ADHD and Executive Functions: The Relation Between Strategic Planning and ADHD Symptoms in University Students

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Abstract

Research has shown that executive functions are often associated to ADHD symptoms (Sjöwall & Thorell, 2014). However, it is inconclusive in literature how exactly executive functions and ADHD are associated (Barkley, 1997; Holmes et al., 2010; Nigg et al., 2005). The aim of the present study was to investigate further the association between executive functions and ADHD in university students, particularly, the association between strategic planning and ADHD, and whether it could predict ADHD. To investigate the study used a sample of university students (N= 283 participants) which consisted of 65 men and 216 women (M_{age} = 19.76) who completed the Conners' Adult ADHD Rating Scale (CAARS) and the Executive Function Index scale (EFI). The CAARS measured ADHD symptoms in university students, and the EFI measured executive functions of students in an academic environment. Results showed that students with less optimal use of executive functions showed more ADHD risk and symptoms. Similarly, students with less optimal use of strategic planning showed more ADHD risk symptoms. Furthermore, the results showed that less optimal use of strategic planning predicted more ADHD risk and symptoms. The present study contributes to previous research by clarifying the association between executive functions and ADHD, and by specifying strategic planning as an important variable to predict ADHD. For future studies it is encouraged to also consider measuring executive functions and strategic planning in students' daily life.

Keywords: ADHD, executive functions, strategic planning

ADHD and Executive Functions: The Relation between Strategic planning and ADHD Symptoms in University Students

Attention-Deficit/Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that is most often diagnosed in children (Sjöwall & Thorell, 2014; Wolraich et al., 2019). In recent years, ADHD has been more present among the general population (Polanczyk et al., 2014). The disorder is characterized by symptoms of inattention and/or hyperactivity and impulsivity. According to the DSM, symptoms of ADHD interfere with the quality of social, academic, and/or occupational functioning (American Psychiatric Association., 2013). The importance of neuropsychological treatment for this impactful disorder has led researchers (Mous et al., 2015; Kim et al., 2020) to investigating the relation between ADHD and the biological, social, and environmental factors. For example, research has shown that brain areas such as the basal ganglia and prefrontal cortex may be involved in ADHD, and that neurotransmitters such as dopamine/norepinephrine and serotonin contribute in the process of neurotic outgrowth seen in ADHD (Mous et al., 2015). Furthermore, environmental factors such as maternal pre-pregnancy obesity, overweight, and smoking during pregnancy have been associated with ADHD (Kim et al., 2020). Social factors such as socioeconomic status may also influence activity level and attention in ADHD (Russel et al., 2014).

The process of diagnosing ADHD in adults has been difficult due to comorbidities involved with ADHD (Newcorn et al., 2007), and compensation skills that adults might have learned over the years (Canel et al., 2017). It has especially been difficult to diagnose ADHD in university students (Bordoff., 2017). University life can be challenging, and not having the right treatment and skills to overcome the demands that are expected can increase stress. For example, it was shown that ADHD symptoms are related to anxiety, depression and stress in university students (Alexander & Harrison, 2013)

Additionally, research has shown that deficits in executive functions may also relate to ADHD symptoms (Sjöwall & Thorell, 2014). Executive functions are higher cognitive processes that coordinates cognition, emotion, and movement in complex tasks (Zhang et al., 2021). Examples of executive functions include strategic planning, organization and motivational drive (Spinella et al., 2005). Research has shown that executive functions play a critical role in the relationship between ADHD and academic performance in children and adolescents (Schoemaker et al., 2012; Sjöwall & Thorell, 2014), yet it is still unclear how exactly ADHD is related to executive functions.

