a growing number of studies have emphasized the need to consider psychological elements in the dropout intention process (e.g., [8,16,17,18]). For instance, Martínez-Líbano and Yeomans-Cabrera [19] drew attention to depressive symptoms, Bittmann [20] demonstrated that resilient individuals have more positive academic trajectories and lower dropout intentions, and Buizza [21] articulated the role of self-efficacy in this context. However, there is a dearth of studies focusing on unique psychological variables and the way they may influence outcomes in students who are academically at risk owing to impairments related to ADHD. This research gap needs to be addressed, especially given the higher rates of college failure experienced by these students. Therefore, in addition to considering depression as a potential risk factor for dropout intention, we also included two potential protective factors in our study, namely, academic resilience and self-efficacy.

3.1.1. The Mediating Role of Depression and Academic Resilience

An expanding body of research has underscored the link between internalizing symptoms and compromised college attrition, particularly in the academic realm. All depressive disorders share common features, including feelings of sadness, emptiness, and irritability, along with somatic and cognitive changes that significantly affect an individual's ability to function [22]. Symptoms of depression can reduce interest in daily activities, leading to students losing enthusiasm for learning. This can result in their disengagement from classes and sub-par achievement on exams and assignments [1]. Numerous studies have highlighted the significant negative impact of depression on students' academic persistence. For example, in an extensive, 2-year longitudinal study, Eisenberg and colleagues [23] established that while depression correlates with lower grade point average (GPA) scores, it directly predicts an increased likelihood of dropping out of university. Furthermore, a study by Arbona and colleagues [24] not only confirmed a direct relationship between depression symptoms and college persistence but also highlighted the mediating role of depression in this context. In

critically assessing these findings, it should be noted that these studies did not screen for ADHD symptoms in their sample. This aspect is fundamental, as college students with ADHD symptoms are not only at an increased risk of college dropout [8], but also prone to higher levels of depression due to their symptoms [25,26]. In their research among university students, Sahmurova and colleagues [26] found that ADHD symptoms directly predict higher depressive symptoms. This can be attributed to stressful environmental situations that ADHD can provoke, such as strained relationships [27], victimization by peers [28], and academic underachievement [1]. Depressive symptoms, often resulting from ADHD, significantly contribute to the intention of college students to drop out. This pattern suggests that ADHD symptoms might lead to dropout intentions through the influence of depression, indicating its potential role as a mediator to explain how and why ADHD symptoms and dropout intentions are connected. This assumption remains untested to date.

However, some factors can reduce these risks and promote academic success. For instance, resilience can be defined as maintaining psychological well-being despite adversity [29], and academic resilience reflects an increased likelihood of educational success despite adversity [30]. A growing consensus in the literature considers resilience to be a domain-specific construct [31]. Allan and colleagues [32] and Colp [33] suggest that in the context of university, academic resilience provides a more insightful construct for study than a broader, general resilience. It encompasses a range of factors, such as planning, control, commitment, and low levels of anxiety, and predicts effective school participation and learning enjoyment [34]. Academic resilience may enhance students' mental health and thus improve their learning outcomes, especially those at risk of learning difficulties and school failure [35]. This is particularly relevant for students with ADHD symptoms, as they have lower levels of resilience and a higher chance of dropping out of university [36]. Martin and Burns [37] reported that ADHD symptoms directly challenge a student's ability to adapt, leading to an increasing disengagement from academic activities and the learning environment. Known as the maladaptive Adaptability–Buoyancy–Resilience cycle, this sequential relationship—in which ADHD impacts resilience, which then affects dropout intentions—fits the theoretical understanding of mediation whereby one variable affects another through an intermediate variable.

Although numerous studies [38,39,40] have documented the role of resilience as a protective factor against mental health problems in the typical university student population, the specific advantages of academic resilience remain less explored. To our knowledge, no previous research has investigated academic resilience in association with ADHD symptoms,

depression, and dropout intentions in a university population. These largely unexplored associations indicate the need for further investigation. Therefore, we suggest that resilience (particularly academic resilience) can directly contribute to (lower) intention to drop out and mediate the link between ADHD and dropout intentions.

3.1.2. The Role of Self-Efficacy between ADHD Symptoms and Dropout Intention

Self-efficacy plays an essential role in enhancing academic achievement and persistence [41]. Under the lens of Bandura's Social Cognitive Theory [42], self-efficacy, or an individual's confidence in their ability to accomplish tasks and achieve objectives, is a significant determinant of human behavior and motivation. When individuals harbor a strong belief in their capabilities, they are more inclined to actively engage in, exert effort toward, and demonstrate persistence in those activities. According to this theory, there are four primary sources of self-efficacy: mastery experience (previous success), observational experience (vicarious learning), social persuasion (encouragement from others), and physical/affective states (emotional and physical reactions during tasks) [42]. A common thread among these sources is that they are based on subjective experiences, indicating that self-efficacy can be enhanced.

Previous research exploring the link between dropout intentions and self-efficacy (both academic and general) presents inconsistent findings. Nemtcan and colleagues [43] identified academic self-efficacy (measured by the Motivated Strategies for Learning Questionnaire) as a direct predictor of dropout intentions. Likewise, Buizza and colleagues [21] reported a significant link between academic self-efficacy (measured by Perceived School Self-Efficacy) and dropout intention. Conversely, Fior [44] found that academic self-efficacy (measured by the Higher Education Self-Efficacy Scale) directly influenced semester grades rather than dropout intention. Furthermore, Bulut and Bulbul [45] explored academic self-efficacy (measured by the Academic Self-efficacy Scale) and dropout intention: their findings revealed no significant results using correlation and simple regression analyses. These results align with the findings of Robbins and colleagues [46], which suggest that academic self-efficacy is primarily associated with academic performance rather than retention.

While Bandura [47] acknowledges that strong self-efficacy in one area can sometimes influence a person's confidence in related situations, Mascia and colleagues [48] found no direct effect of general self-efficacy on dropout intentions, noting the study's limitations, including the lack of control for learning disabilities. Rußmann and colleagues [49] studied

students with disabilities (physical, learning, psychic, and other impairments), finding that general self-efficacy is a direct predictor and a mediator of dropout intentions, and while they did not specify the exact diagnoses, the study referenced an item battery that captured different kinds of impairments. Samuel and Burger [50] in a 4-year longitudinal study found a negative connection between general self-efficacy and dropout intentions, yet they argued the mediating nature of the construct. The study identified self-efficacy as a moderator variable in this relationship: high levels of general self-efficacy reduced the influence of adverse life events on dropout intention.

It is important to note that these studies did not explore ADHD symptoms. This is an important gap, given that individuals with ADHD often grapple with a diminished sense of personal agency and experience feelings of demoralization, anxiety, and uncertainty regarding their future trajectory. The literature suggests that these individuals are more susceptible to failure and underachievement, contributing to a decline in self-efficacy [18]. Low self-efficacy is not considered a direct consequence or outcome of ADHD symptoms. Instead, it emerges from high stress levels, limited resources, and interaction with one's environment [51]. ADHD symptoms predict fewer positive and more negative memories, which in turn predict lower self-efficacy through reduced social support [50]. This diminished self-efficacy can undermine the capacity for successful adaptation to college and adult life and compromise persistence in higher education [52]. Self-efficacy may also be essential for individuals with ADHD who seek treatment or mental health support. When people with ADHD have confidence in their abilities, they are more likely to feel equipped to manage the everyday difficulties that often accompany ADHD [51]. This self-belief can be a cornerstone in making positive changes in their lives, such as adopting healthier habits, maintaining motivation, and recovering from setbacks [53]. Newark and colleagues [51] identified self-efficacy as a therapy-relevant factor that reduces the impact of ADHD symptoms. In support of these results, Sagar [54] reported that self-efficacy might buffer the adverse outcomes stemming from ADHD symptoms. General self-efficacy emerges as a relevant variable for assessing dropout intentions in contexts involving ADHD traits, since students with these symptoms face challenges that extend beyond the academic domain (e.g., increased difficulties in adjusting to everyday life and adult responsibilities).

In light of the above we suggest that (1) general self-efficacy may have an influence on dropout intention; (2) rather than including low self-efficacy as a risk factor for students with learning or attention difficulties, exploring the protective potential of self-efficacy could be a valuable area of research; (3) findings on general self-efficacy show mixed results: it has been

identified as not being a direct predictor, acting as a mediator, or serving as a moderator; (4) using a widely recognized and validated scale of general self-efficacy could enhance the comparability and generalizability of findings across studies; (5) the specific relationship between general self-efficacy and dropout intentions concerning ADHD symptoms remains unexplored. Therefore, this study aims to bridge the gap linking ADHD symptoms and dropout intention, while clarifying the function of self-efficacy within this dynamic. Through exploratory analysis, we intend to determine whether self-efficacy may act as a mediating or moderating factor in this relationship.

3.2. Objectives of the Study

Based on the literature reviewed [8,11,55], we aimed to extend prior research by gaining more detailed insight into the interaction among ADHD symptoms, dropout intention, and other factors including self-efficacy, academic resilience (as protective factors), and depression (as a risk factor). The primary objective of this study was to examine a path model through which ADHD symptoms may be related to dropout intention (as an outcome variable) by assessing the potential mediating effects of academic resilience and depression. To gain a better understanding of the connection between the measured variables, we built on Devi and colleagues' [38] work to investigate whether academic resilience mediates the relationship between ADHD symptoms and depression. Given that general self-efficacy can mitigate the negative consequences of ADHD [51], we explored whether self-efficacy could reduce the impact of ADHD symptoms on dropout intention. We conducted an exploratory analysis of its role, adhering to the mediation criteria by Baron and Kenny [56], following the mediator approach of Rußmann and colleagues [49], and examining its potential as a moderator, in line with Samuel and Burger [50]. In light of these considerations, we hypothesize a mediation model with a moderator in which ADHD symptoms negatively and directly predict dropout intentions through the mediating role of academic resilience and depression. We also expect that academic resilience may predict depression. Additionally, we propose that self-efficacy moderates the ADHD–dropout relationship, such that the direct effect of ADHD on dropout intention is weaker when self-efficacy is high.

3.3. Materials and Methods

3.3.1. Participants

A total of 395 students, 263 (66.6%) female and 132 (33.4%) male, enrolled in a higher education institution in Hungary participated in the study; their ages ranged from 18 to 35

years, with a mean of 23.72 years (SD = 3.90). Hungary's higher education institutions adhere to a well-defined three-tier degree system aligned with the European Qualifications Framework (EQF). Bachelor's programs (EQF Level 6) typically encompass 6–8 semesters (3–4 years) of study. Subsequently, students can pursue master's programs (EQF Level 7), necessitating additional 2–4 semesters (1–2 years) of coursework. A characteristic of the Hungarian system is the undivided one-tier master's program. This unique route integrates bachelor's and master's level curricula into a single, comprehensive 5-to-6-year program, leading directly to a master's degree. This integrated model is prevalent in specialized fields such as medicine and teacher training. The highest level of academic qualification, the doctoral degree (EQF Level 8), can be attained in 4-year postgraduate programs. In addition to these traditional pathways, Hungary also offers vocational higher education programs, providing practical, skills-based training that leads to professional qualifications. Of the participants, 312 (79%) were full-time students and 83 (21%) were part-time students. Twenty-two students (5.6%) were enrolled in a vocational higher education program, 244 (61.8%) in a bachelor's degree program, 80 (20.3%) in a master's degree program, 31 (7.8%) in an undivided one-tier master's degree program, and 18 (4.6%) in a doctoral program. All participants were engaged in their studies within the normative duration. In our study, 12 participants (2.90%) reported a prior ADHD diagnosis, and all participants indicated no other learning disabilities, intellectual impairments, psychiatric conditions, neurological disorders, or difficulties. All participants identified Hungarian as their primary language.

3.3.2. Procedure

In this cross-sectional study, empirical data were collected between May and September 2022, through a self-administered digital questionnaire using the Typeform platform. The target population for this study included all university students in Hungary. The questionnaire was disseminated through Neptun, a widely adopted unified study platform used by all Hungarian universities. Thus, the questionnaire was shared within Facebook groups that had significant followings among Hungarian students and revolved around topics related to research, psychology, and ADHD. The participants were not provided with any form of compensation for their involvement or completion of the survey. This study relied on the voluntary participation of individuals. The inclusion criteria for participating in this study were as follows: (a) being over 18 years of age, (b) being enrolled as an active student at a Hungarian university, and (c) provision of written informed consent. To ensure quality control and data collection accuracy, participants had to confirm that they (1) did not have any

difficulties in understanding the questions and (2) responded carefully and truthfully. Application of these criteria did not lead to exclusions. The ethnic composition of Hungary, predominantly consisting of ethnic Hungarians, renders ethnicity a less pertinent factor in characterizing our sample. Additionally, while socioeconomic status (SES) holds significance in numerous domains, it was not a central element of our study, leading us to exclude these variables. During data collection and analysis, we strictly adhered to the principles outlined in the Declaration of Helsinki and followed all relevant ethical guidelines about the involvement of human subjects. The Institutional Review Board approved the study procedures (7/2021). After providing informed consent, the participants answered questions regarding their basic demographic information before responding to the measures described below. There were no missing data. The study materials were administered in Hungarian.

3.3.3. Measures

ADHD. In this study, ADHD symptoms were evaluated using the World Health Organization's Adult ADHD Self-Report Scale (ASRS-v.1.1), a self-report measure consisting of 18 items [57]. Participants were asked to rate the frequency of their experiences with the statements on a five-point scale, with 0 indicating "never" and 4 indicating "very often". The scale includes nine items that focus on hyperactive/impulsive symptoms (e.g., "How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?") and nine items that examine attention-deficit symptoms (e.g., "When you have a task that requires a lot of thought, how often do you avoid or delay getting started?"). The first six items of the ASRS can be used as a screening tool, due to their validated and highly predictive accuracy (94.3%) for identifying individuals at risk for ADHD. This makes these items an effective tool for preliminary assessment [58]. The goal of the ASRS v1.1 is to reliably identify adults who may warrant further assessment for ADHD. Importantly, the scale is not diagnostic but serves as an initial screening tool. While the original dichotomous scoring method (assigning 1 point for exceeding the threshold) has been replaced with a more nuanced 0–24 scale, research indicates this revised system is more robust for studying ADHD symptoms and related factors than the 0–6 system [59]. The 0–24 scale categorizes scores into four distinct risk levels: 0–9 (low-negative), 10–13 (high-negative), 14–17 (low-positive), and 18–24 (high-positive). Higher ASRS scores indicate an increased likelihood of clinically significant levels of self-reported ADHD symptoms [60]. The six-question World Health Organization Adult ADHD Self-Report Scale (ASRS) Screener was validated in a sample of subscribers to a large health plan in the US. Its internal consistency (reliability) ranged from 0.63 to 0.72, and its test–

retest reliability (Pearson correlations) ranged from 0.58 to 0.77. The ASRS Screener proved strong concordance with clinical diagnoses, with an area under the receiver operating characteristic curve (AUC) of 0.90. The brevity and ability to discriminate at-risk cases from non-cases make this screener attractive for research and clinical outreach [59]. The ASRS Screener demonstrates strong reliability and validity, as well as partial invariance across 42 countries and various languages, cultures, and genders [61]. In their study focusing on college students, Fuller-Killgore and colleagues [62] found an internal consistency of 0.66 for the six-item ASRS screening tool. Cronbach's α was 0.63 in the current study, aligning with these established metrics.

Depression. The Hungarian-adapted and validated version of the Beck Depression Inventory Short Form (BDI-H) was used as a screening tool to measure depressive symptoms [63,64]. The BDI-H consists of nine items asking respondents to evaluate their experiences (e.g., "I am too tired to do anything") on a four-point scale, with 1 representing "not typical at all" and 4 representing "entirely typical". A total score was obtained by summing the responses to each item, with a score of 20 or higher indicating a risk of depression. The Beck Depression Inventory is a widely used and well-respected tool for assessing depression. Its reliability and validity have been firmly proven through numerous studies worldwide, making it a valuable resource in both research and clinical practice. In the initial study conducted by Rózsa and colleagues [64], the internal reliability of the scale was α =.83. In line with this, Storch and colleagues [65] found high internal consistency and positive correlations with other self-report measures of depression and anxiety, securing the validity and reliability of the BDI as a measurement tool for depression in college students. The scale yielded a reliability coefficient of 0.83 in the current study.

Self-Efficacy. The General Self-Efficacy Questionnaire (GSE) was used to measure the participants' perceptions of their ability to cope effectively with stressful situations [66]. This questionnaire consists of 10 items (e.g., "I am confident that I could deal efficiently with unexpected events"). Participants were asked to rate the extent to which each statement described them using a four-point Likert scale, with 1 indicating "not at all true" and 4 indicating "exactly true". The total GSE score was obtained by adding the responses to all items. The scores range from 10 to 40, with a higher score indicating a higher level of self-efficacy. The General Self-Efficacy (GSE) questionnaire, originally a 20-item self-assessment scale developed by Jerusalem and Schwarzer (1979), was later refined into the widely used 10-item version (GSE-10). The GSE-10 has demonstrated good psychometric properties and has been translated into numerous languages, facilitating its use in diverse populations,

including adults with ADHD [53]. The scale's internal reliability, ranging from 0.76 to 0.90, was reported by the scale authors across samples from 23 different nations. The internal consistency (Cronbach's α) was 0.89 in this study.

