Self-concept in Children with ADHD

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Abstract

The thesis is dealing with self-concept in children with ADHD. These data were obtained from 122 primary school students, out of which 54 children suffer from ADHD and 68 are healthy. They were administered the SPAS test (Student's Perception of Ability Scale) and the grades from their latest school report were used as an objective criterion. The findings show that the self-concept of children with ADHD in school environment is lower than the self-concept of healthy children in all measured domains, and in two of them significantly. Children with ADHD exhibit a tendency to Positive Illusory Bias. Although the self-concept of children with ADHD is bad in comparison to healthy children, the teachers' perception of these children is even more negative.

Key words: ADHD, self-concept, Positive Illusory Bias

Introduction

At the moment, ADHD is already a well explored topic. As Barkley (2015, p. 37) states: „currently, it is undoubtedly one of the most researched children's disorders". The scientific community is devoting a lot of attention to this topic and therefore the body of knowledge keeps growing. Within the framework of this study, we focus on self-concept of children with ADHD, in particular on their self image and objective evaluation of them in comparison to healthy children.

Symptoms

These children's problems are mostly caused by the core symptoms of ADHD: their impaired ability to concentrate and excessive activity and impulsiveness. Individual symptoms are results of these three deficits. Since every child manifests these deficits in a different ratio, their symptoms may differ a lot as well. Also, the intensity of the symptoms is different for every child and moreover, it even fluctuates over time in each child's case.

Historically, the outlook on this syndrome has evolved and gradually, the American and European notion of it have gone in different directions. While in North America, the symptoms connected to ADHD were perceived as borderline normal, in Europe they were seen rather as extreme and unusual and were often associated with brain dysfunctions, but in the last few years, better and easier access to information (mainly from the internet) allowed for the two different approaches to slowly reunite. (Barkley, 2015).

Self-concept

There is a great number of definitions of self-concept available in specialized literature. We find the definition by M. Blatný et al. (2010, p. 107) to be accurate and simple: „Self-concept is a summary of ideas and judgments one holds about themselves". It is the perception of oneself, it evolves in time and it is affected by the surrounding environment, the experience gained in this environment, predispositions of the particular individual, their innate temperament and personality traits. Contemporary expert view characterizes self-concept as multifaceted, hierarchical and dynamic (Blatný et al., 2010).

Self-concept in Children with ADHD

No child is born with negative feelings towards themselves. On the contrary, naturally, every single child thinks they are amazing. Whether they stick to this opinion or shift it towards the negative side depends on what sort of information the child receives about themselves from their close ones since the early age. The important thing is, that it's the child who interprets this information within the limits of their current cognitive and emotional abilities and afterwards they go back and select the inputs that correspond with their self-concept and thus they reassert it. (Blatný a kol., 2010;).

Experts who specialize on children with ADHD share the opinion that these children's self-concept is usually somewhere on the negative side to various extents (Barkley, 2015, Drtílková, 2006; Goetz, Uhlíková, 2009; Paclt, 2017). The reason behind this is, that unlike the healthy children, children with ADHD do not receive enough positive feedback from the people around them which keeps them from developing a healthy self-concept. The parents of these children see their negative self-assessment as natural and deserved. They are burdened by chronic stress, which gets combined with irritation caused by some current unresolved situation or disappointment from the contrariety of their child's abilities and the actual performance. The relationship between a hyperactive child and their teacher often exhibits similar characteristics.

In connection to this issue, Barkley, 2015 mentions „dysfunctional self-assessment". Considering the core symptoms, people are usually ambivalent about children with ADHD, which makes them strive for attention even more. This behavior makes others feel uncomfortable and therefore they either ignore them or reject them, that creates a vicious circle and causes more issues. When hyperkinetic children gain negative experience like this, whenever they sense even the slightest signs of disapproval, they consider it to be an attack and their reactions are overly sensitive.

The concept of „learned helplessness" by an American psychologist Martin Seligman is also relevant to this topic. This phenomenon is often a symptom of negative self-concept, because it is a result of repeatedly experiencing the inability to escape stressful situations. As testing on animals has proven, experiencing stress is not so much connected to how difficult the situation is, but rather to whether there is an escape or not. With children, the learned helplessness is usually formed due to the way they were raised by their parents and teachers at school (Höschl, 2013). After failing repeatedly, the child gives up the hope of being able to meet the expectations of their parents and teachers and subsequently they resign their efforts. That results in decreased initiative, worse learning effectiveness and increased negative emotions (Paclt et al 2007).

These children are naturally trying to avoid such sources of difficulties. They choose a compensation method which corresponds with their developmental stage, so for example: drawing attention to themselves, negativism, defiance, lying, etc. They also often tend to suppress the negative information and create an idealized and unrealistic self-image, which is harmful to their mental health (Svoboda et al., 2001).

