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## **ASSESSMENT OF EMOTIONAL CONTROL FROM THE PERSPECTIVE OF YOUNG ADULTS WITH ADHD**

### OCENA KONTROLI EMOCJONALNEJ Z PERSPEKTYWY MŁODYCH DOROSŁYCH Z ADHD

#### **Abstrakt**

**Cel:** Ocena kontroli emocjonalnej z perspektywy młodych dorosłych z ADHD.

**Metoda:** W badaniu ankietowym wzięło udział 86 młodych osób dorosłych (M =

#### **Abstract**

**Objective:** Assessment of emotional control from the perspective of young adults with ADHD.

23,14; SD = 2,06). Respondenci wypełnili dwa narzędzia: Skalę Kontroli Emocji Courtaulda (CECS) oraz ustrukturyzowany wywiad diagnostyczny ADHD dla dorosłych (DIVA 2.0).

**Wyniki:** Pomimo tego, że dorośli z ADHD częściej wybierają negatywne emocje jako dominujące w swoim życiu lub częściej borykają się z niemożnością nazwania warunków, których doświadczają, nie stwierdzono statystycznie istotnych różnic między młodymi dorosłymi z ADHD i bez tłumienie doświadczanych stanów emocjonalnych.

**Wniosek:** Postrzeganie przez dorosłych z ADHD regulowania ich stanów emocjonalnych może być zniekształcone z powodu większej liczby trudnych emocji, których doświadczają w życiu codziennym.

#### SŁOWA KLUCZOWE

ADHD, supresja, gniew, lęk, depresja, aleksytymia

**Method:** 86 young adults ( $M = 23.14$ ;  $SD = 2.06$ ) took part in the questionnaire study. The respondents completed two tools: the Courtauld Emotional Control Scale (CECS) and the structured ADHD diagnostic interview for adults (DIVA 2.0).

**Results:** Despite the fact that adults with ADHD more often choose negative emotions as dominant in their lives or more often struggle with the inability to name the conditions they experience no statistically significant differences were found between young adults with ADHD and without it disturbing in terms of suppressing the experienced emotional states.

**Conclusion:** Adult ADHD adults' perceptions of regulating their emotional states may be distorted due to the greater number of difficult emotions they identify in their daily lives.

#### KEYWORDS

ADHD, suppression, anger, anxiety, depression, alexithymia.

## 1. Introduction

Young adults diagnosed with attention deficit hyperactivity/impulsivity disorder (ADHD) account for 2%–5% of the world's population. Previously, this neurodevelopmental disorder was only associated with children; however, at present, it is known that it also occurs in 20%–80% of adults diagnosed with it in childhood (Christiansen et al., 2019; Holst & Thorell, 2019; Materna et al., 2019). Compared to children with these symptoms, young adults experience consequences resulting from inattention or hyperactivity/impulsiveness in everyday life to a similar extent (Sjöwall & Thorell, 2019). They are vulnerable to unemployment, road accidents, addiction to psychoactive substances or engagement in activities to purposefully break the law more often than their healthy peers (Halleland et al., 2019; McDonagh et al., 2018). The literature also indicates effects such as failures in the educational and professional spheres, low self-esteem or interpersonal problems (Faraone et al., 2015; Holst & Thorell, 2019; Materna et al., 2019). Moreover, it is recognised that the ADHD diagnosis is associated with the risk of other disorders and mental difficulties (Dan & Raz, 2015; Faraone et al., 2015; McIntosh et al., 2009). Recent research more

often indicates problems with the regulation of emotional states among this group of people (Shaw et al., 2014, Surman et al., 2013). One can observe how over time, despite scientific progress, researchers like to revisit the original ADHD concepts. Shaw et al. (2014) remind that emotional dysregulation was in fact particularly emphasised in the clinical picture of ADHD alongside the concept of minimal brain damage (before the introduction of the Diagnostic and Statistical Manual of Mental Disorders III – DSM III). Wender (1995), the pioneer of ADHD-related issues, also devoted his attention to this issue and introduced three symptoms related to the regulation of emotions, i.e. *affective lability, stress intolerance and hot temper*, into the Utah criteria. Currently, some researchers still believe that because dysregulation occurs so frequently in the clinical picture of ADHD, it should be permanently included in the criteria for diagnosing the disorder (Barkley, 2015). Ultimately, insufficient emotional self-regulation significantly impairs the quality of life of patients with the disorder (McDonagh et al., 2018; Surman et al., 2013). Nevertheless, studies, which do not confirm the above findings, also exist. They do not identify any differences in the regulation of emotions between adults with ADHD and their peers without this diagnosis (Materna et al., 2019). Although 41 years have passed since the introduction of DSM III, the on-going discussions on this topic seem to invite researchers to engage in this discourse again. The purpose of this article is to assess emotional control from the perspective of young adults with ADHD.