Academic Resilience. The Academic Resilience Scale-30 (ARS-30) was used to measure a context-specific construct of academic resilience [30], using student responses to academic adversity as the basis. The scale was translated and back-translated by bilingual translators. Participants responded to the 30 items using a five-point Likert scale, where 1 represents "likely" and 5 represents "unlikely," after being exposed to a short vignette. The vignette's purpose was to portray a realistic scenario of academic adversity, highlighting notable academic challenges and the associated difficulties and struggles. The ARS-30 questionnaire comprises three factors: perseverance (e.g., "I would keep trying"), reflective and adaptive help-seeking (e.g., "I would seek help from tutors"), and negative affectivity and emotional response (e.g., "I would begin to think my chances of success at university were poor"). The global score for the ARS-30 was determined by adding the responses to all 30 individual items, each receiving equal weight. Total scores ranged between 30 and 150, with a higher score indicating a higher level of academic resilience. The validation study involved a sample of undergraduate students and had an internal consistency: $\alpha = 0.90$ [27]. Furthermore, the ARS-30 has been validated in multiple languages, further establishing its effectiveness. These findings suggest that the ARS-30 is a reliable and valid instrument for assessing academic resilience in college students, providing a valuable resource for educational and psychological evaluations [67]. In the current study, Cronbach's α was 0.87.

Dropout intention. The intention to drop out of university was assessed using a Higher Education Retention Questionnaire [68]. The Hungarian questionnaire consists of 17 items and six subscales: support from teachers (e.g., "I felt supported by my teachers"), expectations of own performance (e.g., "I strived to go to my exams as prepared as possible"), transparency of expectations (e.g., "It was clear to me what I had to do to complete my coursework"), social involvement (e.g., "I felt I didn't belong to any social group at university"), intention to drop out (e.g., "I was thinking about suspending my studies"), and academic/study involvement (e.g., "I liked my studies"). Participants were asked to rate their agreement with each statement on a six-point Likert scale, where 1 indicates "almost never" and 6 indicates "almost always". In the present study, only the "intention to drop out" subscale of the Higher Education Retention Questionnaire was applied. In the study conducted to validate the scale among Hungarian higher education students, the internal

consistency of the scale was found to be α = 0.94 [68]. In the current study, Cronbach's alpha was 0.95 for this subscale.

3.4. Data Analysis Plan

To test our proposed model, we conducted multiple mediator and moderator analyses using Preacher and Hayes' [69] PROCESS macro v3.3 for IBM SPSS. We followed the recommendations of Hayes [70] and selected bias-corrected 95% confidence intervals (CIs). In this case, the indirect effect is significant if the CI does not include 0. All variables were z-standardized before the path analyses. The conditional indirect effects were evaluated at three levels: one standard deviation above the sample mean, one below the sample mean, and the sample mean itself. We employed the open-source statistical software program JASP 0.17.3 [71] to secure comprehensive fit indices. The Tucker–Lewis index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) were reported as model fit indices. A satisfactory fit is indicated by TLI and CFI values of 0.90 or above, while values exceeding 0.95 denote an excellent fit, as per Hu and Bentler [72] and McDonald and Marsh [73]. For RMSEA, values less than 0.05 suggest a good fit, values ranging between 0.05 and less than 0.08 denote an adequate fit, and those between 0.08 and 0.10 indicate a mediocre fit. RMSEA values greater than 0.10 are unacceptable [74]. To determine the minimum required sample size for this study, we employed G*Power 3.1.9.7 [75] and specified the following parameters: (a) significance level (α, probability of Type I error) at $p < 0.05$; (b) statistical power (1 − β, probability of avoiding a Type II error) at 0.95; and (c) an effect size of 0.15 (medium). The resulting minimum sample size was calculated to be 119 for the mediation and moderation analyses. The actual sample size used in the study exceeded these minimum requirements.

3.5. Results

3.5.1. Correlation Matrix

Prior to the mediation and moderation analyses, we examined the intercorrelations between all the measured variables (see **Table 5**). The results show that the intention to drop out was positively correlated with ADHD symptoms and depression, and negatively correlated with academic resilience and self-efficacy. In contrast, ADHD scores were negatively correlated with academic resilience and self-efficacy and positively correlated with depression. Academic resilience was positively correlated with self-efficacy and negatively correlated with depression. Self-efficacy was also negatively correlated with depression.

Table 5. Descriptive Statistics and Spearman's Correlations for Study Variables for the Full Sample

Variable	M	SD	Skewness	Kurtosis	Min.	Max.	1	2	3	4
1. Dropout intention	7.10	4.58	0.98	−0.24	3	18	–			
2. ADHD symptoms	11.58	4.15	0.44	0.17	2	24	0.31***	–		
3. Academic resilience	98.51	10.92	−0.14	−0.11	67	126	−0.40***	−0.33***	–	
4. Self-efficacy	30.41	5.55	−0.35	0.16	12	40	−0.20***	−0.23***	0.50***	–
5. Depression	16.24	5.44	0.63	−0.06	9	33	0.39***	0.40***	−0.51***	−0.44***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Based on the ASRS screening tool, 32.2% (n = 127) of participants scored in the low-negative, 39.2% (n = 155) in the high-negative, 19.5% (n = 77) in the low-positive, and 9.1% (n = 36) in the high-positive categories for ADHD risk. The skewness and kurtosis values of the measured variables were within the range of ±1.0, indicating that the distribution did not deviate significantly from normality [76]. Furthermore, variance inflation factors (VIFs) ranging from 1.07 to 1.54 and tolerance values between 0.64 and 0.93 indicated no substantial multicollinearity among the independent variables. The data also met the assumption of independent errors (Durbin–Watson = 1.86). Based on these results, all correlated variables were included in further analyses.

3.5.2. Mediation and Moderation Analyses

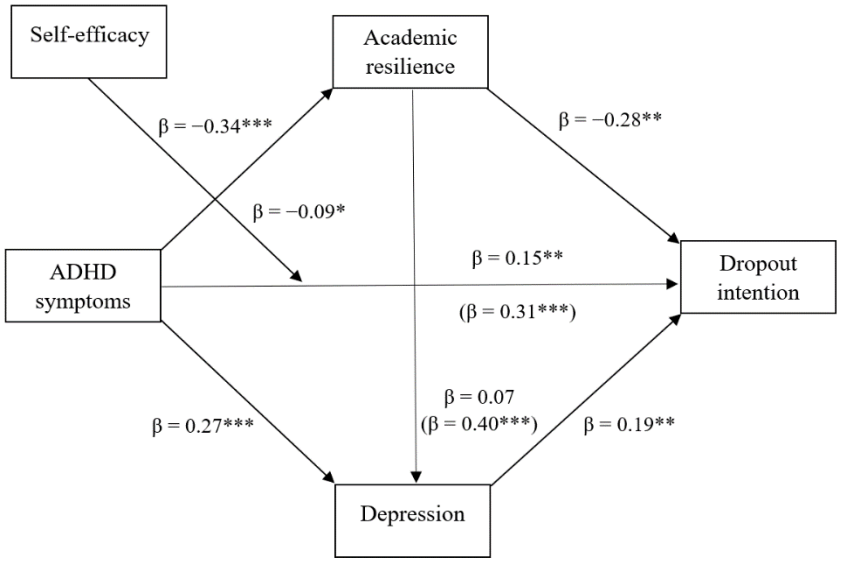
The tested model assessed the indirect effect of ADHD symptom scores on university dropout rates, considering the mediating roles of academic resilience and depression. Furthermore, the model explored the direct effect of ADHD symptoms on dropout intention and whether it was mediated or moderated by self-efficacy.

As shown in **Figure 2**, the analyses indicated a significant negative relationship between ADHD symptoms and academic resilience, as indicated by a beta coefficient of −0.34 ($p < 0.001$). Furthermore, a positive association was observed between ADHD symptoms and depression, with a beta coefficient of 0.27 ($p < 0.001$). These findings suggest that an increase in ADHD symptoms corresponds to a decline in academic resilience and an increase in depression.

Figure 2

Mediation Model with Dropout Intention as the Outcome Variable, ADHD Symptoms as a Predictor, Academic Resilience and Depression as Mediators, with the Moderation of Self-Efficacy. Additional Analysis with Depression as the Outcome Variable, ADHD Symptoms as the Predictor, and Academic Resilience as the Mediator.

*Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.*



When considering dropout intention as the outcome variable, there was a negative association between academic resilience and dropout intention (β = −0.28, $p < 0.001$). Conversely, depression (β = 0.19, $p < 0.001$) and ADHD symptoms (β = 0.31, $p < 0.001$) were positively associated with dropout intention. This suggests that enhancements in academic resilience are linked to increased persistence, whereas the presence of depression and ADHD symptoms heightens dropout intention.

The direct relationship between academic resilience and depression appeared positive, as evidenced by the beta coefficient of 0.40 ($p < 0.001$). However, when we factored in the interaction between academic resilience and ADHD symptoms, with depression as the dependent variable, the effect did not reach statistical significance (β = 0.07, $p = 0.062$).

Interestingly, self-efficacy did not appear to directly impact the relationship between ADHD symptoms and dropout intention, as indicated by the non-significant coefficient of 0.04 ($p = 0.516$; 95% CI = −0.071; 0.142). Therefore, it failed to meet the criteria of a mediator set forth by Baron and Kenny [56]. However, it played a pivotal role as a moderator between ADHD symptoms and dropout intention, with a significant interaction effect of −0.09

($p < 0.05$). These findings indicate that the effect of ADHD symptoms on dropout intention depends on self-efficacy. At the low (−1 SD) and mean levels of self-efficacy, the conditional effects of ADHD symptoms on dropout intention were significant, with coefficients of 0.23 (95% CI = 0.105; 0.360) and 0.14 (95% CI = 0.051; 0.240), respectively (both $p < 0.001$). Based on 5000 bootstrap samples, the 95% bias-corrected CI consistently excluded zero; however, this effect diminished (95% CI = −0.064; 0.182) and became non-significant at high levels (+1 SD) (coefficient = 0.06, $p = 0.335$). The data underscored that the impact of ADHD symptoms on dropout intention was more potent at lower mean levels of self-efficacy. After controlling for the measured variables, ADHD symptoms continued to demonstrate a significant effect of 0.15 ($p < 0.001$) on dropout intention. The final model showed an adequate fit (CFI = 0.98, TLI = 0.95, RMSEA = 0.06). The model explained 23% of the variance in the intention to drop out (R2 = 0.23, F = 23.81, $p < 0.001$). As presented in **Table 6**, the total and indirect paths were significant (except for self-efficacy as a mediator), as the 95% bias-corrected CIs did not include zero in each case.

Table 6. Point estimates and 95% CIs for the indirect effect of ADHD symptoms on dropout intention through depression and academic resilience.

Mediator	Point Estimate	SE	Lower BC 95% CI	Upper BC 95% CI
Total indirect effects	0.174	0.033	0.113	0.242
Depression	0.079	0.027	0.028	0.134
Academic resilience	0.095	0.023	0.053	0.143
Self-efficacy	0.092	0.013	−0.035	0.020

Note: BC = bias corrected; CI = confidence intervals; 5000 bootstrap samples.

3.6. Discussion

This study aimed to test a path model designed to explain the relationship between ADHD symptoms and dropout intention, with a focus on evaluating the potential mediating effects of academic resilience and depression as well as the mediating or moderating effect of self-efficacy. The results indicate that depression and academic resilience mediate the link between ADHD symptoms and dropout intention, whereas self-efficacy moderates this association. The following sections discuss the main findings and their implications for future research.

3.6.1. Mediation and Moderation Findings between ADHD Symptoms and Dropout Intention

Academic resilience and depression partially mediated the relationship between ADHD symptoms and dropout intentions, whereas self-efficacy moderated this link. These results suggest that psychological and mental health factors may play a role in the relationship between ADHD symptoms and dropout intention, beyond the commonly studied executive functioning deficits (e.g., skills related to organization, assignment tracking, and completion). In a previous study, depressive symptomatology was found to be a negative predictor of persistence intention and was associated with an increased likelihood of dropping out of college [24]. Given that students with ADHD are particularly affected [26], it is plausible that depressive symptoms may partially explain the relationship between ADHD symptoms and dropout intention.

The results of the current study, along with the theoretical considerations, suggest that academic resilience may function as a mediator between ADHD symptoms and the intention to drop out. Martin and Burns [37] proposed the maladaptive Adaptability–Buoyancy–Resilience theoretical cycle to explain how academic resilience may play a role in educational setbacks in the lives of students with ADHD. Students with ADHD often experience difficulties in regulating their behavior, thoughts, and emotions, which can impede their ability to keep up with or adapt to the unpredictable and varied demands of a typical academic day. The inability to adapt to changing and unpredictable school-day events can result in low-level academic risks, such as difficulties in meeting deadlines, strained relationships with professors, and early indications of poor academic performance. These struggles reflect poor academic buoyancy, or the ability to recover and bounce back from academic setbacks and challenges. Persistent difficulties managing low-level academic risks may result in chronic non-completion of work, maladaptive relationships with teachers, and sustained underachievement. As academic underachievement persists, students with ADHD may become increasingly disconnected from academic processes and important behavioral, cognitive, and emotional regulation skills. A lower regulatory capacity can further diminish students' ability to adapt to the unpredictable nature of a typical day at university, which can perpetuate a cycle of maladaptive adaptability, buoyancy, and resilience [37]. Although previous research suggested that resilience could act as a protective factor against depression [38], it did not control for ADHD symptoms. However, our study did not find any significant relationship. Despite the lack of significant mediating effects, the findings provide valuable

insight into how academic resilience and ADHD symptoms may independently influence depression. These results suggest that both academic resilience and ADHD symptoms are important factors for understanding depression among college students. Strengthening academic resilience could potentially contribute to a lower risk of depression, regardless of the presence of ADHD symptoms, highlighting the importance of promoting resilience in this population. However, addressing ADHD symptoms may also be critical in reducing the risk of depression, even for students with higher levels of academic resilience.

Self-efficacy moderated the link between ADHD symptoms and dropout intention. The absence of a significant direct effect implies that self-efficacy alone does not reliably predict a student's intention to drop out. This finding is consistent with the conclusions of Mascia and colleagues [48] and supports the moderating function of self-efficacy proposed by Samuel and Burger [50]. The significant interaction between ADHD symptoms and self-efficacy suggests that the relationship between ADHD symptoms and dropout intention depends on self-efficacy. Higher self-efficacy levels tended to weaken the association between ADHD symptoms and dropout intentions, while low self-efficacy levels strengthened this relationship. In other words, when individuals with ADHD have higher confidence in their ability to overcome challenges and succeed, the likelihood of dropout intention is reduced. In contrast, when self-efficacy is low, the link between ADHD symptoms and dropout intention becomes more pronounced. The results build on those of Newark and colleagues [51]. Oliveira and colleagues [17] suggested that ADHD symptoms can lead to poor college adjustment, which, in turn, may result in lower self-efficacy. While they specifically focused on work self-efficacy, the results suggest that this effect also extends to general self-efficacy. Our findings align with this perspective, as self-efficacy serves as a moderator rather than a mediator in the relationship between ADHD symptoms and dropout intention. A possible explanation for how students with ADHD symptoms develop reduced confidence in their academic and career decision-making ability, leading to dropout intention, could be this potential mechanism.

It appears that dropout intention stems from the complex interaction of multiple factors, rather than a straightforward linear relationship. Gaining a comprehensive understanding of the connections between these variables is essential for developing effective interventions for students with ADHD, both before and during college [17,77].

3.6.2. Strengths and Limitations

This study has several strengths, including its investigation of the role of multiple factors (ADHD symptoms, mental health problems, and psychological resources) in university dropout intention. It is unique in focusing on protective factors for university dropout in addition to risk factors. Furthermore, our investigation of these associations in Hungary is novel. However, the study has some limitations. First, although the recruitment materials did not explicitly mention the study's purpose, we took steps to distribute the questionnaire to groups commonly accessed by students with an interest in ADHD and psychology. Despite this, the approach poses a limitation as it may have resulted in a relatively higher proportion of students with high levels of ADHD symptoms in our sample. This can also be explained by the 2–3-year-long waiting lists for ADHD screening in Hungarian hospitals, resulting in a higher prevalence of undiagnosed students [7]. It is important to acknowledge the lack of data on participants' academic majors, current semesters, and the proportion of female participants in our study. The latter could be attributed to the tendency of female individuals to be more likely to participate in surveys than male individuals [78].

Second, the data were based on self-reports, and although the ADHD scale we used was validated for screening purposes [59,79], it cannot replace clinical diagnoses. The ASRS only aims to identify individuals who may exhibit ADHD symptomatology and, therefore, require a full diagnostic workup. The scale, however, should not be misconstrued as a diagnostic instrument; its primary purpose is to prepare further clinical inquiry. The same issue is relevant for the assessment of depression. Moreover, despite its use in college settings, the ASRS was not specifically developed for this population [4]. The reliability of the ADHD symptom measure was low, which should be considered when interpreting our results. However, we concur that the issue extends beyond the psychometric properties of the instrument. Our results and the research landscape [80] underscore the need for further refinement in ADHD assessment, particularly within college populations. Hartung and colleagues [81] observed that a lower symptom threshold of 4, rather than the DSM-5's 5, proved more effective in predicting impairment in college students. Similarly, Matte and colleagues [82] suggested distinct symptom thresholds for inattention and hyperactivity–impulsivity in adults. Flory and colleagues [83] provided evidence that a unidimensional model of ADHD might be most suitable for college students, challenging the separation of symptom clusters. However, some authors have suggested entirely new ADHD symptoms for adults (e.g., changing plans at the last minute, procrastination, low follow-through on

commitments, emotional dysregulation, and fluctuating quality of work) [80]. Collectively, these findings imply that current diagnostic criteria may not be optimally calibrated for adult and college student populations, warranting further exploration of alternative symptom thresholds and models to refine screening accuracy and ensure appropriate interventions.