For example, literature has shown the importance of executive functions in ADHD symptoms and mood symptoms (Mohamed et al., 2021), and ADHD symptoms and quality of life (Zhang et al., 2021). However, it is unclear whether deficits in executive functions are an antecedent or consequence of ADHD, or whether they overlap with each other. Some research has proposed that executive function could be an additional symptom of ADHD (Barkley, 1997; Holmes et al., 2010). Research on brain areas support the notion of deficit in executive as an additional symptom of ADHD, for instance, the prefrontal cortex is believed to play an important role in both the executive functions and ADHD symptoms (Poletti, 2009). Nonetheless, other research has shown that symptoms of ADHD could also be attributable to underlying deficits in executive functions (Nigg et al., 2005; Thorell, 2007; Willcutt et al., 2005). Namely, it was shown that certain training in executive functions could reduce ADHD symptoms (Shuai et al., 2021). The discourse does not end as there are also indications that executive functions may play an independent role, a study by Mohamed and colleagues (2021) showed that the association between ADHD and mood symptoms was reduced after controlling for executive functions. To bring more clarity on the association between executive function and ADHD, the present study would like to investigate further the independent role of executive function, particularly, the role of strategic planning in ADHD.

Strategic Planning and ADHD Symptoms

Strategic planning or "planning and use of strategies refer to the ability to allocate an appropriate amount of time to each task according to its priority and to avoid being distracted by irrelevant stimuli…" (Kofman et al., 2008, p. 1). Thus, strategic planning involves goal-directed behaviors. The use of planning and strategy is crucial for university life as students are often required to independently manage activities, plan ahead, make decisions, and prepare for classes and exams (Dvorsky & Langberg, 2014). Research has shown that planning and problem solving is associated to prefrontal cortex areas (Jacobs & Anderson, 2002) which is an important brain area for cognitive control functions such as making plans and decision making. Research has shown that the prefrontal cortex is also often damaged in those diagnosed with ADHD (Kofman et al., 2008; Mous et al., 2015), and it was shown that ADHD was associated with weaker function and structure of prefrontal cortex circuits (Arnsten, 2009). Symptoms of ADHD such as inattention, hyperactivity and/or impulsivity may influence skills of executive functions such as strategic planning (Boyer et al., 2018). For example, symptoms such as the inability to concentrate or sustain attention on certain tasks may make it difficult to pay attention to what is needed at the moment and make it difficult to plan ahead. Moreover, symptoms of ADHD make it hard to develop or pursue a strategy to perform certain tasks and to adhere to a certain schedule (Kofman et al., 2008).

The aim of the present study was to investigate the general association between executive functions and ADHD, the association between strategic planning and ADHD, and whether strategic planning could predict ADHD. ADHD will be measured using the Conner's Adult ADHD Rating Scale (CAARS), a questionnaire for ADHD in adults. In addition, executive functions will be measured with the Executive Function Index Scale (EFI), this questionnaire is suitable for measuring executive functions in an academic environment. The study expects that university students with ADHD will also have more deficits in executive

functions. Research has shown that adolescents with ADHD have more pronounced difficulties with executive functions (Boyer et al., 2018), and that ADHD affected the executive skills needed to cope with university (Dvorsky & Langberg, 2014). Additionally, Kofman and colleagues (2008) have shown that children with ADHD were less able to approach strategic plans for tasks similar to school assignments. The present study proposes that strategic planning could affect ADHD in university students. Firstly, it is expected that there will be a negative correlation between general executive functions and ADHD in university students. Hence, the less optimal use of executive functions, the more risk for ADHD and ADHD symptoms. Secondly, it is expected that there will be a negative correlation between strategic planning and ADHD in university students. Thus, the less optimal use of strategic planning, the more ADHD risk and ADHD symptoms. Lastly, to clarify the ongoing ambiguity between executive functions and ADHD (Barkley, 1997; Holmes et al., 2010; Nigg et al., 2005; Thorell, 2007; Willcutt et al., 2005), the present study would also like to investigate whether strategic planning could predict ADHD. It is expected that less optimal use of strategic planning would predict more risk of ADHD and ADHD symptoms.