## 2. (Dys)regulation of emotions in ADHD

Findings found in the literature confirm that 34%–70% of adults with ADHD have difficulties in regulating the experienced emotional states (Materna et al., 2014; Shaw et al., 2014; Faraone et al., 2019). It should be noted that researchers describe the understanding of this ability in various ways (Christiansen et al., 2019). Some perceive it as increased instability and intensity of experienced negative emotions as well as a slow return to the initial state before their activation (Rüfenacht et al., 2019). In some cases, when defining it, more focus is given to the impulsive behaviour stemming from low frustration tolerance and short temper, i.e. emotional impulsivity (Christiansen et al., 2019; Surman et al., 2013). In turn, occasionally, a low emotional regulation profile is interpreted on the basis of scales included in descriptive questionnaires relating to disorders associated with attention, anxiety, depression and aggression (Spencer et al., 2011). The recurring issue in the above studies comes down to problems with experiencing and expressing difficult emotions. However, Shaw et al. (2014) and Sjöwall & Thorell (2019) seem to go a step further and, when writing about problems with regulation, indicate approaches for dealing with the consequences resulting from the above issues. They emphasise strategies, which are undertaken by a person with ADHD to manage the emotional states experienced at a given moment. Emotion regulation is one of self-control forms (Kokkonen & Pulkkinen, 2001). The entire process of it can be carried out in various ways. Some people will suppress or avoid their emotional states

in difficult situations, while others will reveal them on the outside. This will be evident in their behaviour, e.g. through overworking (Kulik & Kajka, 2016, Gross, 2002; Sjöwall & Thorell, 2019).

### 3. Emotional regulation strategies

In order to be able to apply adequate and constructive strategies in regulating one's emotions, it is undoubtedly necessary to have developed emotional and social skills. To assess these competences, Friedman et al. (2003) asked people with ADHD to watch films, which touched upon emotional themes. The results of this study indicate that adults in the clinical group used more words to describe the scenes in the film; however, compared to the control group, fewer of those words were related to the issue of emotions. Friedman et al. (2003) explain that the decreased attention of people with ADHD to emotional states while watching the films could be caused by higher alexithymia scores obtained by those adults. Alexithymia is characterised by the inability to identify and name one's feelings, and as it turns out, it is a common difficulty affecting both children and adults with ADHD (Donfrancesco et al., 2013; Edel et al., 2010). Due to the low competences in naming own experiences, emotions may be suppressed. This can ultimately lead to uncontrolled outbursts of anger and aggressive behaviour (Rüfenacht et al., 2019). Unfortunately, this form of expression is socially unacceptable by the immediate environment and may be associated with high personal costs (Kulik & Kajka, 2016). Consequently, people who express their emotions inappropriately may fear their uncontrolled reactions (Materna et al., 2014). In their studies, Edel et al. (2010) confirm the relationship between alexithymic features in adults with ADHD both with difficulties in accepting their feelings and the experienced social anxiety. Some studies indicate that adults with ADHD have a lower ability to control anxiety than healthy people and that the difficulty in modulating anxiety is related to the profile of emotional dysregulation (Dan & Raz, 2015; Spencer et al., 2011). Depending on which strategy an adult with ADHD adopts, problems with controlling emotional states might increase or decrease fear (Cisler et al., 2010). Since the emotional and social competences of such a person are not highly developed in this respect, they most often use maladaptive coping strategies in circumstances involving strong emotions. The situation is very similar in the case of the feeling of sadness. The attention deficit hyperactivity/impulsivity disorder belongs to heterogeneous disorders, the rates of depression among individuals diagnosed with it are often elevated, and depression experienced by some people is an (undiagnosed) comorbidity (Luo et al., 2019; McIntosh et al., 2009). According to the data of the National Comorbidity Survey Replication, the incidence of coexistence of a major depressive episode with ADHD is 18.6% (McIntosh et al., 2009). It is emphasised that in adults, the coexistence of these two disorders is a frequent cause of numerous difficulties in the social and personal spheres (McIntosh et al., 2009). Studies by Foran & O'Leary (2013) show that there is a connection between

the inability to name emotions (alexithymia) and the experienced symptoms of depression. It is a source of challenges encountered by people with ADHD when coping with experienced emotions. It resembles a vicious circle pattern. Specifically, adults with ADHD do not recognise their emotional states correctly as they are afraid of them. They fear them because by suppressing these emotions, they express them inadequately and experience rejection. Consequently, as a result of rejection and numerous failures within the emotional and personal field, comorbidities, such as depression or anxiety, often deepen.