A further important limitation of our study is that we did not assess medication usage for depression in our sample. However, in our study, 28.6% of the sample met the criteria for ADHD risk (low- and high-positive), aligning with Farcas and colleagues [79] who found a similar result in Hungary using the 6-item ASRS-v1.1 screening test. Their study reported an unweighted prevalence of ADHD symptoms of 37.3%, corresponding to individuals classified as having a high likelihood of ADHD based on the screening. Likewise, in our sample, 31.13% were at risk of depression based on the BDI scale, in line with previous Hungary-wide research [84], which identified approximately 40% of students with an elevated risk of depression. Given the retrospective nature of the data, self-reported symptom intensity may be subject to recall bias, potentially leading to either an underestimation or overestimation of the actually lived experiences. To establish the replicability of these findings, further studies integrating behavioral measures are necessary.

Despite the theoretical framework not directly pointing toward it, examining the role of academic self-efficacy could be valuable in the context of students with ADHD symptoms and dropout intention. We chose not to pursue this direction due to the theoretical underpinnings, concerns about the replicability of results, and the lack of a validated academic self-efficacy questionnaire in Hungarian.

Our study contributes to the understanding of the correlates associated with ADHD symptoms without pathologizing them, which is particularly relevant given their prevalence among university students. The self-report tools used in our study are widely known and frequently used in research. This makes it easy to access and replicate the study using different samples in different countries. Future research should consider adopting longitudinal designs to explore the role of self-efficacy as a moderator in greater depth and to uncover potential protective factors for students with ADHD symptoms. Assessing these factors before students enter tertiary education, throughout their academic journey, and as they transition into adulthood and the workforce would be particularly valuable. Additionally, it would be intriguing to examine whether this moderating mechanism influences other dropout-related behaviors, such as disengagement from academic support services, patterns of class attendance and participation, struggles with procrastination and time management, difficulties in social integration, persistence in challenging courses, and engagement in extracurricular

activities. Finally, owing to the limited sample size, the results cannot be generalized to other populations.

3.7. Conclusions and Implications

This study contributes to the expanding body of research on how ADHD symptoms are related to dropout intention through psychological mediators and moderators. Our findings highlight the unique contributions of academic resilience and general self-efficacy in reducing the risk of college dropout among students with ADHD symptoms, shedding new light on these important protective factors. Our results have significant implications for the treatment of adult ADHD symptoms, indicating that therapy and intervention programs should incorporate resource-oriented modules to enhance a multifaceted strength-based approach toward this population.

Bartimote-Aufflick and colleagues [85] suggested that certain teaching strategies can enhance students' self-efficacy. Effective strategies include providing opportunities for peer collaboration, addressing misconceptions, using multimedia in the learning process, offering additional resources for challenging concepts, and encouraging students to share their personal experiences. Furthermore, Van Dinther and colleagues [86] highlighted that interventions based on the Social Cognitive Theory are more effective in emphasizing mastery experiences. Practical experiences such as engaging in tasks that apply knowledge and skills to challenging situations are considered to facilitate mastery. Additionally, combining goal setting with self-reflection (i.e., self-regulation components) may influence students' perceptions of progress, leading to a sense of mastery experience [40]. These approaches are particularly important for students with ADHD. Educators and practitioners play a central role in empowering students by cultivating a stronger sense of self-efficacy. Based on the findings of Schmidt-Barad and colleagues [87], the role of teachers and their interactions with students with ADHD can significantly influence their self-efficacy. Positive and negative memories of teachers can profoundly affect students' beliefs about their ability to succeed academically. Moreover, social support, including support provided by teachers and peers, plays a vital role in students' self-efficacy and overall academic experience.

Our results are consistent with those of a previous study [24], which suggested that depression is a significant risk factor for college dropout among students with ADHD symptoms. This emphasizes the importance of addressing depression in this population in order to promote academic resilience and success. The results of this study are highly promising and define the potential effectiveness of psychosocial interventions, such as

cognitive-behavioral therapy (CBT) programs [88] and the ACESS program [89]. These interventions aim to enhance adaptive thinking skills through cognitive therapy strategies, targeting the co-occurring depression and anxiety commonly observed in this group [90]. The program addresses them concurrently in an integrated manner, centered on a common theme, such as academic functioning [91]. Global adoption of the ACESS program and coaching interventions could lead to substantial advantages, particularly in countries such as Hungary, where no such programs are currently available for college students with ADHD symptoms.

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3.8. Bridging Section: Connecting Study 2 with Studies 1 and 3

Study 2 served as an important nexus, linking the behavioral revelations of Study 1 with the relational intricacies examined in Study 3. Study 1 discovered the variables that predict ADHD symptoms — passive procrastination, depression, and smartphone use. These elements don't operate in isolation; they converge, magnifying the struggles faced by students with ADHD symptoms. Yet these findings prompted a deeper question: what happens when these difficulties extend beyond the individual, influencing both academic perseverance and social connectivity?

Study 2 addressed this by shifting its focus to dropout intention — a stark consequence of cumulative academic and emotional strain. It illustrated that ADHD symptoms, while significant, are not solely responsible for dropout intention.; they contribute to a broader cascade of psychological challenges, with academic resilience and self-efficacy emerging as potential strongholds against these pressures. But even here, another layer emerged. The struggles of these students often stretch beyond the academic sphere, mirroring patterns of detachment and isolation. For instance, the excessive smartphone use identified in Study 1 as a significant factor may not be simply a coping mechanism; it may reflect a profound loneliness — a digital attempt to substitute for meaningful social bonds.

This relational thread became the focal point of Study 3, which analyzed rejection sensitivity — a heightened vulnerability to perceived exclusion. Study 3 widened the scope, addressing the social and emotional domains of students with ADHD symptoms and exploring how their interpersonal relationships, psychological well-being, and even their capacity to savor positive experiences are interwoven. Taken together, these studies present a unified narrative: ADHD symptoms are not isolated struggles but resonate across academic, emotional, and social dimensions, creating challenges that are deeply interconnected.

The progression from Study 1 to Study 3 through Study 2 captures the evolution of this research. From understanding the drivers of ADHD symptoms to exploring their academic and relational consequences, the studies integrate into a broader inquiry into how these students navigate a world that often can feel overwhelming. They suggest a central understanding: the academic, emotional, and social hardships of students with ADHD symptoms are not separate domains — they are facets of the same story, a story marked by adversity, resilience, and the profound human need for connection.

CHAPTER 4. STUDY 3.

Associations between ADHD symptoms and rejection sensitivity in college students: Exploring a path model with indicators of mental well-being

Abstract

The purpose of this study was to assess the association between attention-deficit hyperactivity disorder (ADHD) symptoms and rejection sensitivity in college students, and whether it is mediated or moderated by elements of mental well-being. Using a cross-sectional design, the study examined 304 Hungarian college students who responded online to a set of questionnaires that included the Adult ADHD Self-Report Scale, The Mental Health Test, and the Rejection Sensitivity Questionnaire. Path analysis indicated that well-being, creative/executive proficiency, self-regulation, and resilience partially mediated the relationship between ADHD symptoms and rejection sensitivity, while savoring moderated this link. The model explained up to 50% of the total variance in rejection sensitivity scores. Findings suggest that university students with ADHD symptoms may particularly benefit from acquiring savoring skills to enhance their mental well-being and lower sensitivity to rejection. As such, the results carry significant implications for counseling psychologists, educators, and mental health professionals working in the higher education sector.

Keywords: university students, rejection sensitivity, ADHD symptoms

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4.1. Introduction

Young adulthood is marked by significant changes: individuation from family, development of new social connections, and increased responsibility and autonomy (Duffy et al., 2019). Moreover, this period presents a high risk for maladaptive cognitions, academic struggles, and the onset of mental health conditions, all while self-regulation skills are still under development (Tariq et al., 2021). Due to these unique stressors and vulnerabilities, university students are a population of particular interest to policy makers, mental health professionals, educators, and researchers (Emmerton et al., 2024). For many young adults, the university serves as the hoped-for environment for social and academic flourishing, yet the prevalence and intensity of mental health problems are on the rise (Sanders, 2023). While risk factors are well established, the literature offers little guidance on how to maintain positive mental health.

To help fill this gap in the literature, in this study we focused on the theory of positive psychology introduced by Seligman and Csikszentmihalyi (2000), which boosts research, enabling us to better understand the role of positive personality characteristics in flourishing at both individual and social levels. Flourishing, a relatively new concept in psychology, offers a promising framework to support the ongoing process of self-regulation and achieve emotional and social well-being. Notably, the well-established factors of positive psychology, such as competence, emotional stability, positive emotions, positive relationships, and resilience, significantly overlap with the characteristics needed for successful academic adjustment (Hassan et al., 2023). This is especially important for historically disadvantaged groups in higher education, who often find this transition particularly challenging. For example, diversity factors such as ethnicity, gender, sexuality, culture, socio-economic status, and disability can significantly heighten stress and psychological difficulties during this period (Volstad et al., 2020). Given the rising number of students with disabilities on college campuses (DuPaul et al., 2021), there is an urgent need for a framework that promotes our understanding of health maintenance, helps social adjustment, and empowers them to thrive in this environment.

Incoming first-year university students represent a population with a significant prevalence of attention-deficit hyperactivity disorder (ADHD), with Mak et al. (2022) reporting that 15.9% of university students across nine countries screened positive for ADHD risk and Shaw and Selman (2023) noting a prevalence of 8.4% in the United Kingdom. Despite increasing awareness, a concerning number of individuals remain undiagnosed (Lovett et al., 2015), however. This issue is particularly concerning in Hungary, as national

data suggests that ADHD prevalence among adults falls between 2% and 4% (Bitter et al., 2010). However, data on the prevalence of ADHD among university students is still unavailable, and existing resources for diagnosis and intervention are insufficient to meet the significant demand (Kilencz et al., 2024). This disparity likely contributes to a high number of students with ADHD symptoms remaining undiagnosed.

University students with ADHD symptoms face substantial challenges in their education. Such struggles often stem from difficulties with emotion regulation and a heightened vulnerability to internalizing disorders (Farmer et al., 2023). Thus, growing research acknowledges emotional symptoms as intrinsic to ADHD, emphasizing their impact on wellbeing, educational outcomes, and mental health (Reimherr et al., 2020; Villemonteix et al., 2015). It is important to acknowledge that self-reported ADHD symptoms can overlap with other conditions, including substance use disorders (Bahji, 2024), autism spectrum disorder (Waldren et al., 2024), learning disabilities (Kellens et al., 2024), bipolar disorder (Barden et al., 2023), mood disorders (particularly major depressive disorder), and generalized anxiety disorder (Alarachi et al., 2024). However, the high prevalence of emotional dysregulation alongside ADHD symptoms is independent of comorbidity (Shaw et al., 2014), underscoring the need for a deeper understanding of these connections, especially within the unique population of university students (Lovett et al., 2015).

Highlighting the need for assessment and support for this population, our study investigated the connection between ADHD symptoms and rejection sensitivity (RS) among college students. Specifically, we examined whether constructs of mental well-being, including resilience, self-regulation, general well-being, and creative/executive functioning, mediate or moderate this relationship.

4.2. The Link Between RS and ADHD

RS is a cognitive-behavioral construct that refers to the predisposition to anxiously anticipate, quickly identify, and overreact to instances of rejection (Downey et al., 1997). While not recognized as a distinct diagnostic entity, it is understood to be a cognitive-affective bias or personality disposition characterized by an increased sensitivity to social rejection (Gardner et al., 2020). This negative emotional reaction, while widespread, is chronically understudied, especially in the context of adult ADHD symptoms.

The RS model (Downey & Feldman, 1996) suggests that extreme sensitivity to signals of rejection, leading to overreactions, stems from a natural learning process. Such sensitivity can be a product of early, extended, or intense experiences of rejection from caregivers or

important individuals in a person's life (Gardner et al., 2020). Through these experiences, children learn to anticipate rejection in situations involving close relationships. Therefore, the anxious anticipation of rejection forms the starting point of the dynamics. This tends to result in a reduced threshold for perceiving negativity, a heightened tendency to take negative cues personally, and intense emotional responses (Pietrzak et al., 2005). This inclination toward oversensitivity, in turn, can alter behavioral patterns in a way that can result in actual rejection (Meehan et al., 2018; Mor & Inbar, 2009; Ng & Johnson, 2013).

Since high RS and the subsequent emotional symptoms are prevalent among individuals with ADHD traits (Babinski et al., 2019; Jaisle et al., 2023), some view them as an intrinsic aspect of the disorder rather than merely an associated characteristic (Faraone et al., 2019). Symptoms of ADHD are generally perceived negatively (Beaton et al., 2022) and often provoke a hostile emotional state and intense interpersonal rejection (Paulson et al., 2005). For example, children with ADHD symptomatology frequently experience peer rejection and negative interactions within their home environment. Further, parents are more inclined to demonstrate greater levels of criticism and lesser warmth towards children exhibiting ADHD traits (Psychogiou et al., 2007). Research has linked childhood ADHD symptoms and the often co-occurring oppositional behavior with negative attachment, implying that rejection by parents can, in some instances, be a persistent issue (Clarke et al., 2002; Gomez & Gomez, 2002).

The challenges that adults with ADHD symptoms encounter in social settings are well documented (Wymbs et al., 2021). Qualitative studies, for example, have revealed that adults with ADHD symptoms struggle with maintaining relationships (Kwon et al., 2018; Matheson et al., 2013) and moderating their behavior to conform to social norms (Schreuer & Dorot, 2017). In experimental research, undergraduate students expressed decreased levels of inclination to engage with individuals exhibiting behaviors characteristic of ADHD (Canu et al., 2008; Paulson et al., 2005). Further, negative perceptions of individuals living with ADHD symptoms are not contingent upon their success or abilities. Even high-functioning adults with ADHD symptomatology report experiencing heightened levels of judgment from others (Sedgwick et al., 2019).

Although adults with ADHD symptoms often encounter challenges in interpersonal relationships, social support can enhance functioning for this population (Ginapp et al., 2023). According to Segrin (2001), when individuals with ADHD symptoms face social rejection, they are more likely to respond by adopting avoidant behaviors. Additionally, they are prone to experience heightened psychological distress (Paulson et al., 2005).

4.3. The Mediating Role of Mental Well-Being in the Link Between ADHD and RS

Increased RS is associated with a lower quality of life, diminished social support, and reduced psychological well-being (Ng & Johnson, 2013). Furthermore, it has been found to predict the progression and outcome of depression, exhibiting a positive association with a higher prevalence of depressive symptoms (Ayduk et al., 2000; De Rubeis et al., 2017). While mental disorders have received extensive attention to date, there is a scarcity of published research on factors that promote positive adaptation and well-being in individuals with high RS.

In recent years, there has been a growing interest in wellbeing research (Rusk & Waters, 2015). Over this period, the concept of mental well-being has evolved from being solely defined as an absence of ill-being, focusing exclusively on positive individual functioning without accounting for emotions (Rose et al., 2017), to encompassing a state of flourishing (Keyes, 2007). Additionally, authors from the field of positive psychology emphasize the importance of assisting individuals in maintaining meaningful lives and achieving satisfaction. However, the mere elimination of negativity does not necessarily usher in positivity (Seligman et al., 2005).

Zábó et al. (2022) proposed the Maintainable Positive Mental Health Theory (MPMHT), an innovative framework building upon classical models and contemporary theories of positive psychology, which conceptualizes mental health as a function of personal capabilities such as resilience and creative/executive competencies. These attributes empower individuals to strike a balance with their external environment, thereby promoting personal growth. The components also ensure consistent functioning within an individual (through self-regulation) and facilitate the balance between positive and negative emotions (using coping and savoring strategies). The efficient interplay of these factors culminates in global well-being, a multifaceted construct encompassing personal and social dimensions.

Notably, the MPMHT recognizes the critical role of social acceptance, making it potentially valuable for understanding and supporting adults with ADHD symptoms, who often experience heightened sensitivity to rejection.

In relation to RS, *resilience* acts as a mediator (Sart et al., 2016), enabling individuals to harness their mental resources to preserve their well-being in the face of stress and adversity. Higher resilience correlates with a more rapid recovery from stressful situations, including potential social rejections (Verdolini et al., 2021). *Self-regulation strategies* like delayed gratification and cognitive-attentional cooling can also help individuals with ADHD symptoms manage their emotional reactions to rejection, particularly in social situations

(Ayduk et al., 2000). These strategies allow individuals to pause, assess the situation calmly, and respond more effectively, reducing the negative impact of the perceived rejection. *Creative and executive efficiency* refers to the ability to effectively generate diverse solutions to problems, both personally and socially (Zábó et al., 2022). By applying creative thinking to social interactions, individuals with ADHD symptoms can develop unique strategies to navigate potential rejections, minimizing their emotional impact (Kraines & Wells, 2017). Finally, *global well-being* encompasses not just psychological health but also spiritual and social dimensions (Zábó et al., 2022). This includes factors like social acceptance, self-actualization, and positive societal contributions. Individuals with higher levels of global well-being tend to view life and social interactions more positively (Lench & Bench, 2012). This positive outlook can alter the perception of social cues (Hecht, 2013), potentially mediating the perception of rejection.