Methods

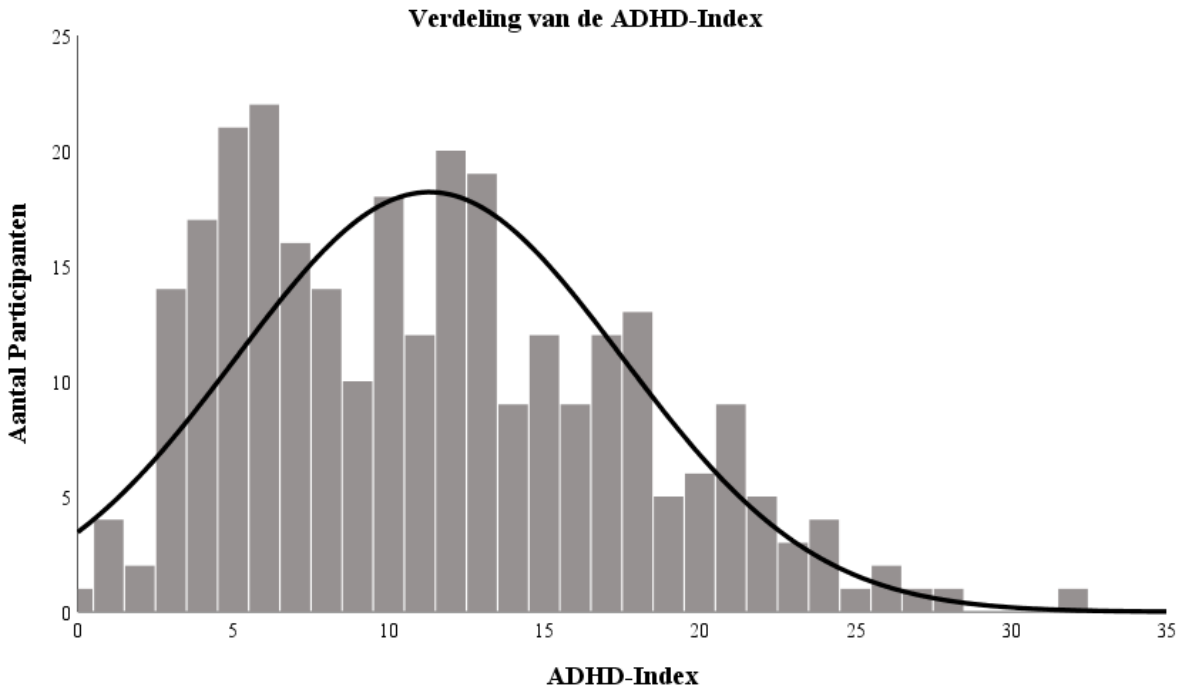
Participants

The current study consisted of 283 participants, including 65 men and 216 women. The age of the participants ranged from seventeen to thirty years (M = 19.76, SD = 1.986). The participants were recruited through an advertisement on the research participation (SONA) platform of the University of Groningen. The participants were all first-year psychology students and received credits for their participation. The study was approved by the Ethics Committee of the Psychology Department of the University of Groningen. Eight

participants were removed from the data because they did not fill in both the CAARS and the EFI. Figure 1 shows that the scores of the ADHD index are right-skewed.

Figure 1

Distribution of the ADHD index scores from the CAARS



Note. Aantal Participanten: number of participants, Verdeling van de ADHD-Index: distribution of the ADHD-Index.

Procedure

The survey took place online, allowing the participants to complete the survey on their own mobile phone, laptop or computer. Participants were informed via Qualtrics (2021) about the purpose of the experiment and about the anonymity of their data. Once the informed consent was signed, participants could enter their age, gender, job and first language. The participants were then asked whether they had a physical, psychiatric or neurological disorder and whether they were currently taking medication. No systematic diagnostic assessment was performed to confirm the reported diagnosis. The participants then completed the CAARS questionnaire, which took approximately 45 minutes. After completing the CAARS,

participants were asked for their consent to obtain their academic performance score for a follow-up study. Finally, they were asked if they had any comments for the researchers about the CAARS.

After Part I of the study was completed (the CAARS), the participants were able to participate in Part II of the study: the EFI. Before completing the EFI, participants were again asked to sign informed consent. The EFI took approximately 20 minutes to complete, after which participants were asked if they had any comments about the EFI. The study was completed once participants completed both the CAARS and the EFI.