When presenting the theoretical background of the issues concerning the regulation of emotions by young adults with ADHD, it is noted that emotional dysregulation may only be a result of suppressing emotions and the inability to name them. The present study investigated whether young adults with ADHD would suppress their emotional states during difficult situations accompanied by anxiety, depression and anger. The authors posed three research questions: (1) are there any statistically significant differences in the intensity of emotional control and ADHD symptoms between young adults in the clinical and control groups; (2) does the emotional control (anger, anxiety, depression) occur alongside ADHD symptoms in young adults in this study; (3) are there statistically significant differences in the frequency of choosing the experienced dominant emotion between the respondents? It was assumed that adults with ADHD would be more likely to suppress their emotions than people without this diagnosis and that the severity of inattention and impulsiveness would be significantly associated with higher emotional suppression due to the fear of being unable to control emotions. Thus, the examined adults in the clinical group will significantly differ from those in the control group in terms of the frequency of selected dominant negative emotions (anxiety, anger, sadness).

#### **4. Materials and method:**

The survey had a form of a questionnaire and was conducted by a correspondence method in 2020. When contacting the clinical group and the corresponding control group, the method of deliberate randomisation via social media was employed. Two posters with an invitation to participate in scientific research were posted on the official Facebook Fanpage of Empiryczny Zespół Badawczy ADHD [Eng. The ADHD Empirical Research Team]. The first was addressed to young adults experiencing difficulties resulting from ADHD symptoms, while the second was aimed at young adults without these symptoms. The decision of the final inclusion of the respondents in the clinical and control groups was determined simultaneously by three fulfilled criteria: (1) the original declaration of the person volunteering in accordance with the instructions (N = 51/N = 60); (2) having or not having a psychiatric diagnosis confirming ADHD in childhood or adulthood (N = 43/N = 60); (3) the result of (not) meeting the criteria and severity of ADHD symptoms obtained in the Diagnostic Interview for ADHD in Adults

(DIVA 2.0) completed by the respondents, which indicated the diagnosis or absence of ADHD ( $N = 43/N = 51$ ). Eventually, a group of 51 young adults from the control group were matched with participants from the clinical group in terms of sex and age ( $N = 43/N = 43$ ) (Zieliński, 2002). Each person who applied to take part in the research gave their voluntary consent both to participate in the project as well as to the subsequent publication of the collected results. The project was approved by the Committee on Publication Ethics of the Institute of Psychology at the John Paul II Catholic University of Lublin (KEBN\_26/2020).

### **Description of research tools:**

The respondents completed particulars and two questionnaires. The data from the particulars included basic questions about socio-economic variables and requests to identify one dominant emotion that the respondent experienced in their life. The results relating to the socio-economic variables are presented in Table 1 next to the group description, while the identification of the respondents' dominant emotion is demonstrated as the outcome of the research. The first questionnaire involved the Structured Diagnostic Interview for ADHD in Adults (DIVA 2.0) (Kooij & Francken, 2010). It is commonly applied in research and clinical practice (Kajka et al., 2020; Kooji, 2013; Ramos-Quiroga et al., 2019). Its important advantage is the possibility to diagnose ADHD and recognise the exacerbation of its symptoms in adults who were not formally diagnosed in childhood (Semeijn et al., 2013). The examined person indicates which of the symptoms are present now and which they experienced in childhood. The subject should meet at least 4 out of 9 possible criteria relating to both the present time and childhood. The scale also allows the calculation of the intensity of the symptoms of inattention (0 to 55) and hyperactivity/impulsiveness (0 to 44). The analysis of the psychometric parameters of this investigation proved its reliability and accuracy (Ramos-Quiroga et al., 2016).