4.4. The Role of Savoring Capacity in the Link Between ADHD and RS

Beyond well-being, resilience, self-regulation, and creative efficiency as potential mediators between ADHD symptoms and social functioning (Zábó et al., 2022), a fifth element may play a unique role in this relationship. *Savoring*, the ability and capacity to actively seek out, appreciate and hold onto positive experiences and pleasures (Bryant & Veroff, 2007; Bryan et al., 2022) is a prerequisite in the MPMHT framework (Zábó et al., 2022). Savoring is a key process within the broaden-and-build theory of positive emotions, which posits that positive emotions expand one’s awareness and inspire a broader range of thoughts and actions. This expansion leads to the acquisition of new experiences, enhanced abilities, and stronger social ties, all of which contribute to greater health and relationship satisfaction. Furthermore, positive emotions can act as a cushion against the impact of negative emotions (Fredrickson, 2001; Smith & Bryant, 2016). This aligns with the Dynamic Model of Affect (DMA), suggesting that individuals have a wider range of emotional experiences in the absence of stress, with positive and negative emotions operating more independently (Walter & Bruch, 2008).

In addition to its direct association with well-being (eg, Bryant, 2003; Wood et al., 2003), savoring is further proposed as a moderator variable (Bryant & Veroff, 2007; Chadwick, 2012; Costa-Ramalho et al., 2015). That is, empirical research suggests that savoring acts as a moderating factor in various situations, from buffering the impact of traumatic experiences (Sytine et al., 2018) and moderating the link between negative emotions and suicidal behaviors (Klibert et al., 2019) to influencing the relationship between

activity engagement and aspects of well-being, including life satisfaction, depression, loneliness, and sense of purpose (Smith et al., 2020). In the MPMHT framework, savoring belief refers to people's perceived capacity to savor positive life experiences. Although in the case of ADHD symptoms, sustaining attention to positive experiences often seems challenging (Segal, 2023), savoring could counterbalance the negative emotions associated with Müller et al. 3 RS. While individuals with ADHD symptoms experience more stress and negative emotions during their university years than their peers without ADHD (Sahmurova et al., 2022), we anticipate that their capacity to savor may play a crucial role in experiences of rejection.

A previous study found that ADHD symptoms may directly predict RS (Hussain, 2024). However, given that RS likely stems from prior rejection by peers and parents (Gardner et al., 2020), rather than low capacity to savor, we proposed it would moderate rather than mediate (directly explain) the link between ADHD symptoms and RS. In particular, we expected higher levels of savoring to weaken or eliminate the association between ADHD symptoms and RS, while lower levels of savoring would strengthen this association. By enhancing the frequency and intensity of positive emotions, individuals with ADHD symptoms might experience a more balanced emotional state, potentially weakening the connection between the symptoms and RS.

Based on the related findings from the literature, the aim of our study was to (a) confirm a direct link between college students' ADHD symptomatology and RS; (b) investigate whether the positive psychological constructs, wellbeing, creative and executive efficiency, self-regulation, and resilience, mediate the relationship between ADHD symptomatology and RS; and (c) to determine if savoring capacity moderates the relationship between the ADHD symptomatology and RS. Given the absence of a well-established theoretical framework regarding the potential predictive or moderating effects of savoring capacity in this relationship (Costa-Ramalho et al., 2015), the present study remains exploratory.

4.5. Method

4.5.1. Study Design and Participants

Between February and May of 2023, we conducted a cross-sectional study using an online Typeform survey. The study targeted all university students in Hungary by disseminating the survey through Neptun, a unified platform adopted by all Hungarian universities. To enhance reach, the questionnaire was also shared in Facebook groups popular among Hungarian

students, particularly those focusing on research, psychology, and ADHD. Participation was voluntary, and no compensation was offered. To be included, participants had to (a) be over 18 years of age, (b) be active students at a Hungarian university, (c) give written informed consent, (d) report no difficulties in understanding the questions, and (e) admit to have responded truthfully and carefully. Application of these criteria did not lead to any exclusions. A total of 304 students, 237 (78%) female and 65 (21.4%) males, enrolled in higher education institutions in Hungary, participated in the study. Their ages ranged from 18 to 35 years (M = 24.38, SD = 4.39).

Hungary's universities and colleges award degrees through a well-established three-tier system aligned with the European Qualifications Framework (EQF). Bachelor's programs (EQF Level 6) typically take 6–8 semesters (3-4 years) to complete. Students can then pursue optional master's programs (EQF Level 7) lasting 2–4 semesters (1-2 years). A unique feature of the system is the undivided one-tier master's program, combining bachelor's and master's coursework into a single 5- to 6-year direct program for a master's degree in specific fields like medicine or teacher training. Finally, doctoral degrees (EQF Level 8) are pursued as 4-year postgraduate programs. In our sample, 56.6% (n=175) of the participants were in a bachelor's program, 21.7% (n=66) in an undivided one-tier master's program, 13.8% (n=42) in doctoral studies, and 6.9% (n=21) were pursuing a master's degree. Most were full-time students (71.4%, n=217), while 26.3% (n=80) were part-time, and a minority were distance learners (2.3%, n=7). In the survey, participants could disclose learning disabilities/difficulties or decline disclosure. None of the participants reported having a learning disability (or chose to decline to answer); 11 participants (3.62%) reported a previous diagnosis of ADHD. All participants identified Hungarian as their primary language.

We strictly followed the principles of the Declaration of Helsinki and Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals formulated by the International Committee of Medical Journal Editors (ICMJE). The study procedures received approval from the Institutional Review Board of the University of Szeged, Doctoral School of Education (7/2021). After providing informed consent, participants shared demographic details and completed the survey. Notably, the participants responded to all items on the respective scales; no data were missing. The study materials were administered in the Hungarian language.

4.5.2. Measures

Attention-Deficit Hyperactivity Disorder. ADHD symptoms were screened using the Adult ADHD Self-Report Scale (ASRS-v.1.1), developed by the World Health Organization (WHO) (Kessler et al., 2005). The scale, which can be completed in a self-reported manner, encompasses 18 items (eg, “How often do you fidget or squirm with your hands or feet when you have to sit down for a long time?”), each to be responded to on a five-point Likert scale indicating the frequency of the experienced symptoms from 0 (never) to 4 (very often). The primary goal of the ASRS-v1.1 is to serve as a reliable tool to identify adults who may need further assessment for ADHD. The scale is not intended to diagnose ADHD but to serve as a first step in the screening process. Total scores for the 18 items can range from 0 to 72. Higher scores reflect higher degrees of ADHD symptoms. In line with previous 4 Learning Disabilities Research & Practice 0(0) studies (eg, Hawi & Samaha, 2024; Garcia Pimenta et al., 2024), the current study assessed ADHD symptoms using the ASRS total scores, demonstrating good internal consistency (Cronbach’s $\alpha = .87$). In addition to the total score, the first six items of the ASRS function as an effective screening tool for ADHD risk. While the original dichotomous scoring method (assigning 1 point for exceeding the threshold) has been updated, research suggests the 0–24 scale is more robust and better suited for studying ADHD prevalence and related factors compared to the 0–6 system (Kessler et al., 2007). This revised scale classifies scores into four categories: 0–9 (low negative risk), 10–13 (high negative risk), 14–17 (low positive risk), and 18–24 (high positive risk).

Mental Well-Being. The Mental Health Test (Zábó et al., 2022) was used to assess participants’ comprehensive picture of positive psychological well-being. The questionnaire consists of 18 items with five subscales. Three questionnaire items are suitable for measuring well-being (eg, “Joy is present more than sorrow in my everyday life.”), three assess savoring (eg, “I like to store memories of fun times that I go through so that I can recall them later.”), five items measure creative and executive efficiency (eg, “Others describe me as a problem solver.”). Three items assess self-regulation (eg, “I am impulsive: I act first and think second.”), and the final subscale made up of four items focuses on resilience (eg, “It does not take me long to recover from a stressful event.”). The items are responded to on a six-point Likert scale ranging from 1 (does not agree at all) to 6 (agrees completely). The internal consistency values of the subscales were above .70, more precisely: .89 for well-being, .76 for creative and executive efficiency, .70 for resilience, .71 for self-regulation, and .75 for savoring.

Rejection Sensitivity. The Rejection Sensitivity Questionnaire (A-RSQ; Berenson et al., 2009) assesses participants' cognitive-emotional disposition to anticipate rejection anxiously. The A-RSQ comprises 18 scenarios presenting potential interpersonal encounters with a likelihood of rejection from an important figure (eg, "You ask your parents or another family member for a loan to help you through a difficult financial time."). Participants are asked to assess their anxiety levels regarding the probable outcome of each presented situation. Additionally, they evaluate the perceived probability that the person of significance in each scenario would react with rejection. The cumulative RS score is calculated by the RS score for each situation by multiplying the rejection concern by the level of rejection expectancy. Scores can range from 18 to 432. Higher scores indicate a higher level of RS. Cronbach-α value =.84 in the current study.

4.5.3. Data Analysis

First, descriptive and correlational analyses were performed using the IBM Statistical Package for Social Sciences (SPSS, version 26.0.). Second, we conducted multiple mediators with a moderator analysis (Model 5) using Preacher and Hayes (2008) PROCESS macro v4.1 for IBM SPSS. The model used 5000 resamples through bootstrapping confidence intervals (CIs) to determine the significant effects. We followed Hayes' (2022) recommendations, and the bias corrected 95% CIs were selected. In this case, the indirect effect is significant if the CIs do not include 0. The conditional indirect effects were evaluated at three levels: one standard deviation above the sample mean, one below the sample mean, and the sample mean itself. Before conducting the path analyses, all continuous variables were standardized.

4.6. Results

4.6.1. Descriptive Statistics and Bivariate Relationships

Based on the ASRS screening tool, 23.9% (n=89) of participants scored in the low negative, 35.9% (n=109) in the high negative, 22.7% (n=69) in the low positive, and 12.2% (n= 37) in the high positive category for ADHD risk. Before the mediation and moderation analysis, we examined the correlations between all variables, as detailed in Table 7. The ADHD symptom score demonstrated a positive correlation with RS scores (r=.46, $p < .01$). This suggests that as ADHD scores increased, RS scores also tended to increase. However, ADHD scores showed a significant negative correlation with measures of well-being (r =-.34, $p < .01$), indicating that higher ADHD scores were associated with lower well-being. Similarly, there were negative correlations with creative and executive efficiency (r =-.18, p <

.01), self-regulation (r =-.23, p < .01), resilience (r =-.32, p < .01), and savoring (r =-.26, p < .01).

Further, the RS scores showed a significant negative correlation with well-being (r =-.55, p < .01), creative and executive efficiency (r=-.36, p < .01), self-regulation (r =-.25, p < .01), resilience (r =-.43, p < .01), and savoring (r=-.44, p < .01). Well-being, in turn, showed a positive correlation with creative and executive efficiency (r=.36, p < .01), self-regulation (r=.16, p < .01), resilience (r =.45, p < .01), and savoring (r =.57, p < .01). Creative and executive efficiency also positively correlated with resilience (r =.29, p < .01), and savoring (r=.38, p < .01). Lastly, there was a significant positive correlation between resilience and savoring (r=.38, p < .01). Finally, although the data indicated a positive correlation between creative and executive efficiency and self-regulation (r=.08, p > .05), it was not statistically significant.

The skewness and kurtosis values of the measured variables fell within the acceptable range of ± 1.0 (Hair et al., 2022), suggesting that the data distribution was approximately normal. Furthermore, variance inflation factors ranging from 1.07 to 1.66 and tolerance values between 0.60 and 0.71 indicated no substantial multicollinearity among the independent variables. The data also met the assumption of independent errors (Durbin–Watson = 1.93), and homoscedasticity was confirmed by the Breusch–Pagan test ($\chi^2 = 6.25$, p = 0.09). Based on these results, all the correlated variables were included in the further analysis.

Table 7

Intercorrelation Between Measured Variables for the Full Sample (N = 304)

Variables	Min.	Max.	*M*	*SD*	Skewness	Kurtosis	1	2	3	4	5	6
1. ADHD scores	2	63	32.12	11.74	0.388	-0.076	–					
2. RS scores	18	363	96.70	53.69	0.872	0.708	.46**	–				
3. Well-being	3	18	11.47	3.94	-0.277	-0.676	-.34**	-.55**	–			
4. CE efficiency	6	30	20.82	4.62	-0.234	-0.250	-.18**	-.36**	.36**	–		
5. Self-regulation	3	17	9.54	3.48	-0.171	0.791	-.23**	-.25**	.16**	.08	–	
6. Resilience	3	13	7.35	2.67	0.255	-0.665	-.32**	-.43**	.45**	.29**	.27**	–
7. Savoring capacity	3	18	12.51	3.69	-0.462	-0.538	-.26**	-.44**	.57**	.38**	.14**	.38**

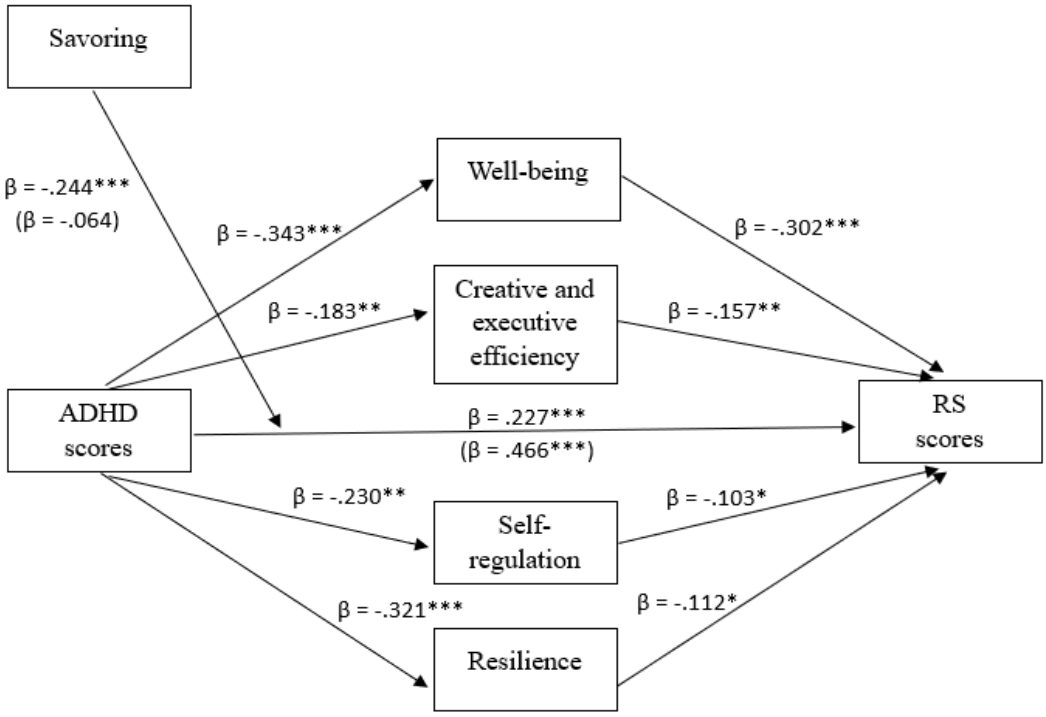
Note. CE efficiency = Creative and executive efficiency, RS = Rejection sensitivity. ***p* < .01.

4.6.2. Mediation and Moderation Analyses

We conducted multiple mediators and a moderator analysis to assess the role of positive mental health constructs in the relationships between ADHD scores and RS. The mediator variables included well-being, resilience, self-regulation, and creative and executive efficiency competence. Furthermore, the model explored the direct effect of ADHD symptoms on RS and whether it was mediated or moderated by savoring capacity.

Figure 3

Multiple Mediators and a Moderator Model



Note. Rejection sensitivity serves as the outcome variable, ADHD symptoms as a predictor, well-being, creative and executive efficiency, self-regulation and resilience as mediators, and savoring as moderator.

First, we assessed the relationships between ADHD scores and each of the mediators. ADHD scores were significantly associated with each mediator. The analysis revealed that an increase in ADHD scores was associated with a decrease in all four mediators. ADHD scores were negatively associated with well-being (β=-.343, $p < .001$), creative and executive efficiency competence (β=-.183, $p < .01$), self-regulation (β=-.230, $p < .01$), resilience (β=-.321, $p < .001$), indicating that as ADHD scores increased, scores on these variables tended to decrease.

Next, the direct effect of ADHD scores on RS scores was assessed. The analysis revealed a significant positive association (β=.466, p < .001), suggesting that as ADHD scores rise, there is a similar increase in RS scores. The relationships between the mediator variables and RS scores were also examined. Well-being (β=-.302, p < .001), creative and executive efficiency (β=-.157, p < .01), self-regulation (β= -.157, p < .01), and resilience (β=-.112, p < .05) had a direct effect on the outcome variable. These findings imply that lower scores on these variables were associated with higher RS scores.

Mediation Effect. Finally, we explored the indirect effects of ADHD scores on RS scores through the mediators. These indirect effects, represented by the total of the individual indirect effects via well-being (B=.103), creative and executive efficiency competence (B=.028), self-regulation (B= .023), and resilience (B =.036), indicate that these variables serve as pathways in the link between ADHD symptom severity and RS scores. Savoring capacity did not meet the criteria for mediation as defined by Baron and Kenny (1986) due to a non-significant beta coefficient (β=-.035, p =.526). After controlling for the measured variables, ADHD scores demonstrated a significant effect of .227 (p < .001) on RS scores, indicating partial mediation. Based on 5000 bootstrap samples, all direct and indirect paths were significant (except for savoring capacity as a mediator), as the 95% bias-corrected CIs did not include zero in each case (see Table 8).