Materials

CAARS Questionnaire

The CAARS Questionnaire: Conners' Adult ADHD Rating Scale (CAARS) is a self-rating scale for adults who exhibit symptoms of ADHD (Conners et al., 1998). CAARS consists of 66 items, of which items are scored on a 4-point scale (0 = never; 1 = occasionally; 2 = often; 3 = very often). The CAARS contained 9 subscales. The ADHD behavioral symptoms are divided into the following four subscales: (a) inattention/memory problems, (b) hyperactivity/irritability, (c) impulsivity/emotional instability, and (d) self-concept problems. Additionally, three subscales are included for measuring ADHD symptoms according to the Diagnostic and Statistical Manual of Mental Disorders (4th edition; DSM-IV; American Psychiatric Association, 1994): The DSM-IV Inattention subscale, the DSM-IV Hyperactivity subscale, the DSM-IV Impulsive symptoms subscale and ADHD symptoms total. Specific items are used per scale that can identify individuals at risk of being diagnosed with ADHD. An example of a question is: 'I'm disorganized.' and 'I can't sit still for very long.' The CAARS also contained an inconsistency scale, which gives an estimate of how consistently the questionnaire has been completed. A deviant score indicates that someone has responded differently to several comparable items. This may indicate that the behavior of the participant

was not well represented and that the results should therefore be interpreted with great caution. Finally, the ADHD Index subscale, which measures the overall degree of ADHD symptoms, consists of 12 items covering the four areas of ADHD. This scale aims to identify people at risk of being diagnosed with ADHD (Mohamed et al., 2016).

The raw scores of the CAARS subscales are converted to T-scores. The T-scores of the subscales were used for the analysis. According to the manual, a T-score of more than 65 represents a clinically significant chance that people attending a psychiatric clinic are at risk for having symptoms, and a score of 70 represents a clinically significant risk of symptoms in adults with no identified problems (Conners et al., 1998). In general, the higher the score, the more ADHD problems.

The CAARS questionnaire is a valid and reliable indicator for measuring ADHD symptoms in adults (Erhardt et al., 1999): the test-retest reliability is between 0.85 and 0.92 and the sensitivity and specificity of all four subscales are high. CAARS also represents a valid cross-cultural measure of current ADHD symptoms in adults (Christiansen et al., 2012).

EFI Questionnaire

Executive Function Index Scale (EFI) is a self-assessment scale used to measure executive functions in daily life (Mohamed et al., 2021). EFI consists of 27 items, the items are in English and are scored on a 5-point scale (from 1 = not at all to 5 = very much). The items are divided into five subscales (Spinella, 2005): motivational drive (motivation, energy level), organization (multitasking, sequencing), impulse control (self-inhibition, propensity for risky behavior), empathy (interests in the well-being of others, pro -social behavior) and strategic planning (planning, thinking ahead, using strategies). Examples of questions are: 'I have a lot of concern for the wellbeing of other people.' and 'I start things, but then lose interest and do something else.' The strategic planning subscale will be used for the analysis.

Finally, the total score is calculated as the sum of all items, a lower total score on the EFI indicates worse executive functioning, while a higher score on the scales means better executive function (Spinella., 2005). EFI has been developed in non-clinical populations and can be used for non-clinical and clinical purposes. EFI was originally developed in the student population (Gwenny et al., 2019) and since the participants are mainly students, it is suitable for this study. There is a strong correlation between EFI and other self-report-based instruments for measuring executive function, which has been validated by clinical and neuroimaging studies. In addition, the EFI has a good internal consistency (α = .69-.82).

Analysis

Descriptive statistics were obtained for each of the variables studied in both questionnaires. The means and standard deviations were inspected to ensure that values of each variable were within an appropriate range (See Table 1 in Appendix).

Before computing the correlations, scatterplots of the CAARS and EFI variables were created to check for the assumption of linearity. Negative linear relations were observed after the inspection of the scatterplots. Thus, the assumption of linearity was accepted. Some outliers were also observed through the inspection of scatterplots and boxplots of the variables. However, the outliers were not so deviant that it could affect the data.

Additionally, the Saphiro Wilk test was used to check the assumption of normality. According to the test, the Total Executive Functions Index Scale (W (282) = .995, p = .47), and EFI Organization subscale (W (283) = .986, p = .08) seem to be normally distributed. All other variables seem to not be normally distributed (p < .01) (See Table 2 in Appendix). Hence, the non-parametric Spearman's rank order correlations were computed instead of Pearson's (since assumption of normality was not met) to explore the relationship between the Total EFI and CAARS subscales (ADHD index score and ADHD DSM score), and to explore the relationship between the strategic planning subscale of the EFI and the CAARS subscales.