The last instrument completed by the respondents was the Courtauld Emotional Control Scale (CECS) (Watson, Gren, 1983) in the Polish adaptation of Juczyński (2012). The scale enables the assessment of the subjective beliefs of the respondents regarding their ability to control their responses when experiencing difficult emotions, such as anxiety, sadness or anger (Juczyński, 2012). The assessed individual responds to 21 statements using a four-point scale from 1 (*almost never*) to 4 (*almost always*). The higher the score achieved by the respondent, the stronger the inclination towards emotional self-suppression. The psychometric properties of the instrument are satisfactory (Juczyński, 2012).

### **Group description:**

86 young adults ( $M = 23.14$ ;  $SD = 2.06$ ) participated in the questionnaire study. The respondents' educational level ranged from primary to higher education (Table 1). However, most of the participants were students. The analysis conducted by the Mann-Whitney U test indicated that despite its diversity, the group was homogeneous with

respect to education ( $U = 849.0$ ;  $p = 0.408$ ). Most of the respondents came either from a city with over 400,000 inhabitants or a town with up to 50,000 inhabitants. In terms of the place of residence, the analysis involving the Mann–Whitney  $U$  test demonstrated no statistically significant differences between the groups ( $U = 911.5$ ;  $p = 0.905$ ). The respondents constituted a homogeneous group in terms of sex and age (Table1). No differences were noted with regards to the participants' diseases ( $X^2(1) = 0.717$ ;  $p = 0.397$ ) or administered medications ( $X^2(1) = 1.049$ ;  $p = 0.306$ ). In order to monitor the potential impact of significant events occurring in the participants' lives on their health, analysis of differences was conducted by the chi-squared test. The results showed that the groups were homogeneous with regard to this variable ( $X_w^2(1) = 0.156$ ;  $p = 0.623$ ).

Table 1. Descriptive statistics of the socio-demographic variables by groups

Variables		ADHD Group	Control Group	Group comparison
		N	N	
Age	M	23.02	23.26	$t = 0.521$
	SD	2.06	2.07	
	Min	20.00	20.00	
	Max	28.00	28.00	
Sex	female	25.00	25.00	$X^2 = 0.000$
	male	18.00	18.00	
Place of residence	V	7.00	9.00	$Z = 0.119$
	T 50	10.00	6.00	
	C 150	7.00	8.00	
	C 400	19.00	20.00	
Education	PE	1.00	0.00	$Z = 0.828$
	SE	6.00	4.00	
	S	30.00	32.00	
	HE	6.00	7.00	
Relationship status	Si	33.00	22.00	$X^2 = 6.103^*$
	Re	10.00	21.00	
Medication	Yes	3.00	1.00	$X^2 = 1.049$
	No	40.00	42.00	
Comorbidities	Yes	4.00	2.00	$X^2 = 0.717$
	No	39.00	41.00	
Significant events	Yes	3.00	4.00	$X^2 = 0.156$
	No	40.00	39.00	

Note. PE – primary education; SE – secondary education; S – studies; HE – higher education; Si – single; Re – in a relationship; V – village; T 50 – town up to 50,000 inhabitants; C 150 – city up to 150,000 inhabitants; C 400 city up to 150,000 inhabitants; \* $p \leq 0.05$

Allergies and asthma were identified among participants with comorbidities. The medications taken by the respondents were neutral with respect to this study, which was confirmed based on the medical leaflets. Among the significant events, which could impact the health of the study participants, were break-up with a boyfriend/girlfriend ( $N = 1$ ), loss of a valuable item ( $N = 2$ ) and conflict with a friend ( $N = 4$ ).

## 5. Results

### Controlling emotions and ADHD symptoms

The first step involved the determination of statistically significant differences between the groups with regards to emotional control and ADHD symptoms. For this purpose, the Student's t-test was performed. Evaluation of the test results (Table 2) indicated the presence of statistically significant differences only in the severity of the inattention ( $t(42) = 16.570$ ;  $p = 0.001$ ) and hyperactivity/impulsivity ( $t(42) = 8.740$ ;  $p = 0.00$ ) symptoms between the groups. The mean value of the severity of attention disorders was considerably higher in the group of people diagnosed with ADHD than in the control group ( $M = 26.37$ ;  $SD = 10.43$ ;  $M = 0.0$ ;  $SD = 0.0$ ). The average severity of the hyperactivity/impulsivity symptoms was statistically significantly higher in the group diagnosed with ADHD than in the control group ( $M = 16.02$ ;  $SD = 8.71$ ;  $M = 3.34$ ;  $SD = 3.78$ ). Table 2 demonstrates the absence of statistically significant differences between the groups in terms of controlling emotions ( $t(42) = 0.784$ ;  $p = n/s$ )(anger –  $t(42) = 1.399$ ;  $p = n/s$ , anxiety –  $t(42) = 0.362$ ;  $p = n/s$ , or depression –  $t(42) = 0.376$ ;  $p = n/s$ ). The mean results obtained in these scales are comparable (Table 2).