Table 8

Point Estimates and 95% Confidence Intervals for the Indirect Effect of ASRS Scores on Rejection Sensitivity Through the Mediator Variables

Mediator	Point estimate	*SE*	Lower BC 95% CI	Upper BC 95% CI	*p*
Total indirect effects	.192	.039	.120	.273	< .001
Well-being	.103	.029	.051	.164	< .001
Creative and executive efficiency	.028	.013	.006	.057	< .001
Self-regulation	.024	.012	.003	.051	< .05
Resilience	.036	.020	.001	.080	< .05
Savoring	.006	.013	-.018	.090	.499

Note. BC = bias corrected; CI = confidence intervals; 5,000 bootstrap samples.

Moderation Effect. The moderation analysis revealed that savoring capacity significantly moderated the relationship between ADHD and RS (β=−.244, p < .001). The buffering impact was significant at low (−1 SD) and mean levels of savoring, but diminishes at the higher level (+1 SD), as presented in Table 9. For students who reported low and mean levels of savoring, the relationship between ADHD and RS was stronger and significant. For students with high levels of savoring, on the other hand, the relationship between ADHD and RS was weaker and insignificant. The overall model explained 50% of the variance in the RS scores (R2 =.508, F=43.787, p < .001). Figure 3 provides the final model, incorporating both direct and indirect effects.

Table 9

Point Estimates and 95% Confidence Intervals for the Moderating Effect of Savoring Capacity on the Relationship Between ADHD and Rejection Sensitivity

			95% CI		
	Estimate	*SE*	LL	UL	*p*
Low (-1SD)	0.472	0.057	0.359	0.584	< .001
Mean	0.227	0.045	0.138	0.316	< .001
High (+1 SD)	-0.017	0.063	-0.142	0.107	.783

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

4.7. Discussion

This study examined the underlying mechanisms in the link between ADHD symptoms and RS among college students, with particular emphasis on their mental well-being. As illustrated, our results indicated a direct positive link between ADHD symptoms and RS. This relationship can be partially explained by inadequate levels of well-being, creative and executive efficiency, self-regulation, and resilience. Additionally, savoring capacity acted as a moderator between these two constructs. Students with low levels of savoring capacity had a stronger connection between ADHD symptoms and RS.

4.7.1. The Mediating Role of Positive Psychological Constructs

The fundamental constructs of the MPMHT mediated the relationship between ADHD symptoms and RS scores and partially explain the observed connection. Previous studies have linked RS and reduced well-being (Efeoglu & Sen, 2022); however, the influence of ADHD symptoms within this context has remained unexplored.

First, well-being had the most substantial mediating effect, suggesting that ADHD symptoms might lead to reduced feelings of well-being (Fuller-Thomson et al., 2022). Individuals with ADHD symptoms often encounter social and emotional challenges that can affect their overall sense of well-being, subsequently heightening their awareness of signs of rejection. Second, creative and executive efficiency plays a pivotal role in this relationship. While individuals with ADHD symptoms may exhibit a rich diversity of creative thoughts (Girard-Joyal & Gauthier, 2022), they may struggle to filter, refine, or execute them efficiently due to executive function challenges. This inefficiency in managing creative thoughts could lead to heightened sensitivity to rejection, as these individuals might perceive their ideas as frequently dismissed or misunderstood. Reduced scores in creative and executive efficiency may lead to perceiving problems as threats, resulting in a tendency to avoid rather than proactively address challenges (Kraines & Wells, 2017). Third, resilience acts as a mediator. Given that individuals with ADHD symptoms frequently face setbacks and challenges that can diminish their capacity to rebound from adverse situations (Freire et al., 2021), individuals may develop a heightened sensitivity to negative feedback, as they may lack the adaptive mechanisms to recover from such experiences. Lastly, self-regulation, often compromised in ADHD (Christiansen et al., 2019), can lead to impulsivity and difficulties in managing emotional responses, further reducing its protective effect on sensitivity to rejection.

Although the proposed mediators provide a comprehensive framework for understanding the interaction between ADHD symptoms and RS, and explained a substantial proportion of the variance in RS scores in the current study, full mediation was not achieved. The partial mediation observed, along with existing literature (Hussain, 2024; Oti et al., 2024), suggests that other factors, such as depression, anxiety, and psychological flexibility, warrant further research in this context.

4.7.2. The Moderating Role of Savoring Capacity

Savoring capacity plays a crucial moderating role in the relationship between ADHD symptoms and RS. While prior research has highlighted the moderating role of savoring capacity on health and life satisfaction (Smith & Bryant, 2016), the specific relationship between ADHD symptoms and savoring capacity, especially concerning RS, has not been explored to the best of our knowledge. Our data indicate that at low savoring levels, the connection between ADHD symptoms and RS was most pronounced. This suggests that individuals with ADHD symptoms may be more prone to feelings of rejection when they have

difficulty savoring positive moments. At a medium savoring level, the effect was reduced. Interesting, at high savoring levels, the effect was not significant.

These findings may be understood by examining attention, emotion, cognitive aspects, social behaviors, and selfesteem. One of the hallmark symptoms of ADHD is difficulty with sustained attention (Segal, 2023). Savoring requires one to be present and attentive to the current moment, especially positive moments (Gregory et al., 2023). When individuals with ADHD symptoms struggle with maintaining attention to positive experiences, they might miss out on the emotional benefit of those experiences. This might make negative experiences, like perceived rejections, more salient and impactful. Savoring involves experiencing positive moments and reflecting on them (Gentzler et al., 2016), which can help in the cognitive reframing of negative experiences. An individual with a strong savoring capacity might recall a positive interaction to counterbalance a negative one. If this capacity is diminished, however, as it might be in some individuals with ADHD symptoms, they could struggle with this reframing, leading to a heightened sensitivity to rejection.

Savoring can also contribute to perceived self-esteem and validation (Goodall, 2015). Consistently missing out on the opportunity to savor positive experiences might lead to feelings of low self-worth. This, combined with ADHD symptoms, might make individuals more sensitive to external validation and, consequently, more sensitive to perceived rejections. Our findings point to the protective role of strong savoring abilities against feelings of rejection in college students with ADHD symptoms, emphasizing the potential benefits of interventions focused on enhancing this ability.

4.7.3. Practical Implications

Universities are currently facing a surge in student demand for mental health services, outpacing enrollment growth. This mirrors the rising prevalence of mental health issues among young adults. Consequently, institutions of higher learning have the potential to become the forefront for mental health promotion, prevention, and early intervention (Duffy et al., 2019). This aligns with the recommendations of Solmi et al. (2022), who advocated for integrated models that address mental health needs within the university community, encompassing both at-risk students and those already experiencing mental health challenges. Cognitive-behavioral therapy (CBT) programs are a common intervention for university students with ADHD symptoms. These programs address such areas as executive functioning, co-occurring conditions like depression and anxiety (Anastropoulos et al., 2021; Solanto & Scheres, 2020), academic skills and coping mechanisms, stress management (Bettis et al.,

2017; Van der Oord et al., 2020), and overall ADHD symptoms and life functioning (Eddy et al., 2021). While mindfulness-based and neurofeedback approaches are less common (eg, Harris et al., 2019), most programs emphasize organizational skills and time management (Hartung et al., 2022; LaCount et al., 2018). A systematic review by Álvarez-Godos et al. (2023) examining these interventions found the greatest improvements were in attention, executive functioning, anxiety, and organization. Moderate improvements were seen in study skills, self-concept, and depression, with smaller effects on stress, academic performance, and hyperactivity. Interestingly, behavior regulation showed the least improvement.

Although positive coping programs demonstrably reduce negative emotions, evidence for mindfulness-based and relaxation-based programs improving positive emotional outcomes is mixed (Klibert et al., 2022). The results of the present study are highly promising and shed light on the potential of savoring-based psychosocial interventions. The novel Behavioral Activation plus Savoring (BA +S) intervention (Kumar et al., 2024) represents this approach, supporting Klibert et al.'s (2022) work on savoring exercises as a preventive strategy against social stressors.

It is worth noting that savoring interventions have not been specifically developed for students with ADHD symptoms. We suggest that interventions focusing on cognitive imagery, memorabilia, the Three Good Things, increasing self-awareness of personal achievements, positive imagination, noticing pleasurable features in their environment, structured photography exercises, and reflecting on recent acts of kindness could nurture the capacity for savoring and serve as a first-line intervention for this population (Parks & Schueller, 2014). A starting point in this process would be to incorporate these elements into existing interventions to enhance their effectiveness and improve the modest results currently seen in emotional and behavior regulation.

4.7.4. Strengths and Limitations

This study has several key strengths, including the use of the MPMHT as a novel framework for understanding the connection between ADHD symptoms and RS. It also offers a potential explanation of how factors of mental well-being may play a role in this relationship either as a mediator or a moderator. Moreover, our investigation of these associations within the Hungarian context adds a novel dimension to the research. However, this study is not without limitations.

First, our data are derived from self-reports. Although the ASRS scale has been validated for screening purposes (Farcas et al., 2018; Kessler et al., 2005), it cannot replace

clinical diagnoses. While the recruitment materials did not explicitly mention the study's specific purpose to avoid self-selection bias, we distributed the questionnaire in groups frequented by students interested in ADHD and psychology. This approach poses a limitation as it may have resulted in a relatively higher proportion of students with high levels of ADHD symptoms in our sample. In our study, 31.9% of the participants met the criteria for ADHD risk (low and high positive). Our findings align with those of Farcas et al. (2018), who reported similar unweighted prevalence rates of ADHD risk (37.3%) in Hungarian university students using the same ASRS-v1.1 screening tool. Furthermore, the 2–3 years long waiting lists for ADHD screening in Hungarian hospitals (Kilencz et al., 2024) could contribute to a higher prevalence of undiagnosed students (or individuals awaiting diagnosis) within our sample.

Additionally, several factors may limit the generalizability of our findings. These include the relatively small sample size, the cross-sectional design, the absence of data on participants' academic majors, and the disproportionately higher representation of female participants. With regard to the latter, our preliminary work did not reveal significant gender differences in the measured variables. While research suggests males are diagnosed with ADHD more frequently during childhood, this disparity appears to narrow by adulthood, with diagnoses becoming more balanced (Babinski, 2024). Although our findings are in line with this statement, the gender disparity in our sample cannot show ample evidence to confirm it; a more equal gender distribution with an exact diagnosis would be necessary for further justification. Anyway, the surplus of female respondents in our survey might be due to the observed tendency of women to participate more frequently in surveys than men (Becker, 2022). Since data are retrospective, reports of emotional intensity may be biased, potentially underestimating or overestimating actual experiences. Additionally, current mood can influence memories (Costa-Ramalho et al., 2015).

Future research on savoring experiences should employ longitudinal approaches with real-time assessments to address these limitations. Despite the extensive research on ADHD and savoring separately, there is a gap in the literature regarding the specific relationship between the two constructs. Future studies could explore how ADHD symptoms may impact an individual's ability to savor positive experiences and how this, in turn, affects their overall well-being and quality of life. While using validated self-report instruments in this study facilitates accessibility and replication with diverse international samples, it is important to acknowledge the limitations of focusing solely on savoring capacity. Further in-depth research is needed to fully understand the role of savoring experiences, processes, and strategies in this

relationship. Despite these limitations, our study contributes significantly to our understanding of ADHD symptoms without pathologizing them which is especially relevant for university student populations.

4.8. Conclusion

This study contributes to the growing yet still limited body of research focusing on college students with ADHD symptoms. The results have shown that well-being, creative and executive proficiency, self-regulation, and resilience explain a significant portion of the association between ADHD symptoms and RS. Notably, the findings suggest that savoring – the ability to appreciate and amplify positive experiences – significantly moderates this connection, resulting in lower sensitivity to rejection. The primary takeaway of the study is that ADHD symptoms can increase RS due to compromised mental well-being. To counter this, interventions should focus on mental health promotion to support resilience and emotional well-being, and thereby help individuals with ADHD symptoms to navigate social challenges more effectively. The findings underscore the potential of incorporating interventions based on the MPMHT to effectively prevent the negative outcomes ADHD symptoms may spark. Such integration could improve current time management, planning, and CBT initiatives and pave the way for an innovative, strengths-based approach toward the target population.

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CHAPTER 5. GENERAL DISCUSSIONS AND CONCLUSIONS

5.1. General discussion

This dissertation's findings advocate how ADHD symptoms among university students profoundly affect both academic and emotional outcomes. The three studies are closely connected, each building upon the insights of the previous one to form an in-depth understanding of ADHD symptoms' impact on university students. *Study 1* focused on the behavioral aspects of ADHD, specifically procrastination, boredom and smartphone use, which were identified as key indicators of ADHD symptoms. The literature suggested that excessive smartphone use could be tied to loneliness, which raised the question of how these behaviors might influence longer-term outcomes. This led to *Study 2*, where we shifted focus to explore the long-term effects of ADHD symptoms, specifically examining dropout intention. Drawing from literature that highlighted the role of strained relationships in academic disengagement, we examined how ADHD symptoms, depression, and resilience influenced students' intentions to leave university. Finally, in *Study 3*, we further explored the relationships between ADHD symptoms and social challenges. Guided by the literature on rejection sensitivity and its link to social difficulties, we assessed how this sensitivity impacts emotional well-being. The results of all three studies, summarized in a table, can be found in Appendix A.

The studies conjointly suggest that ADHD symptoms contribute to depression, rejection sensitivity and low academic and general resilience, all of which heighten dropout intentions. However, the research also offers insight into protective factors and adaptive strategies that could ease these negative outcomes. For example, distinguishing between passive procrastination and active procrastination can be an empowering approach. While passive procrastination is generally maladaptive, active procrastination — intentionally delaying tasks to optimize pressure and productivity — can be reframed as a constructive strategy rather than a source of shame.

Furthermore, the research calls attention to self-efficacy and savoring as key elements that help neutralize the impact of ADHD symptoms. Higher levels of self-efficacy enable students to approach academic tasks with confidence, while savoring enhances their ability to focus on positive experiences, reducing stress and promoting well-being. Future interventions in Hungary should consider incorporating strategies to build self-efficacy and savoring skills, as these could foster resilience and improve both academic persistence and overall quality of life for students with ADHD.

Collectively, these results suggest a pathway forward that emphasizes emotional support and savoring-building for ADHD students, rather than solely focusing on organizational, time management, note-taking and planning skills.

5.2. General limitations and future directions

The limitations within the present studies are primarily due to their cross-sectional designs and reliance on self-report measures, which can introduce biases. Additionally, the studies' sample demographics limit generalizability to a broader university population. We must acknowledge that many of our participants exhibited ADHD symptoms, with only a small percentage formally diagnosed with the disorder. In our studies, specific numbers of diagnosed participants were as follows: in the first study, 3.70% (n = 15) were formally diagnosed; in the second study, 2.90% (n = 12); and in the third study, 3.62% (n = 11) participants had a formal diagnosis. This is likely influenced by the 2-3 year waiting lists for ADHD assessments in Hungary. Another limitation is the potential variability introduced by combining data from clinical ADHD patients and general population samples with individuals screening positive for ADHD symptoms. While the focus of this research was on ADHD symptoms — as those who do not meet the full diagnostic criteria can still experience notable functional impairments —, future research on ADHD in Hungarian university students could replicate these findings with samples of formally diagnosed individuals and account for the use of ADHD medication (e.g., lisdexamfetamine dimesylate, methylphenidate, atomoxetin) or other medications for comorbid conditions. The similarity of samples across the studies, stemming from shared recruitment methods within higher education institutions, enhances consistency but limits generalizability. Broadening future research to encompass more diverse populations would provide a more comprehensive view into the challenges faced by students with ADHD. Integrating objective behavioral measures, such as eye tracking during performance tasks, could also enhance the reliability of self-reported data, providing a more nuanced understanding of the difficulties (Lev et al., 2022).

This study did not specifically differentiate between attention problems and hyperactivity within ADHD symptoms. While such a breakdown could provide additional knowledge, earlier feedback advised against overemphasizing these subdomains to maintain the study’s focus on ADHD symptoms as a whole. Similarly, while socioeconomic status (SES) can influence educational outcomes, it was not included in our analyses as it falls outside the scope of our primary goal: identifying modifiable predictors of dropout intention. However, its potential influence should not be overlooked, and future research could explore

the role of SES in shaping these relationships. Additionally, while including the year of graduate study would have enhanced the characterization of our sample, it was not addressed in detail here. Lastly, academic performance metrics, such as grades or GPA, were not included as they are extensively studied in ADHD research and are not directly targetable through intervention. Instead, our focus was on underexplored psychological and behavioral factors that could inform actionable interventions.

Future research could also prioritize longitudinal designs to assess how ADHD symptoms and associated psychological factors evolve over time. It's also important to consider how ADHD affects individuals beyond the classroom, particularly in the workplace. Recent research shows that individuals with ADHD often struggle in workplace settings after completing higher education. A study by Fuermaier et al. (2021) found that symptoms of inattention are strongly associated with work-related problems (particularly in terms of not meeting personal standards and perceived potential), while Nagata et al. (2019) demonstrated that ADHD symptoms can modify the relationship between psychosocial work environments and health outcomes, such as psychological distress and work engagement.