Finally, a regression analysis was carried out to examine the relation between the strategic planning subscale of the EFI and the CAARS subscales (the strategic planning subscale was the independent variable, while the CAARS subscales were the dependent variables). For the regression analyses, scatterplots of the residuals were used to check for the normality of the residuals. The residuals seem to be normally distributed as the plots show a random scatter around the mean (See figures 1 and 2 in Appendix).

Results

Association Between Executive Functions and ADHD

For the first hypothesis, the association between executive functions and ADHD was examined. It was hypothesized that students with less optimal use of executive functions would have more ADHD risk and more ADHD symptoms. Results showed that less optimal use of executive functions significantly associated with more ADHD risk as the correlation indicates a moderate downhill (negative) relationship (r_s (273) = -.55, p <.01). Similarly, it was shown that less optimal use of executive functions significantly associated with more ADHD symptoms as the correlation indicates a moderate downhill (negative) relationship (r_s (273) = -.63, p <.01).

Association Between Strategic Planning and ADHD

For the second hypothesis, the association between strategic planning and ADHD was examined and it was hypothesized that students with less optimal use of strategic planning would have more ADHD risk and more ADHD symptoms. Results showed that less optimal use of executive functions was significantly associated with more ADHD risk in students as the correlation indicates a weak downhill (negative) linear relationship (r_s (273) = -.36, p <.01). Similarly, it was shown that students with less optimal executive functions seemed to have more ADHD symptoms as the correlation (r_s (273) = -.48, p <.01) indicates a weak downhill (negative) linear relationship.

Strategic Planning as a Predictive Factor

For the last hypothesis, the EFI strategic planning subscale and the CAARS subscales (ADHD index and ADHD DSM) were used to further examine the relation between strategic planning and ADHD. It was hypothesized that less optimal use of strategic planning in students could predict more ADHD risk and more ADHD symptoms.

A simple regression was used to predict ADHD risk based on the ADHD index subscale with strategic planning as the independent variable. It was shown that less optimal use of strategic planning significantly predicted students who were at risk of developing ADHD (F (1,271) = 41.2, $p < .01$ $R^2 = .13$). The regression coefficient showed a high downhill (negative) linear relationship ($b = -0.88$, $p < .01$) and indicate that a one-point increase in strategic planning corresponded, on average, to a decrease in an ADHD risk score of 0.9. The results indicate that less optimal use of strategic planning strongly predicted more ADHD risk.

Additionally, a simple regression was used to predict ADHD symptoms based on the ADHD DSM subscale with strategic planning as the independent variable. It was shown that less optimal use of strategic planning significantly predicted students with more ADHD symptoms (F (1,271) = 83.74, $p <.01$ $R^2 = .23$). The regression coefficient showed a perfect downhill (negative) linear relationship ($b = -1.40$, $p < .01$) and indicate that a one-point increase in strategic planning corresponded, on average, to a decrease in ADHD symptoms of 1.4. The results indicate that less optimal use of strategic planning strongly predicted more ADHD symptoms.

Discussion

The purpose of this study was to investigate the relation between executive functions (in particular that of strategic planning) and ADHD in university students. The main aim of the study was to evaluate the general association between executive functions and ADHD, the association between strategic planning and ADHD, and the possibility of strategic planning as a predictor of ADHD in university students. The results support previous research (Sjöwall & Thorell, 2014) as it was found that there was strong association between general executive functions and ADHD. Moreover, supporting previous research (Kofman et al., 2008), the results in the present study also showed a moderate association between strategic planning and ADHD in students.

Additionally, to clarify the relationship between executive functions and ADHD further, this study also investigated whether strategic planning could be a predictor of ADHD. The results supported the hypotheses and showed that less optimal use of strategic planning was a strong predictor of ADHD. The negative linear relationship between strategic planning and the ADHD index scores indicate that students with less optimal use of strategic planning had more risk of developing ADHD. Similarly, the negative linear relationship between strategic planning and the ADHD DSM scores indicate that students with less optimal use of strategic planning had more ADHD symptoms.