Table 2. Analysis of the differences in the severity of ADHD symptoms and emotional control in the clinical and control groups

	ADHDGroup		ControlGroup		t	p
	M	SD	M	SD		
Attention disorders	26.37	10.43	0.0	0.0	16.570	0.001
Hyperactivity/ Impulsivity	16.02	8.71	3.34	3.78	8.740	0.001
Anger control	17.16	2.96	18.07	3.04	1.399	0.165
Anxiety control	16.90	1.88	16.74	2.26	0.362	0.718
Depression control	17.65	3.06	17.90	3.23	0.376	0.708
Total score for emotion control	51.72	6.17	52.72	5.64	0.784	0.435

The next step was to assess the correlation between ADHD symptoms (attention disorders, hyperactivity/impulsiveness) and the control of emotions (anger, anxiety, depression). For this purpose, Spearman's rank-order correlation analysis was performed for the group of people with ADHD ( $N = 43$ ) (Table 3). Subsequently, linear regression analysis was conducted for these variables. The initial evaluation showed the



lack of statistically significant correlations between the symptoms of attention disorders and the control of emotions (anger, depression, anxiety) among people with ADHD in this study.

Table 3. Spearman's rank-order correlation analysis between the ADHD symptoms and subjective emotional control in adults with ADHD

	1	2	3	4	5
AD					
HI	0.642**				
AM	0.062	-0.075			
DC	-0,065	-0.078	0.297*		
AC	0.203	0.106	0.218	0.568**	
EC	0.066	-0.053	0.673**	0.849**	0.704**

**Annotation: AD – attention disorders; HI – hyperactivity/impulsivity; AM – anger management; AC – anxiety control; DC – depression control; EC – control of negative emotions; \* p = 0.05; \*\* p = 0.001**

The last research question concerned the differences in the frequency of choosing the dominant emotion by the respondents. Each participant could define only one overwhelming emotion that accompanies him or her on a daily basis. Among the listed states, the respondents wrote: lack of emotions, anger, anxiety, sadness, joy, excitement, surprise and calmness (Fig. 1).

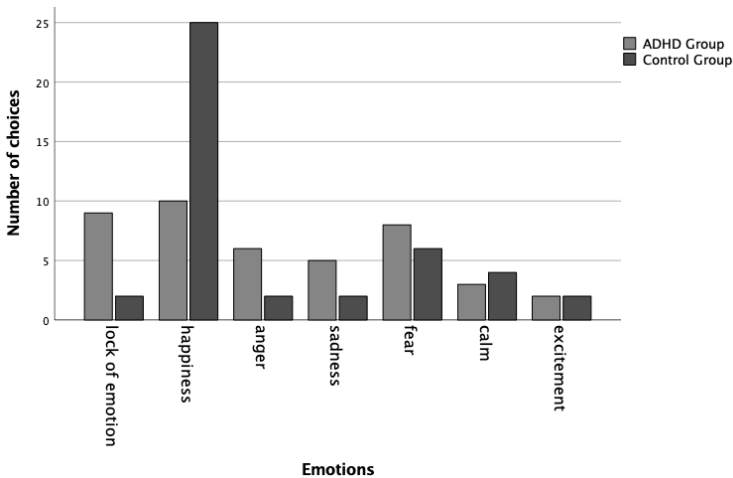


Fig. 1 Visual representation of the frequency of choosing a dominant emotion by groups

Based on the premises of the studies presented in the introduction to this article, it was assumed that young adults with ADHD could suppress anger, anxiety and sadness more often. Accordingly, these emotions should be chosen by them more

frequently. The conducted chi-squared tests revealed that belonging to a clinical/control group had no relation to the frequency of choosing emotions such as anger, anxiety and sadness ( $X^2(1) = 2.205$ ;  $p = n/s$ ;  $X^2(1) = 0.341$ ;  $p = n/s$ ;  $X^2(1) = 1.400$ ;  $p = n/s$ ) (Table 3). However, the comparison of the differences between the groups regarding the overall choice of the dominant negative emotions (the sum of the choice of anger, anxiety, sadness) demonstrated significant differences between the groups ( $X^2(1) = 4.214$ ;  $p = 0.04$ ). This means that compared to people from the control group, adults with ADHD chose negative emotions as the dominant ones significantly more often. Table 3 also shows that compared to people with ADHD, healthy individuals significantly more often experienced joy as the dominant emotion ( $X^2(1) = 10.840$ ;  $p = 0.001$ ). In contrast, compared to people without a diagnosis, adults with ADHD significantly more often mentioned the inability to recognise their emotional state as dominant ( $X^2(1) = 5.108$ ;  $p = 0.02$ ) (Table 4).