Research could also examine how educators' knowledge and attitudes toward ADHD and other learning-related conditions could improve our approach to supporting these students. Expanding this work to include cultural comparisons could also offer understanding of the needs of diverse student populations.

The data for this dissertation were collected during the COVID-19 pandemic, a time of immense disruption and uncertainty. Remote education replaced structured schedules with unbounded flexibility, forcing students to self-manage in ways that likely amplified the challenges of ADHD symptoms. Procrastination — both passive and active — may have been intensified by the absence of traditional routines, creating an environment where self-discipline was constantly tested. Social isolation, another hallmark of the pandemic, likely deepened the relational struggles faced by students with ADHD symptoms. Rejection sensitivity, already a significant challenge, may have been heightened by the loss of peer interaction and support networks. Depression, observed as a mediating factor in dropout intention, may also reflect the broader emotional toll of this period, compounding the difficulties inherent in ADHD symptoms.

While these influences add nuance to the findings, they do not diminish their validity. Instead, they showcase the struggles faced by students during a time of global upheaval, stressing the need for interventions that foster structure, connection, and resilience, both in stable and uncertain times.

5.3. Practical implications

The findings offer practical implications for university support services, particularly in Hungary, where mental health resources for students with ADHD symptoms remain scarce. In international practice, higher education institutions often offer screening for ADHD as part of entry assessments even before studies begin. This ensures that support for affected students is readily available once they enroll (Aluri et al., 2024). Academic programs include short-term coaching sessions lasting a semester — such as in West Virginia University's MindFit program. Mental health support often takes the form of tutoring programs led by trained peer mentors, with bi-weekly meetings. At Southern Oregon University, the U-CAM program offers a year-long, weekly session structure that begins with goal setting and continues with assistance in development of self-awareness and confidence for students with ADHD (Kendal, 2018).

The University of Arizona's ADHD and Life Coaching service affirms building a responsible, independent adult learner mindset, focusing on motivational techniques. This program aims to enhance life quality rather than just academic performance. Additionally, Northeastern University's LDP program provides one-on-one sessions that focus on the role of being a university citizen, encouraging participation in research and scientific discourse, which fosters self-regulated learning and essential skills (Hannah, 2024). These examples illustrate that higher education institutions, beyond their economic role, play a significant part in social responsibility by supporting adults with special educational needs (SEN) in their learning journeys (Barakonyi & Pankász, 2019).

When examining both domestic and international practices, it becomes apparent that there is a lack of impact assessments on how ADHD-specific services influence dropout rates. Instead, the focus is often on factors that influence the phenomenon, such as improving self-efficacy, motivation, resilience, time management, and integration skills.

Cognitive Behavioral Therapy (CBT) has been proven effective in treating ADHD symptoms, particularly in group settings (Ingibergsdóttir et al., 2024). However, equal opportunity service providers are not responsible for offering psychotherapy. Instead, they frequently use counseling techniques influenced by time-limited methods from therapeutic schools (Szemán & Karner, 2017). Counseling based on CBT principles can help students with ADHD manage emotional regulation, boost motivation, increase perceived self-efficacy, and reduce anxiety (Álvarez-Godos et al., 2023). This approach, focusing on coping mechanisms and problem-solving, could be a promising addition to current practices in Hungary. Group-based interventions also merit attention in the array of services aimed at

addressing ADHD challenges (Nordby et al., 2021). In group settings, students could formulate, and track plans related to university tasks and formulate goals. These, resilience-based interventions promote social support and planning behaviors, which have proven effective in reducing perceived stress (Hamilton et al., 2021).

Expanding services to include a peer mentoring program is another potential development. University mentoring systems positively impact students' professional development, persistence, and academic success (Aguilera Rodríguez et al., 2024; Coles, 2011; Williams et al., 2024). For students with ADHD, the presence of a trained mentor has been shown to be an effective intervention (Kreider et al., 2020). Such a mentoring relationship can support students' university integration and enhance their experience of social support. Universities could also develop workshops for faculty and staff on understanding ADHD, creating a more inclusive educational environment for students with ADHD symptoms and ensuring that higher education support staff stays informed and well-prepared. A systematic review by Ward et al. (2020) draws our attention to the effectiveness of ADHD training for educators. The study revealed that training programs significantly increase teachers' knowledge, with a substantial improvement in their understanding of ADHD, immediately after the training. Interestingly, the study also emphasizes the potential ripple effects of effective training programs: improving teacher knowledge can indirectly enhance classroom management and student outcomes. However, like most valuable skills, this knowledge diminishes over time if not reinforced. The follow-up measures suggest that continuous learning and periodic updates to training are necessary to maintain and deepen educators' understanding. Universities could consider integrating follow-up booster sessions and embedding practical tools into training initiatives, creating systems that transform knowledge into lasting competence.

Since interventions cannot be implemented overnight, a prime step could be to provide students with accessible information on university websites. Displaying details on ADHD symptoms, prevalence, and available health services can greatly clear the way for early recognition and intervention. By raising awareness and offering guidance on where to seek help, universities can empower students to better understand their symptoms and access support. This proactive approach can serve as foundation for further comprehensive support initiatives, ensuring that students are informed and prepared to seek assistance as needed. This initiative is already being seen sporadically in Hungary, such as at the Budapest University of Technology and Economics and Semmelweis University. It is hoped that other universities will follow these steps and make similar information readily available on their own websites.

5.4. General conclusions

The studies collectively indicate that ADHD symptoms influence not only academic attrition but also mental well-being and social interactions among university students. These difficulties often intertwine, creating a complex experience that requires thoughtful and multi-layered support.

The *first study* identified procrastination, depression, and excessive smartphone use as significant predictors of ADHD symptoms. Yet, among these challenges, it also revealed active procrastination as an adaptive way of coping with necessities. This approach disrupts the simplistic view that procrastination is inherently bad. For some students, it can serve as a tool, a strategy to manage overwhelming demands. Interventions could move away from framing procrastination with shame and instead teach students to differentiate between passive and active procrastination, which can provide a temporary structure under pressure. This approach can foster agency and help students learn how to channel their habits constructively.

The *second study* assessed the psychological pathways linking ADHD symptoms to dropout intention. Depression and low academic resilience were shown to intensify the likelihood of withdrawal, while self-efficacy served as a protective element. Self-efficacy is not just the belief that one can succeed — it can be the foundation of persistence, the ability to transform uncertainty into action. This finding speaks to the necessity of building self-belief through structured programs such as mentoring, skill-building workshops, and peer-support initiatives. These interventions do more than teach practical skills; they help students see themselves as capable, and that shift in perception can fundamentally alter the trajectory of their academic journey.

In the *third study* ADHD symptoms were also found to complicate students' ability to form and maintain meaningful relationships, often resulting in heightened sensitivity to rejection and feelings of isolation. These relational challenges can deepen emotional distress and further disengagement from university life. However, the study also introduced savoring as a powerful tool. Universities have the opportunity to address this through initiatives that encourage connection, such as peer networks and group activities. Teaching students how to nurture savoring through gratitude journaling, or reflective exercises could provide them with a way to counterbalance rejection sensitivity. Creating opportunities for students to feel included and valued within their community could be essential.

Supporting students with ADHD symptoms requires a perspective that considers their academic, emotional, and social needs as interconnected parts of a whole. Fostering

resilience, teaching savoring skills, and reinforcing self-efficacy are key components of this approach. Equally important is the role of educators, whose understanding and empathy can shape an environment that empowers students to overcome their challenges. Faculty training can equip instructors with the knowledge and tools to create classrooms that are inclusive and supportive, making the academic journey more manageable for these students.

This dissertation points to the requirement for an integrated, thoughtful approach to supporting university students with ADHD symptoms. Hungarian universities have the opportunity to lead the way, designing interventions that go beyond academic performance to nurture emotional resilience and social belonging. With the right structures in place, these students can move past their challenges — not by ignoring them, but by learning to carry them with strength and purpose. It is not only possible for these students to succeed; it is within their reach when the systems around them recognize their potential and provide the support they need.

Disclosure of generative AI and AI assisted technologies:

In preparing this work, the author used Grammarly and Writefull to improve the manuscript's language clarity and overall coherence. The author reviewed and edited the content generated by the tool, ensuring its accuracy and consistency with their research and arguments. The author takes full responsibility for the content and originality of the dissertation.

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APPENDIX A. SUMMARY OF THE RESULTS

Table A1

Summary of the Main Results from Studies 1, 2, and 3

	Direct effect	Indirect effect	Conditional relationships	Statistical Analyses
Study 1.				
	ADHD → Passive Procrastination (+) ADHD → Active Procrastination (-) ADHD → Smartphone Use (+) ADHD → Academic Boredom (+) ADHD → Depression (+)	None (no mediation tested)	None (no moderation tested)	Multiple Linear Regression
Study 2.				
	ADHD → Dropout Intention (+)		Self-efficacy	Mediated and Moderated Regression Analysis
	ADHD → Depression (+)	ADHD → Depression → Dropout Intention		
	ADHD → Academic Resilience (-)	ADHD → Academic Resilience → Dropout Intention		
	ADHD → Self-efficacy (-)	ADHD → Self-efficacy → Dropout Intention (n.s.)		
	Dropout Intention → Self-efficacy (n.s.)	ADHD → Academic Resilience → Depression (n.s.)		
Study 3.				
	ADHD → Rejection Sensitivity (+)		Savoring	Mediated and Moderated Regression Analysis
	ADHD → Well-being (-)	ADHD → Well-being → Rejection Sensitivity		
	ADHD → CE efficiency (-)	ADHD → CE efficiency → Rejection Sensitivity		
	ADHD → Self-regulation (-)	ADHD → Self-regulation → Rejection Sensitivity		
	ADHD → Resilience (-)	ADHD → Resilience → Rejection Sensitivity		
	Rejection Sensitivity → Savoring (n.s.)	ADHD → Savoring → Rejection Sensitivity (n.s.)		

Note. CE efficiency = Creative and executive efficiency, n.s. = not significant

APPENDIX B. QUESTIONNAIRES USED IN THE STUDIES

The following appendices contain the edited versions of the questionnaires displayed on the online platform.

B1 STUDY 1.

Kedves Kitöltő!

Az alábbi kérdőív az okostelefon használatot, a tanulmányi unalom és és az halogatás kapcsolatát vizsgálja. Az önkéntes és anonim kérdőív kitöltésére minden magyar állampolgárságú egyetemi hallgatót invitálunk. A kérdőív körülbelül **5-10 percet** vesz igénybe. A kérdésekre a saját tapasztalataid szerint válaszolj – úgy, ahogy azt leginkább sajátodnak érzed. Válaszadáskor ne töprengj túl sokat egy-egy kérdésen: egyszerűen írd be azt a választ, ami először eszedbe jut, **nincsenek jó vagy rossz válaszok.**

Kérjük, amennyiben a kérdőív során zaklatottá válsz a felmerülő kérdések miatt, haladéktalanul hagyd abba a kitöltést. Ha rossz érzéseid nem múlnak, kérj segítséget pl. a https://sos116-123.hu/ oldalon jegyzett elérhetőségek egyikén!

A kutatáshoz kötődő kérdéseiddel, észrevételeddel, visszajelzéssel kapcsolatosan az alábbi elérhetőségen állunk rendelkezésre:

Müller Vanessa: muller.vanessa@edu.u-szeged.hu
Dr. Fűzné Prof. Pikó Bettina D.Sc.: fuzne.piko.bettina@med.u-szeged.hu

Előre is köszönjük a kitöltésed és a kutatáshoz való hozzájárulást!

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0. Hozzájárulás

Elmúltam 18 éves, hozzájárulok, hogy a Szegedi Tudományegyetem kutatásában részt vegyek. Tudomásul vettem, hogy a kutatás az anonimitás és személyiségi jogok tiszteletben tartásával, kutatási célra használja fel adataimat. Kijelentem, hogy a kutatásban való részvételem önkéntes.	Igen.	Nem.

1. Demográfiai adatok

A következő néhány kérdés ahhoz szükséges, hogy a kérdőív eredményeit a különböző csoportok (pl. nem, kor) alapján tudjuk rendszerezni.

1.1. Biológiai nemed?

- Nő -Férfi

1.2. Milyen típusú településen laksz (állandó lakhely)?

- Falu
- Község
- Kisváros
- Középváros
- Nagyváros vagy megyeszékhely
- Főváros

- *Milyen képzésben veszel részt jelenleg?*
- Felsőoktatási szakképzés (FOSZK)
- Alapképzés (BA, BsC)
- Mesterképzés (MA, MsC)
- Osztatlan képzés
- Doktori (PhD- vagy DLA)

1.3. Milyen tagozatos vagy?
- Nappali
- Levelező
- Távoktatás

2. Epidemiológiai Kutatási Központ Depresszióskála (The Center for Epidemiologic Studies - Depression Scale (CES-D)

Az alábbi lista különböző érzéseket és viselkedéseket tartalmaz. *Kérjük, jelöld be, hogy milyen gyakran érezted, illetve mennyire jellemeztek Téged az egyes állítások* ***az elmúlt hét során.***

(0= ritkán vagy soha (kevesebb, mint 1 nap), 1= néha (1-2 nap), 2= gyakran (3-4 nap), 3= nagyon gyakran, vagy mindig (5-7 nap)

1.	Olyan dolgok miatt nyugtalankodtam, amiért általában nem szoktam aggódni.	0	1	2	3
2.	Nem volt kedvem enni; rossz volt az étvágyam.	0	1	2	3
3.	Úgy éreztem, hogy nem tudok szabadulni a rosszkedvemtől még családom vagy barátaim segítségével sem.	0	1	2	3
4.	Úgy éreztem, hogy ugyanolyan jó vagyok, mint mások.	0	1	2	3
5.	Nehezemre esett odafigyelnem arra, amit éppen csinálok.	0	1	2	3
6.	Lehangoltnak éreztem magam.	0	1	2	3
7.	Úgy éreztem, hogy bármit teszek, minden megerőltető számomra.	0	1	2	3
8.	A jövőt reményteljesnek éreztem.	0	1	2	3
9.	Úgy gondoltam, hogy az életem hiábavaló; kész kudarc.	0	1	2	3
10.	Féltem.	0	1	2	3
11.	Nyugtalanul aludtam.	0	1	2	3
12.	Boldog voltam.	0	1	2	3
13.	Nem voltam annyira beszédes, mint általában.	0	1	2	3
14.	Magányosnak éreztem magam.	0	1	2	3
15.	Az emberek barátságtalanok voltak velem.	0	1	2	3
16.	Élveztem az életet.	0	1	2	3
17.	Sírós időszakaim voltak.	0	1	2	3
18.	Szomorú voltam.	0	1	2	3
19.	Úgy éreztem, hogy az emberek nem szeretnek engem.	0	1	2	3
20.	Nem tudtam hozzákezdeni a dolgokhoz.	0	1	2	3

3. Felnőtt ADHD Önértékelő Skála (Adult ADHD Self-Report Scale (ASRS-v.1.1)

Kérlek, válaszolj az alábbi kérdésekre, annak függvényében, hogy az utóbbi 6 hónapban hogyan érezted magad. Jelöld be a skálán 0-4-ig a válaszod

(0= soha, ritkán = 1, alkalmanként = 2, gyakran = 3, nagyon gyakran = 4).

1.	Milyen gyakran fordul elő, hogy nehezedre esik befejezni a munka utolsó részleteit, miután a kihívást jelentő rész már készen van?	0	1	2	3	4
2.	Milyen gyakran jelent nehézséget rendszerezned a dolgokat, amikor szervezést igénylő feladatot kapsz?	0	1	2	3	4
3.	Milyen gyakran okoz problémát, hogy a találkozókat vagy kötelezettségeket fejben tartsd?	0	1	2	3	4
4.	Ha olyan feladatot kapsz, amelyik sok gondolkodást igényel, milyen gyakran kerülöd el vagy késlelteted az elkezdését?	0	1	2	3	4
5.	Milyen gyakran babrálsz kezeiddel, lábaiddal, vagy fészkelődsz, amikor sokáig egy helyben kell ülnöd?	0	1	2	3	4
6.	Milyen gyakran érzed úgy, hogy túlzottan aktív vagy és muszáj csinálnod valamit, úgy, mintha motor hajtana?	0	1	2	3	4
7,	Milyen gyakran fordul elő, hogy figyelmetlenségből hibát követsz el, ha unalmas vagy nehéz feladaton dolgozol?	0	1	2	3	4
8.	Milyen gyakran okoz nehézséget a figyelmed fenntartani, amikor unalmas vagy monoton munkát végzel?	0	1	2	3	4
9.	Milyen gyakran okoz nehézséget, hogy arra figyelj, amit az emberek mondanak, még akkor is, ha közvetlenül Hozzád beszélnek?	0	1	2	3	4
10.	Milyen gyakran fordul elő, hogy rossz helyre teszed vagy nehezen találsz meg dolgokat otthon vagy a munkahelyeden?	0	1	2	3	4
11.	Milyen gyakran vonja el a figyelmed a környezetedben folytatott tevékenység vagy zaj?	0	1	2	3	4
12.	Milyen gyakran hagyod el a helyed megbeszéléseken vagy más olyan helyzetben, amikor ülve kellene maradni?	0	1	2	3	4
13.	Milyen gyakran vagy nyugtalan vagy fészkelődő?	0	1	2	3	4
14.	Milyen gyakran fordul elő, hogy nehezen tudsz ellazulni vagy pihenni, amikor van időd saját magadra?	0	1	2	3	4
15.	Milyen gyakran veszed észre, hogy társaságban túl sokat beszélsz?	0	1	2	3	4
16.	Beszélgetés közben milyen gyakran kapod magad azon, hogy befejezed mások mondatait, mielőtt még ők maguk befejeznék?	0	1	2	3	4
17.	Milyen gyakran okoz nehézséget kivárni a sorod olyan helyzetekben, ahol ez szükséges?	0	1	2	3	4
18.	Milyen gyakran zavarsz meg másokat, ha azok éppen elfoglaltak?	0	1	2	3	4

4. Halogatás Kérdőív (The Hungarian 8-item version of the Procrastination Scale)

A következő kérdéssor az **időbeosztásodról** fog kérdezni. Kérjük jelöld, hogy milyen mértékben jellemzőek Rád az alábbiak!