The study contributes to previous research (Kofman et al., 2008; Sjöwall & Thorell, 2014) by clarifying the extend executive functions affect ADHD, and by specifying strategic planning as a variable predicting ADHD risk and ADHD symptoms. The findings found support previous theories (Nigg et al., 2005; Willcutt et al., 2005; Thorell, 2007) that suggest deficits in executive function as an underlying problem in ADHD. Moreover, it explains why those with ADHD also tend to have deficits in executive functions (Barkley, 1997; Holmes et

al., 2010), Moreover, it explains why ADHD symptoms could be reduced after certain training of executive functions (Shuai et al., 2021).

The findings of the study imply that executive functions, especially strategic planning, is a central feature of ADHD. However, it does not rule out the possibility of other factors that could affect executive functions and ADHD symptoms. For instance, the effect of mood symptoms such as depression and anxiety experienced by students (Mohamed et al., 2021), or the effect of other comorbid disorders related to ADHD (Newcorn et al., 2007). Finally, while this study has shown that strategic planning plays an important role in the risk and increase of ADHD symptoms, it is important to also consider other executive functions, and how they could individually affect ADHD. Namely, motivational drive, organization, empathy and impulse control. Moreover, the present study does not rule out the possible effects of these other executive functions on strategic planning. For example, empathy could play a role in choosing one's strategic choices (Lindsay et al., 2018), whereas one's motivational drive could impact the implementation of a planning a strategy (Martin, 2008).

Limitations and Future Research

A first limitation of the study is that there might have been a response bias. Research has shown (McCann & Roy Byrne, 2004) that there is often underestimation or overestimation when identifying ADHD symptoms using self-tests. In this case, although the study used tests that were reliable to measure ADHD, the self-judgement of ADHD symptoms could have been a problematic factor that was unaccounted for. Future studies could consider relatives, friends, and teachers to also score participants to see whether similar observations would be found, this would also give a better overview of how the participant's symptoms might look like in different situations. Moreover, for greater accuracy, future studies could also consider using a combination of different measures. It is important to keep in mind,

however, that the process of a proper diagnoses often takes a lot of time. The present study also used a fairly large sample and surveys that were frequently used before.

A second limitation of the study is that there was a higher ratio representing women than men. Faulty conclusion could be made due to this misrepresentation, for instance, that women have more executive deficits. However, there are mixed findings about this, for example, no significant gender difference was found in executive functions (Grissom & Reyes, 2019). A third limitation of the study is the validity of the study to measure executive functions. For example, the study only measured behaviors of executive functions and did not measure parts of the brain such as the prefrontal cortex (which is often related to executive functions). The study also did not measure cognitive processes which could have been more directly linked to behavior. Another limitation is that the study did not consider factors such as stress or mood disorders. For example, stress (Paralkar & Knutson, 2021) or disorders such as depression and anxiety (Alexander & Harrison, 2013) might have influenced the executive functions-ADHD association.

Lastly, it should be mentioned that data collection of the study was done during the Corona Virus Disease (COVID) pandemic. Research has shown that COVID has major effects on physical and psychological symptoms (Kibbey et al., 2021). Hence, participants in the present study might have experienced an even greater amount of stress. Moreover, research has found that there are often cognitive deficits associated to COVID (Hampshire et al., 2021). Thus, it is possible that COVID might have also affected participants' executive functions in this study. Future studies should consider the long-term effects of COVID on participants and how it could have affected their executive functions and ADHD symptoms. Concerning ADHD, it is possible that due to compensation skills gained from coping with the disorder (Canel et al., 2017), participants were even better able to manage their ADHD symptoms when having COVID (because they are already used to compensating). However, it

is also possible that they were less able to manage symptoms, for example, because their compensation skills were not enough to buffer the greater executive deficits that were experienced.

Despite these limitations, the study also had some core strengths. First of all, the study represented university students well, especially first year psychology students. Lastly, the study consisted of a homogenous group, this means that it was able to rule out possibilities of other factors that could have influenced the study. Such factors include, for instance, differences in IQ, age, executive functions, and differences in the situation or environment of the students.