Table 4. Comparison of groups according to the choice of dominant emotions

Emotion	ADHD Group		Control Group		Group comparison
	N	%	N	%	
No Emotions	9	81.8	2	18.2	$X^2 = 5.108$ $p = 0.02$
Joy	10	26.8	25	71.4	$X^2 = 10.840$ $p = 0.001$
Sadness	5	71.4	2	28.6	$X^2 = 1.400$ $p = 0.237$
Anxiety	8	57.1	6	42.9	$X^2 = 0.341$ $p = 0.559$
Anger	6	75	2	25	$X^2 = 2.205$ $p = 0.138$
Calmness	3	42.90	4	57.1	$X^2 = 0.156$ $p = 0.693$
Excitement	2	50	2	50	$X^2 = 0.0$ $p = 1.00$
Negative Emotions	19	65.5	10	34.5	$X^2 = 4.214$ $p = 0.04$

## Discussion

Emotional dysregulation is considered to be a complex construct consisting of both experienced emotions and strategies that a person adopts to regulate them (Gross, 2001; Sjöwall & Thorell, 2019). This distinction seems to be significant; however, it is frequently overlooked in scientific research. There are more studies focused on emotional reactivity, short temper and irritability of people with ADHD than on the regulatory strategies adapted by them. This is confirmed by a small number of studies in the field of suppression, which alongside modification, attention shifting, reassessment or avoidance of situations is an essential mechanism for managing emotions (Matthies et al., 2014).

The present study aimed to assess the emotional control in young adults with ADHD as well as to determine whether young adults with ADHD suppressed their

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emotional states more than people without this diagnosis. The obtained results did not show any statistically significant differences between young adults with and without ADHD regarding the suppression of experienced states, and the intensity of their symptoms was not significantly connected to this strategy of regulating emotions. This means that in the subjective perception of adults with ADHD, they appeared to control their difficult emotions (anger, anxiety, fear) in a moderate manner (neither overly labile nor overly suppressive), i.e. similarly to people without this diagnosis. The emotional sphere is modulated at the cognitive, physiological and behavioural levels. This study focused on the cognitive perceptions of emotional control by people with ADHD. The obtained results are inconsistent with research, in which suppression was examined in individuals with ADHD at the physiological level. In the studies by Materna et al. (2014), adults with ADHD suppressed their emotional reactions at the physiological level significantly more often than healthy people. However, it can be noticed that there are studies, in which differences between the psychophysiological results and self-report questionnaires exist among people with ADHD. The work of Matthies et al. (2014) indicated that people who were in the group, which suppressed emotions of sadness, needed more time to regulate their state than healthy adults who accepted this emotion. However, in self-report results, no statistically significant differences were noted in the regulation of emotions between the groups of healthy individuals and those with ADHD. It is possible that adults with ADHD experience difficult emotions (anger, anxiety, depression) throughout their lives for so long that they no longer perceive being overwhelmed by these conditions to an extent assumed by researchers or psychophysiological data (Matthies et al., 2014). This conclusion seems to be consistent with the results obtained in this study, which revealed that compared with healthy peers, adults with ADHD chose difficult emotions as the dominant ones in their lives significantly more often. In contrast, the group of adults with ADHD, who significantly more frequently chose the lack of dominant emotion in their life than the group of healthy individuals, might have used an avoidance strategy – cutting themselves off from exposure to experiences or the effects that they bring.

Perceptions of regulating emotional states by adults with ADHD may be distorted because of the greater number of difficult emotions they identify in their daily lives. As Edel et al. (2010) claim, the inability to define adequate experiences related to emotional situations may result from fear of accepting own feelings or the consequences that they bring.

Future research should include a larger group of subjects. Similar studies might significantly influence therapeutic procedures and help adults with ADHD. Expanding awareness might help patients to better recognise their emotional states as well as to cope with difficult situations.

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