(1= egyáltalán nem jellemző, 7= teljes mértékben jellemző)

1.	Gyakran az utolsó pillanatban állok neki egy feladat megoldásának, aztán nehéz azt időre befejeznem.	1	2	3	4	5	6	7
2.	Gyakran későn kezdek el kapkodni.	1	2	3	4	5	6	7
3.	Gyakran kapom magam azon, hogy olyan feladatokkal vagyok elfoglalva, amiket már napokkal korábban el akartam végezni.	1	2	3	4	5	6	7
4.	Miután meghoztam egy döntést, halogatom, hogy nekikezdjek.	1	2	3	4	5	6	7
5.	Nem teljesítek jól, ha sietve kell megoldanom egy feladatot.	1	2	3	4	5	6	7
6.	Feszültnek érzem magam és nem tudok összpontosítani, mikor túlságosan szorít az idő.	1	2	3	4	5	6	7
7.	A teljesítményem csökken, mikor versenyt futok a határidővel.	1	2	3	4	5	6	7
8.	Ha az utolsó pillanatig halasztok dolgokat, nem vagyok elégedett az eredményeikkel.	1	2	3	4	5	6	7

5. Problémás okostelefon-használat (Smartphone Addiction Scale, Short Version (SAS-SV)

A következőkben néhány kérdést teszünk fel az **okostelefon használatával** kapcsolatos tapasztalataidról. *Mennyire jellemzőek Rád az alábbi állítások?*

(1= egyáltalán nem értek egyet, 2= inkább nem értek egyet, 3 = semleges, 4= inkább egyetértek, 5= teljes mértékben egyetértek)

1.	Elmulasztom a tervezett munkámat az okostelefon-használat miatt.	1	2	3	4	5
2.	Az okostelefon-használat miatt nehézségekbe ütközöm, amikor tanulás közben erősen a feladataimra kellene összpontosítanom.	1	2	3	4	5
3.	Fájdalmat érzek a csuklómban vagy a hátamban az okostelefon használata közben.	1	2	3	4	5
4.	Nem vagyok képes megállni, hogy használjam az okostelefonomat.	1	2	3	4	5
5.	Türelmetlen és ingerlékeny vagyok, ha nincs a kezemben az okostelefonom.	1	2	3	4	5
6.	Akkor is az okostelefonomra gondolok, ha éppen nem használom.	1	2	3	4	5
7.	Nem fogom abbahagyni az okostelefon használatát akkor sem, ha az nagymértékben kihat a mindennapi életemre.	1	2	3	4	5
8.	Folyamatosan nézegetem az okostelefonomat, hogy nehogy lemaradjak valamiről valamely közösségi oldalon (Twitter, Facebook, stb.).	1	2	3	4	5
9.	A tervezettnél hosszabb ideig használom az okostelefonomat.	1	2	3	4	5
10.	A körülöttem lévő emberek szerint túl sokat használom az okostelefonomat.	1	2	3	4	5

6. Rövid Egyetemi Unalom Kérdőív (Short College Boredom Scale)

A következőkben a **tanórákon** és a **tanulás közben** jelentkező **unalommal** kapcsolatos tételeket olvashatsz. *Jelöld, hogy mennyire értesz egyet az alábbi állításokkal!*

(1= egyáltalán nem értek egyet, 2= nem értek egyet, 3= egyet is értek, meg nem is, 4= egyetértek, 5= teljesen egyetértek)

1.	Kísértést érzek arra, hogy kisétáljak az óráról, mert annyira unalmas. *(óra közben)*	1	2	3	4	5
2.	Gyakran nézek az órámra, mert az idő vontatottan múlik. *(óra közben)*	1	2	3	4	5
3.	Nyugtalan vagyok, mert alig bírom kivárni, hogy az órának vége legyen. *(óra közben)*	1	2	3	4	5
4.	Elunom magam. *(óra közben)*	1	2	3	4	5
5.	Az óra alatt úgy érzem, bele tudnék süppedni a székembe.	1	2	3	4	5
6.	Mivel unatkozom, belefáradok abba, hogy az asztalomnál üljek. *(tanulás közben)*	1	2	3	4	5
7.	Elkalandozom, miközben tanulok.	1	2	3	4	5
9.	Miközben tanulok, úgy érzem, mintha elszunnyadnék, mert annyira unalmas.	1	2	3	4	5
10.	A tanulás unalmas és egyhangú. (tanulás közben)	1	2	3	4	5
11.	A tananyag annyira unalmas, hogy közben elábrándozom. (tanulás közben)	1	2	3	4	5

7. Van bármilyen tanulási zavarod?

Amennyiben igen, több választ is bejelölhetsz.

- Nincs
- Diszlexia
- Diszgráfia
- Diszortográfia
- Diszkalkulia
- Egyéb

8. Rendelkezel ADHD (figyelemhiányos hiperaktív-zavar) diagnózissal?

- Igen
- Nem

8.1. Felnőttként (18 éves korod után) kaptad meg a diagnózist?

- Igen
- Nem

B2 STUDY 2.

Kedves Kitöltő!

Az alábbi kérdőív a Szegedi Tudományegyetemi Doktori Iskolájához tartozó kutatás, amely a **felsőoktatásban való bennmaradást** vizsgálja, a **protektív tényezők** meghatározása érdekében. Az önkéntes és anonim kérdőív kitöltésére minden magyar állampolgárságú egyetemi polgárt invitálunk.

A kérdőív kitöltése körülbelül 15-20 percet vesz igénybe. A kérdésekre a saját szempontjaid, illetve tapasztalataid szerint válaszolj – úgy, ahogy azt leginkább sajátodnak érzed. Válaszadáskor ne töprengj túl sokat egy-egy kérdésen – egyszerűen írd be azt a választ, ami először eszedbe jut, nincsenek jó vagy rossz válaszok.

Kérjük, amennyiben a kérdőív során zaklatottá válsz a felmerülő kérdések miatt, haladéktalanul hagyd abba a kitöltést. Ha rossz érzéseid nem múlnak, kérj segítséget pl. a https://sos116-123.hu/ oldalon jegyzett elérhetőségek egyikén!

A kutatással kapcsolatos kérdéseiddel, észrevételeivel, visszajelzéssel kapcsolatosan az alábbi elérhetőségen állunk rendelkezésre:

Müller Vanessa: muller.vanessa@edu.u-szeged.hu
Dr. Fűzné Prof. Pikó Bettina D.Sc.: fuzne.piko.bettina@med.u-szeged.hu

Előre is köszönjük a kitöltésed és a kutatáshoz való hozzájárulást!

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0. Hozzájárulás

Elmúltam 18 éves, hozzájárulok, hogy az Szegedi Tudományegyetem, Neveléstudományi Doktori Iskola kutatásában részt vegyek. Tudomásul vettem, hogy a kutatás az anonimitás és személyiségi jogok tiszteletben tartásával, kutatási célra használja fel adataimat. Kijelentem, hogy a kutatásban való részvételem önkéntes.	Igen.	Nem.

1. Demográfiai adatok

A következő néhány kérdés ahhoz szükséges, hogy a kérdőív eredményeit a különböző csoportok (pl. nem, kor) alapján tudjuk rendszerezni.

1.1. Biológiai nemed?

- Nő - Férfi

1.2. Milyen típusú településen laksz (állandó lakhely)?

- Falu
- Község
- Kisváros
- Középváros
- Nagyváros vagy megyeszékhely
- Főváros

1.3. *Milyen képzésben veszel részt jelenleg?*

- Felsőoktatási szakképzés (FOSZK)
- Alapképzés (BA, BsC)
- Mesterképzés (MA, MsC)
- Osztatlan képzés
- Doktori (PhD- vagy DLA)

1.4. Milyen tagozatos vagy?

- Nappali
- Levelező
- Távoktatás

2. Általános Énhatékonyság Kérdőív (The General Self-Efficacy Questionnaire; GSE)

Ez a kérdéssor az énhatékonyságot vizsgálja. Négy fokú skálán jelöld, hogy milyen mértékben jellemzőek Rád az alábbiak.

1 = Egyáltalán nem 2 = Inkább nem 3 = Inkább igen 4 = Teljes mértékben

1.	Mindig sikerül megoldanom a nehéz feladatokat, ha nagyon akarom.	1	2	3	4
2.	Ha valamilyen akadályba ütközöm, megtalálom a módját, hogy elérjem, amit szeretnék.	1	2	3	4
3.	Nem esik nehezemre, hogy kitartsak a szándékaim mellett és elérjem céljaimat.	1	2	3	4
4.	Ötletességemnek köszönhetően tudom, miként kezeljen a váratlan helyzeteket.	1	2	3	4
5.	Biztos vagyok benne, hogy jól tudok boldogulni a váratlan helyzetekben.	1	2	3	4
6.	Megfelelő erőfeszítéssel majdnem minden problémára találok megoldást.	1	2	3	4
7.	Meg tudom őrizni a nyugalmamat a nehézségekkel szemben, mert támaszkodni tudok megoldó képességemre.	1	2	3	4
8.	Ha szembesülök egy feladattal, általában több ötletem támad a megoldásra.	1	2	3	4
9.	Ha sarokba szorítanak, rendszerint kitalálom, mitévő legyek.	1	2	3	4
10.	Bármi történik, általában kezelni tudom a helyzeteket.	1	2	3	4

3. Back-féle Depresszió Skála rövidített változata
(Beck Depression Inventory Short Form; BDI-H)

A következő állítások a jelenlegi állapotoddal kapcsolatosak. Mennyire jellemzőek Rád az alábbiakkal? Jelöld be a legmegfelelőbbet!

(1 = Egyáltalán nem jellemző 2 = Alig jellemző 3 = Jellemző 4 = Teljesen jellemző)

1.	Minden érdeklődésemet elveszítettem mások iránt.	1	2	3	4
2.	Semmiben nem tudok dönteni többé.	1	2	3	4
3.	Több órával korábban ébredek, mint szoktam, és nem tudok újra elaludni.	1	2	3	4
4.	Túlságosan fáradt vagyok, hogy bármit is csináljak.	1	2	3	4

5.	Annyira aggódom a testi-fizikai panaszok miatt, hogy másra nem tudok gondolni.	1	2	3	4
6.	Semmiféle munkát nem vagyok képes ellátni.	1	2	3	4
7.	Úgy látom, hogy a jövőm reménytelen, és a helyzetem nem fog változni.	1	2	3	4
8.	Mindennel elégedetlen vagy közömbös vagyok.	1	2	3	4
9.	Állandóan hibáztatom magam.	1	2	3	4

4. Felnőtt ADHD Önértékelő Skála (Adult ADHD Self-Report Scale; ASRS-v.1.1)

Kérlek, válaszolj az alábbi kérdésekre, annak függvényében, hogy az utóbbi 6 hónapban hogyan érezted magad. Jelöld be a skálán 0-4-ig a válaszod!

(0=soha, ritkán = 1, alkalmanként = 2, gyakran = 3, nagyon gyakran = 4).

1.	Milyen gyakran adódik problémád befejezni az utolsó részleteket, ha már a kihívást jelentő résszel elkészültél?	0	1	2	3	4
2.	Milyen gyakran vannak nehézségeid rendbe tenni a dolgokat, amikor egy feladat rendszerezést igényel?	0	1	2	3	4
3.	Milyen gyakran vannak problémáid emlékezni találkozókra vagy kötelességekre?	0	1	2	3	4
4.	Amikor gondolkodást igénylő feladatot kapsz, milyen gyakran halasztod el vagy kerülöd el az elkezdését?	0	1	2	3	4
5.	Milyen gyakran vagy nyugtalan, vagy fészkelődsz, vagy babrálsz a kezeddel vagy mozgatod a lábad, ha sokáig kell ülnöd egy helyben?	0	1	2	3	4
6.	Milyen gyakran érzed magad túl aktívnak vagy kénytelen, vagy valamit csinálni, mintha egy motor hajtana?	0	1	2	3	4

5. Felsőoktatási Bennmaradás Kérdőív (Higher Education Retention Questionnaire)

Gondolj vissza az előző félévedre, amit az egyetemen/képzéseden töltöttél és jelöld, hogy milyen gyakorisággal vagy milyen mértékben érvényesek Rád az alábbi állítások! (Ha az előző félévben passzív voltál, akkor gondolj a legutóbbi aktív félévedre!)

(1 = szinte soha, 2 = néha , 3 = valamivel kevesebbszer, mint az esetek felében,
4 = valamivel többször, mint az esetek felében, 5 = legtöbbször, 6 = szinte mindig)

1.	Gondoltam arra, hogy abbahagyom az egyetemet.	1	2	3	4	5	6
2.	Tervezgettem, hogy otthagyom az egyetemet.	1	2	3	4	5	6
3.	Gondolkodtam azon, hogy felfüggesztem a tanulmányaimat.	1	2	3	4	5	6

6. Tanulmányi Reziliencia Kérdőív (The Academic Resilience Scale-30; ARS-30)

A következő kérdéssor egy elképzelt helyzetről szól.

Egyest kapsz a legutóbbi beadandódra/feladatodra. Az előző két beadandódra is gyengébb jegyet kaptál, mint amit szerettél volna. A lehető legjobb jegyért hajtasz – mivel határozott karrierterveid vannak, és a családodnak sem szeretnél csalódást okozni. Az oktató visszajelzése erősen kritikus, azt tartalmazza, hogy nem sikerült megértened a feladatot, valamint az írásbeli és kifejezési képességeid alacsonyak. A kritikák mellett olyan megjegyzések is vannak, hogy hogyan tudnád javítani a munkád. A visszajelzések megegyeznek az előző két beadandódra kapottakkal. Hogy reagálsz ebben a helyzetben?

(1= egyáltalán nem valószínű, 5 = valószínű)

1.	Nem fogadnám el az oktató értékelését.	1	2	3	4	5
2.	A visszajelzést arra használnám, hogy kijavítsam a munkámat.	1	2	3	4	5
3.	Egyszerűen feladnám.	1	2	3	4	5
4.	Arra használnám fel a helyzetet, hogy motivált legyek.	1	2	3	4	5
5.	Módosítanám a karrierterveimet.	1	2	3	4	5
6.	Valószínűleg bosszankodnék.	1	2	3	4	5
7.	Kezdeném azt hinni, hogy kevés esélyem van rá, hogy sikeres legyek az egyetemen.	1	2	3	4	5
8.	Kihívásnak látnám a helyzetet.	1	2	3	4	5
9.	Minden tőlem telhetőt megtennék, hogy távol tartsam magamtól a negatív gondolatokat.	1	2	3	4	5
10.	A helyzetet átmenetinek tekinteném.	1	2	3	4	5
11.	Keményebben dolgoznék.	1	2	3	4	5
12.	Valószínűleg lehangolttá válnék.	1	2	3	4	5
13.	Igyekeznék új megoldásokat találni.	1	2	3	4	5
14.	Nagyon csalódott lennék.	1	2	3	4	5
15.	Az oktatót hibáztatnám.	1	2	3	4	5
16.	Tovább próbálkoznék.	1	2	3	4	5
17.	Nem változtatnék a hosszú távú céljaimon és törekvéseimen.	1	2	3	4	5
18.	Az előző sikereimet használnám fel arra, hogy motivált legyek.	1	2	3	4	5
19.	Kezdeném azt hinni, hogy kevés arra az esélyem, hogy a megkapjam a vágyott munkahelyet.	1	2	3	4	5
20.	Elkezdeném figyelemmel kísérni és kiértékelni a saját teljesítményemet és erőfeszítéseimet.	1	2	3	4	5
21.	Segítséget kérnék az oktatóimtól.	1	2	3	4	5
22.	Biztatnám magam.	1	2	3	4	5
23.	Megakadályoznám, hogy pánikba essek.	1	2	3	4	5
24.	Többféle tanulás módot is kipróbálnék.	1	2	3	4	5
25.	Saját célokat állítanék fel az eredmény eléréséhez.	1	2	3	4	5
26.	Bátorítást keresnék a családomtól és barátaimtól.	1	2	3	4	5

27.	Átgondolnám az erősségeimet és gyengeségeimet, hogy jobban tudjak teljesíteni.	1	2	3	4	5
28.	Úgy érezném, hogy minden tönkrement és rossz lett.	1	2	3	4	5
29.	Elkezdeném a teljesítményemtől függően jutalmazni és büntetni magam.	1	2	3	4	5
30.	Alig várnám, hogy megmutathassam, hogy képes vagyok javítani a jegyeimen.	1	2	3	4	5

7. Van bármilyen tanulási zavarod?

Amennyiben igen, több választ is bejelölhetsz.