Conclusion and Relevance

The present study has shown that ADHD symptoms experienced by university students can proportionally be explained by deficits in executive functioning, especially that of strategic planning. The study has clinical relevance to those who are diagnosing ADHD in university students. Mainly, that executive functions are a possible additional symptom in adults with ADHD. Hence, clinicians should consider executive functions in the diagnosis of ADHD. Clinical associations such as the Nederlands Instituut van Psychologen (NIP), for example, already recommend measuring executive functions as part of the neuropsychological diagnostic process ("Diagnostiek - Signalering, screening en diagnostiek - Richtlijn ADHD - Richtlijnen jeugdhulp en jeugdbescherming", 2022).

The present study has found that, on a subjective level, executive functions (in particular strategic planning) affect ADHD symptoms. To increase validity of these findings, it should be considered to also measure students' executive functions during their daily life. For instance, in addition to the questionnaires, the students could be asked to keep track of how they are regulating their organization skills and how they are planning their tasks throughout the day using a diary. In regard with treatment, perhaps students could be

encouraged to follow a training on strategic planning. It was shown that training certain executive functions in those with ADHD improved and helped their symptoms (Shuai et al., 2021). Future researchers should consider to further explore the effect of training on executive functions, particularly, the effect of training on strategic planning.

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Appendix: Analysis and Results

Table 1

Descriptive Statistics

	N	Mean	Std. Deviation
Motivational Drive	283	14,19	2,665
Organization	283	15,16	3,815
Impulse Control	283	17,26	3,271
Empathy	282	26,52	2,993
Strategic Planning	282	24,18	4,235
Total Score	282	97,30	10,060
CAARS ADHD Index	274	50,0423	10,25580
CAARS ADHD DSM	274	52,7995	12,27137
Valid N (listwise)	273		

Table 2

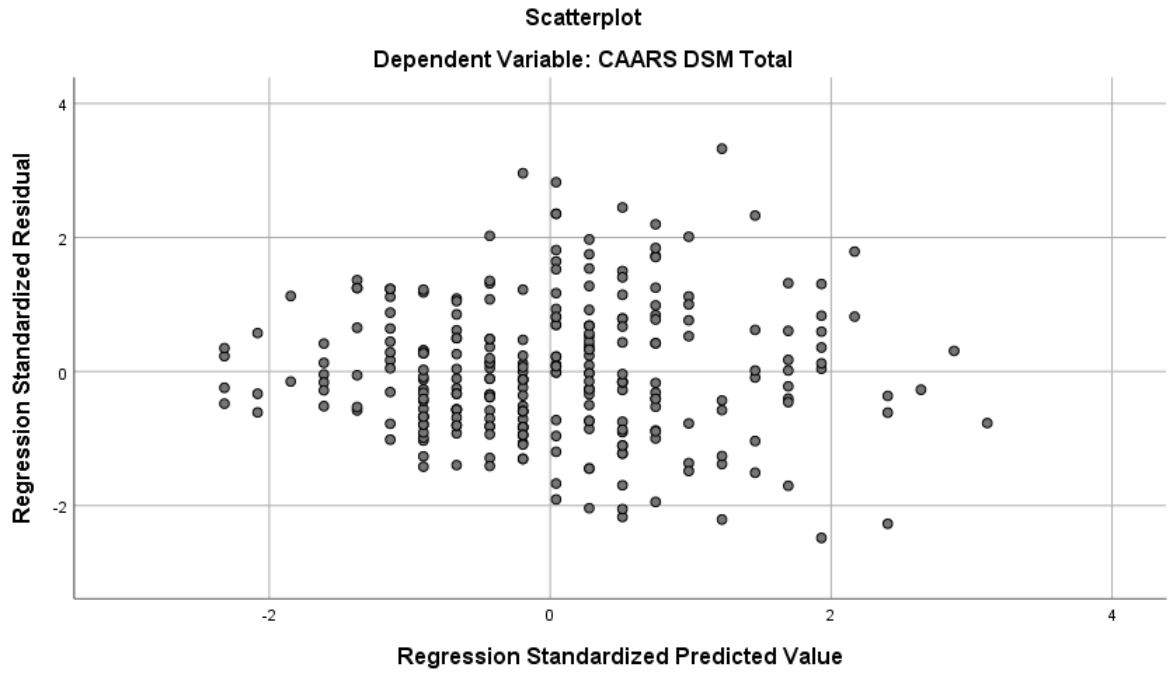
Shapiro Wilk Normality Test

	Shapiro-Wilk		
	Statistic.	Df.	Sig.
Motivational Drive	,979	283	,000
Organization	,986	283	,008
Impulse Control	,979	283	,000
Empathy	,887	282	,000
Strategic Planning	,985	282	,004
Total Score	,995	282	,470
CAARS ADHD DSM	,962	274	,000
CAARS ADHD Index	,967	274	,000
CAARS Inattention	,961	274	,000
CAARS Hyperactivity	,967	274	,000
CAARS Impulsivity	,963	274	,000
CAARS Self control	,977	274	,000
CAARS DSM Inattention	,965	274	,000
CAARS DSM Hyperactivity/Impulsivity	,950	274	,000

Note. Df: Degrees of Freedom, Sig: Significance

Figure 1

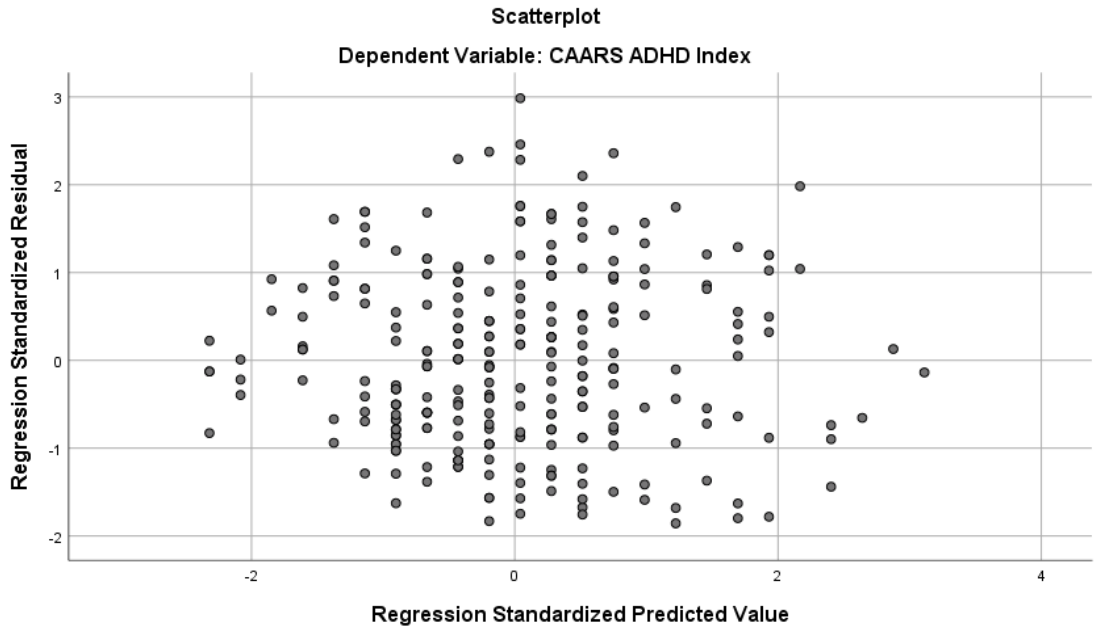
Scatterplot of Residuals



Note. Independent variable: strategic planning

Figure 2

Scatterplot of Residuals



Note. Independent variable: strategic planning

Table 3

Correlations

			Total Score	Strategic Planning	CAARS ADHD Index	CAARS ADHD DSM
Spearman's rho	Total Score	Correlation Coefficient		,719**	-,552**	-,626**
		Sig. (2-tailed)		,000	,000	,000
		N	282	282	273	273
	Strategic Planning	Correlation Coefficient	,719**		-,355**	-,484**
		Sig. (2-tailed)	,000		,000	,000
		N	282	282	273	273
	CAARS ADHD Index	Correlation Coefficient	-,552**	-,355**		,798**
		Sig. (2-tailed)	,000	,000		,000
		N	273	273	274	274
	CAARS ADHD DSM	Correlation Coefficient	-,626**	-,484**	,798**	
		Sig. (2-tailed)	,000	,000	,000	
		N	273	273	274	274

**. Correlation is significant at the 0.01 level (2-tailed).