- Nincs
- Diszlexia
- Diszgráfia
- Diszortográfia
- Diszkalkulia
- Egyéb

8. Rendelkezel ADHD (figyelemhiányos hiperaktív-zavar) diagnózissal?

- Igen
- Nem

8.1. Felnőttként (18 éves korod után) kaptad meg a diagnózist?

- Igen
- Nem

B3 STUDY 3.

Kedves Kitöltő!

Az alábbi kérdőív a Szegedi Tudományegyetemen zajló kutatás, amely **mentális egészséget és a kapcsolatok rendszerét vizsgálja.** Az önkéntes és anonim kérdőív kitöltésére minden magyar állampolgárságú egyetemi polgárt invitálunk.

A kérdőív kitöltése körülbelül 15-20 percet vesz igénybe. A kérdésekre a saját szempontjaid, illetve tapasztalataid szerint válaszolj – úgy, ahogy azt leginkább sajátodnak érzed. Válaszadáskor ne töprengj túl sokat egy-egy kérdésen – egyszerűen írd be azt a választ, ami először eszedbe jut, nincsenek jó vagy rossz válaszok.

Kérjük, amennyiben a kérdőív során zaklatottá válsz a felmerülő kérdések miatt, haladéktalanul hagyd abba a kitöltést. Ha rossz érzéseid nem múlnak, kérj segítséget pl. a https://sos116-123.hu/ oldalon jegyzett elérhetőségek egyikén!

A kutatással kapcsolatos kérdéseiddel, észrevételeivel, visszajelzéssel kapcsolatosan az alábbi elérhetőségen állunk rendelkezésre:

Müller Vanessa: muller.vanessa@edu.u-szeged.hu
Dr. Fűzné Prof. Pikó Bettina D.Sc.: fuzne.piko.bettina@med.u-szeged.hu

Előre is köszönjük a kitöltésed és a kutatáshoz való hozzájárulást!

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0. Hozzájárulás

Elmúltam 18 éves, hozzájárulok, hogy az Szegedi Tudományegyetem, Neveléstudományi Doktori Iskola kutatásában részt vegyek. Tudomásul vettem, hogy a kutatás az anonimitás és személyiségi jogok tiszteletben tartásával, kutatási célra használja fel adataimat. Kijelentem, hogy a kutatásban való részvételem önkéntes.	Igen.	Nem.

1. Demográfiai adatok

A következő néhány kérdés ahhoz szükséges, hogy a kérdőív eredményeit a különböző csoportok (pl. nem, kor) alapján tudjuk rendszerezni.

1.1. Biológiai nemed?

- Nő
- Férfi

1.2. Milyen típusú településen laksz (állandó lakhely)?

- Falu
- Község
- Kisváros
- Középváros
- Nagyváros vagy megyeszékhely
- Főváros

1.3. *Milyen képzésben veszel részt jelenleg?*

- Felsőoktatási szakképzés (FOSZK)
- Alapképzés (BA, BsC)
- Mesterképzés (MA, MsC)
- Osztatlan képzés
- Doktori (PhD- vagy DLA)

1.4. Milyen tagozatos vagy?

- Nappali
- Levelező
- Távoktatás

1.5. Jelenleg párkapcsolatban élsz?

- *Igen*
- *Nem*

2. Felnőtt ADHD Önértékelő Skála (Adult ADHD Self-Report Scale (ASRS-v.1.1)

Kérlek, válaszolj az alábbi kérdésekre, annak függvényében, hogy az utóbbi 6 hónapban hogyan érezted magad. Jelöld be a skálán 0-4-ig a válaszod!

(0= soha, ritkán = 1, alkalmanként = 2, gyakran = 3, nagyon gyakran = 4).

1.	Milyen gyakran fordul elő, hogy nehezedre esik befejezni a munka utolsó részleteit, miután a kihívást jelentő rész már készen van?	0	1	2	3	4
2.	Milyen gyakran jelent nehézséget rendszerezned a dolgokat, amikor szervezést igénylő feladatot kapsz?	0	1	2	3	4
3.	Milyen gyakran okoz problémát, hogy a találkozókat vagy kötelezettségeket fejben tartsd?	0	1	2	3	4
4.	Ha olyan feladatot kapsz, amelyik sok gondolkodást igényel, milyen gyakran kerülöd el vagy késlelteted az elkezdését?	0	1	2	3	4
5.	Milyen gyakran babrálsz kezeiddel, lábaiddal, vagy fészkelődsz, amikor sokáig egy helyben kell ülnöd?	0	1	2	3	4
6.	Milyen gyakran érzed úgy, hogy túlzottan aktív vagy és muszáj csinálnod valamit, úgy, mintha motor hajtana?	0	1	2	3	4
7.	Milyen gyakran fordul elő, hogy figyelmetlenségből hibát követsz el, ha unalmas vagy nehéz feladaton dolgozol?	0	1	2	3	4
8.	Milyen gyakran okoz nehézséget a figyelmed fenntartani, amikor unalmas vagy monoton munkát végzel?	0	1	2	3	4
9.	Milyen gyakran okoz nehézséget, hogy arra figyelj, amit az emberek mondanak, még akkor is, ha közvetlenül Hozzád beszélnek?	0	1	2	3	4
10.	Milyen gyakran fordul elő, hogy rossz helyre teszed vagy nehezen találsz meg dolgokat otthon vagy a munkahelyeden?	0	1	2	3	4
11.	Milyen gyakran vonja el a figyelmed a környezetedben folytatott tevékenység vagy zaj?	0	1	2	3	4
12.	Milyen gyakran hagyod el a helyed megbeszéléseken vagy más olyan helyzetben, amikor ülve kellene maradni?	0	1	2	3	4

13.	Milyen gyakran vagy nyugtalan vagy fészkelődő?	0	1	2	3	4
14.	Milyen gyakran fordul elő, hogy nehezen tudsz ellazulni vagy pihenni, amikor van időd saját magadra?	0	1	2	3	4
15.	Milyen gyakran veszed észre, hogy társaságban túl sokat beszélsz?	0	1	2	3	4
16.	Beszélgetés közben milyen gyakran kapod magad azon, hogy befejezed mások mondatait, mielőtt még ők maguk befejeznék?	0	1	2	3	4
17.	Milyen gyakran okoz nehézséget kivárni a sorod olyan helyzetekben, ahol ez szükséges?	0	1	2	3	4
18.	Milyen gyakran zavarsz meg másokat, ha azok éppen elfoglaltak?	0	1	2	3	4

3. Mentális Egészség Teszt (The Mental Health Test)

Az alábbi állítások az emberek általános életérzését, jellemző tulajdonságait és életfelfogását írják le. Nincsenek jó vagy rossz válaszok. Kérlek, legyen olyan őszinte, amennyire csak tudsz és jelezd minden tételnél a megfelelő szám bekarikázásával, hogy milyen mértékben jellemző Rád az állítás!

(1= egyáltalán nem jellemző, 2= nem jellemző, 3= kicsit jellemző, 4= jellemző, 5= nagyon jellemző, 6= teljes mértékben jellemző)

1.	Mindennapjaimban érezhetően több az öröm, mint a bánat.	1	2	3	4	5	6
2.	Könnyen válok türelmetlenné.	1	2	3	4	5	6
3.	Könnyen fel tudom eleveníteni a múlt kellemes emlékeinek örömét.	1	2	3	4	5	6
4.	Nehéz idők után hamar magamhoz térek.	1	2	3	4	5	6
5.	Gyakran vannak olyan ötleteim, amelyekhez mások eredményesen tudnak kapcsolódni és továbbgondolkodásra készteti őket.	1	2	3	4	5	6
6.	A stresszes eseményeket nehezen viselem.	1	2	3	4	5	6
7.	Mások szerint is jó problémamegoldó vagyok.	1	2	3	4	5	6
8.	Hirtelen természetű vagyok (előbb cselekszem, utána gondolkodom).	1	2	3	4	5	6
9.	Sikeresen el tudom érni a magam elé kitűzött célokat.	1	2	3	4	5	6
10.	Szeretem elraktározni az átélt örömteli idők emlékét, hogy később felidézhessem őket.	1	2	3	4	5	6
11.	A lelki megrázkódtatások után elég gyorsan felépülök.	1	2	3	4	5	6
12.	Jó kedvre tudom hangolni magam, ha elképzelem, milyen lesz egy közelgő boldog idő.	1	2	3	4	5	6
13.	Rendszerint eltart egy ideig, amíg továbblépek életem egy- egy nehéz pillanatán.	1	2	3	4	5	6
14.	Lelki állapotom jónak mondható.	1	2	3	4	5	6
15.	Jó vagyok az olyan munkákban, ahol új és eredeti ötletek kellenek.	1	2	3	4	5	6
16.	Ideges leszek, ha valami nem úgy alakul, ahogy terveztem.	1	2	3	4	5	6
17.	Gyakran jók a megsejtéseim arról, hogy hogyan gondolkoznak és éreznek az emberek.	1	2	3	4	5	6
18.	Mindent összevetve mennyire mondaná magát boldognak (1: nagyon nem, 6: nagyon igen)?	1	2	3	4	5	6

4. Társas Elutasításra Való Érzékenység Kérdőív
(The Rejection Sensitivity Questionnaire; A-RSQ)

Az alábbi állítások olyan szituációkat írnak le, amelyekbe a főiskolai/egyetemi diákok néha belekerülhetnek. Kérlek, képzeld el azt, hogy Te kerülsz ezekbe a szituációkba!
Minden esetben két kérdésre kell válaszolnod a szituáció kapcsán:

1. Mennyire aggódnál vagy idegeskednél azon, hogy mit fog válaszolni a másik személy?
(1= egyáltalán nem aggódnék, 6 = nagyon aggódnék)

2. Mit gondolsz, valószínűleg mit fog válaszolni a másik személy?
(1 = egyáltalán nem valószínű, 6 = nagyon valószínű)

1.	**Megkérdezel valakit a csoportban, hogy kölcsönkérheted-e a jegyzeteit.**						
	Mennyire aggódnál vagy idegeskednél azon, hogy a másik személy kölcsönadná-e neked a jegyzeteit?	1	2	3	4	5	6
	Arra számítanék, hogy a másik személy szívesen kölcsönadná nekem a jegyzeteit.	1	2	3	4	5	6
2.	**Megkéred a szüleidet, hogy segítsenek eldönteni, hogy milyen képzésre jelentkezz.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy a szüleid akarnak-e segíteni neked?	1	2	3	4	5	6
	Arra számítanék, hogy segítenének nekem.	1	2	3	4	5	6
3.	**A partnered azt tervezi, hogy a barátokkal megy szórakozni ma este, de Te nagyon szeretnéd vele tölteni az estét, és ezt elmondod neki.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy a partnered úgy dönt-e, hogy otthon marad veled?	1	2	3	4	5	6
	Arra számítanék, hogy a partnerem szívesen otthon maradna velem.	1	2	3	4	5	6
4.	**Óra után elmondod a tanárodnak, hogy a kurzus anyagával kapcsolatban nehézségekbe ütköztél, és megkéred, hogy segítsen Neked.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy a tanárod akar-e segíteni neked?	1	2	3	4	5	6
	Arra számítanék, hogy a tanárom segítene nekem.	1	2	3	4	5	6
5.	**Egy személyt, akit az egyik kurzusodról ismersz, elhívsz kávézni.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy az illető el akar-e menni veled?	1	2	3	4	5	6
	Arra számítok, hogy az illető el akarna jönni velem.	1	2	3	4	5	6

6.	**Miután lediplomáztál nem találsz munkát, és megkérdezed a szüleidet, hogy otthon lakhatnál-e egy ideig.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy a szüleid akarják-e, hogy hazaköltözz?	1	2	3	4	5	6
	Arra számítanék, hogy szívesen látnának otthon.	1	2	3	4	5	6
7.	**Felhívod a párodat egy komoly veszekedés után, és elmondod, hogy szeretnél találkozni vele.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy a párod akar-e találkozni Veled?	1	2	3	4	5	6
	Arra számítok, hogy szeretne találkozni velem.	1	2	3	4	5	6
8.	**Megkérdezed egy ismerősöd, hogy kölcsönkérhetnél-e valamit tőle.**						
	Mennyire aggódnál vagy idegeskednél amiatt, hogy kölcsönadja-e neked?	1	2	3	4	5	6
	Arra számítok, hogy kölcsönadná nekem.	1	2	3	4	5	6
9.	**Megkéred a szüleidet, hogy jöjjenek el egy számodra fontos eseményre.**						
	Mennyire aggódnál vagy idegeskednél azon, hogy a szüleid el akarnak-e jönni?	1	2	3	4	5	6
	Arra számítok, hogy a szüleim el szeretnének jönni.	1	2	3	4	5	6
10.	**Megkéred egy ismerősödet, hogy tegyen meg neked egy nagy szívességet.**						
	Mennyire aggódnál vagy idegeskednél azon, hogy az ismerősöd megtenné-e a szívességet?	1	2	3	4	5	6
	Arra számítok, hogy örömmel megtenné nekem a szívességet.	1	2	3	4	5	6
11.	**Megkérdezed a párodat, hogy valóban szeret-e Téged.**						
	Mennyire aggódnál vagy idegeskednél azon, hogy a partnered igent mond-e?	1	2	3	4	5	6
	Arra számítok, hogy őszintén igent mondana.	1	2	3	4	5	6
12.	**Megkéred a párodat, hogy jöjjön veled haza, hogy bemutasd a szüleidnek.**						
	Mennyire aggódnál vagy idegeskednél azon, hogy a partnered meg szeretné-e ismerni a szüleidet?	1	2	3	4	5	6
	Arra számítok, hogy szívesen találkozna a szüleimmel.	1	2	3	4	5	6

5. Van bármilyen tanulási zavarod?

Amennyiben igen, több választ is bejelölhetsz.

- Nincs
- Diszlexia
- Diszgráfia
- Diszortográfia
- Diszkalkulia
- Egyéb

6. Rendelkezel ADHD (figyelemhiányos hiperaktív-zavar) diagnózissal?

- Igen
- Nem

6.1. Felnőttként (18 éves korod után) kaptad meg a diagnózist?

- Igen
- Nem

APPENDIX C. THE ETHICAL APPROVAL

SZEGEDI TUDOMÁNYEGYETEM
NEVELÉSTUDOMÁNYI DOKTORI ISKOLA
ETIKAI BIZOTTSÁGA

6722 SZEGED, Petőfi S sgt. 30-34.
Tel.: (62) 544163, 544032; Fax: (62) 420034

Ügyiratszám: 7/2021
Tárgy: kutatás-etikai engedély igazolása

E T I K A I E N G E D É L Y

Müller Vanessa részére a 2021. március 28-án „*A figyelemhiányos hiperaktivitás-zavar (ADHD) jelei a felsőoktatásban tanuló fiatal felnőttek körében – az egyetemi bennmaradás protektív faktorainak vizsgálata*” c. kutatás (közreműködő kutató: Prof. Dr. Pikó Bettina) tárgyában benyújtott etikai kérelmet az SZTE Neveléstudományi Etikai Bizottság a kutatási terv és a kérelemhez csatolt kiegészítések áttanulmányozása alapján elbírálta, és a következő döntést hozta:

A bizottság a szakmai-etikai engedélyt **jóváhagyja**/~~nem hagyja jóvá~~.

INDOKLÁS:

A benyújtott kutatási terv a neveléstudományi és a tágabb értelemben vett társadalomtudományi humán kutatások szakmai-etikai kritériumainak megfelel. A kutatásban egyetemisták vesznek részt, akik 18 év felettiek. A tervezett minta kb. 150-300 főből áll. A kutatásban részt vesznek figyelemhiányos hiperaktivitás-zavar diagnózissal (ADHD) rendelkező alanyok is. A kutatás célja az ADHD hatásnak vizsgálata a felsőoktatásban tanuló fiatalok felsőoktatási sikerességére. A vizsgálatba bevont változók között szerepel a diplomaszerzéshez kapcsolódó kitartás, továbbá az ezzel összefüggésbe hozható pszichológiai változók. Az eredmények várhatóan felhasználhatók lesznek az ADHD-val élő fiatalok felsőoktatási lemorzsolódásának a megelőzése terén. Az adatgyűjtésre online kérdőívek segítségével közösségi médián és felsőoktatási intézmények megkeresésén keresztül kerül sor. A kapott eredmények kizárólag kutatási célra, összesített formában lesznek felhasználva, az anonimitás biztosított. A kutatók biztosítják, hogy a résztvevők személyiségi jogai, testi és lelki egészsége ne sérüljön. A róluk gyűjtött adatok illetéktelenek kezébe nem kerülnek. A projekt 2021. április – 2024. december között valósul meg.

Szeged, 2021. április 9.

Prof. Dr. Józsa Krisztián
az Etikai Bizottság elnöke/h

AUTHOR'S PUBLICATIONS

Article publications

[*Correspondent Author]

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DECLARATION

As a PhD candidate in the Health Education doctoral program at the Doctoral School of Education, University of Szeged, I, Vanessa Müller (Neptun code: WQLL2G), hereby declare that the dissertation titled *"Through the lens of ADHD: Factors of academic attrition, rejection sensitivity and path to dropout intention"* is based on a series of peer-reviewed publications. While the articles included were coauthored with other researchers, I was responsible for the primary research tasks, including formulating research questions, designing the studies, conducting data collection and analysis, and drafting the manuscripts. The dissertation integrates these publications into a coherent and comprehensive body of work, reflecting my original research and scholarly contribution.

Szeged, October 10th, 2024

Signature