Research Objectives and Hypotheses

The topic of this study is self-concept in children with ADHD. We are interested in how it stands in comparison with healthy children's self-concept, a well as with objective scales. Basing on knowledge from scientific literature, findings from some of the previous researches and according to the objectives of our research, we have defined the following research hypotheses:

The self-concept connected to academic success of children with ADHD is statistically significantly worse than in the case of healthy children.

Considering their grades, the self-concept connected to academic success of children with ADHD shows much bigger and more positive discrepancy in comparison to healthy children.

Characteristics of The Studied Population and Description of The Research Sample

We study the problematics of self-concept using a standardized SPAS test (Student's Perception of Ability *Scale), which is for children age 8 to 14. The respondents were* chosen for the test using the combination of two techniques – arbitrary choice and snowballing. We also reached out to the representatives of five elementary schools from different regions of Czech Republic which allowed us to get very diverse sample of children that come from cities of various sizes. The children who participated were from the following schools: Strossmayerovo náměstí Elementary School, Praha; Mikoláš Alš Elementary School, Praha; 4. Elementary School in Frýdek-Místek; Heřmanův Městec Elementary School and Chvaletice Elementary School. Besides the elementary schools, we also colaborated with paediatric psychiatry in Pardubice. The remaining respondents were acquired using the snowballing technique in the community of parents with children who have ADHD.

Altogether we administered the tests to 125 children, out of which 71 children were healthy and 54 children suffered from ADHD. There were three cases in which the respondents had to be excluded from the testing, because their results could not be evaluated. Therefore, in the end, the research sample consisted of 122 children – in particular 68 healthy children and 54 children with ADHD.

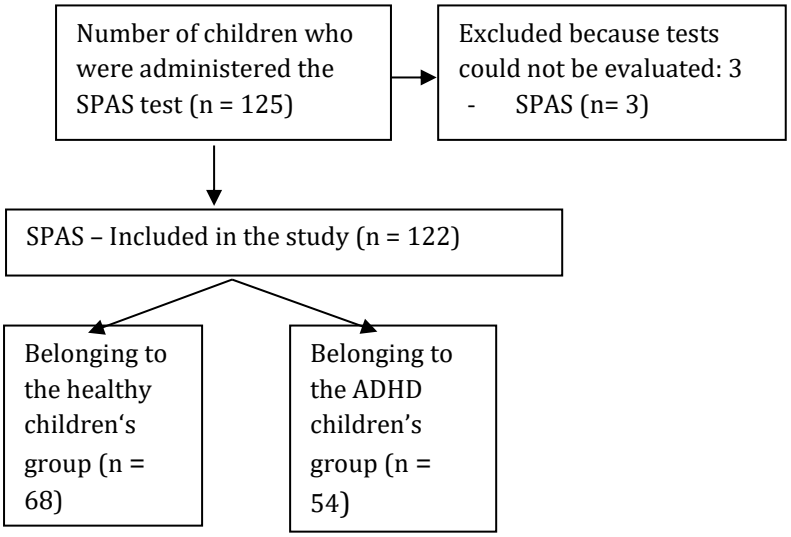


Image n. 1 – Pattern of choosing the sample

Research Methods

The SPAS test used in Czech Republic is based on the original American version, which was standardized on a sample of more than 600 children. The authors of the Czech version are Z. Matějček and M. Vágnerová, who had started using the trial version as soon as in 1981 (Matějček, Vágnerová, 1992). The experience they gained from it was used to create the final version, which was later submitted for validation and standardization.

The current version of the test comprises of 48 entries divided into 6 scales, each with 8 levels:

General skills – the scale captures the child’s idea of his overall intellect, ability to learn and other skills required for good academic performance.

Mathematics – the child assesses their own calculation skills and their stance towards mathematics.

Reading – reflects the self-image of the child in regards to reading – in particular how fast they are, how many mistakes they make and what they like.

Spelling – the child is asked about what they think about their eye for spelling, their verbal skills, and how good they are at taking dictations.

Writing – the child assesses how well their handwriting looks, whether it is easy to read and if they like writing.

Self-confidence – the scale captures how much faith the child has in their own abilities and how they perceive their position in comparison to their classmates.

By assessing the raw scores we get weighted scores for each one of the six scales and also a weighted overall score.

The method is available in a pen-and-paper version as well as a version for PC. Each version has its benefits and advocates. In case of tests, the computer version is an undisputed advantage as it is easy to administrate, standardized and saves both time and materials. Experience from practice also shows, that even children who get to choose between the two test versions tend to pick the PC version more often (Žilinčík, Novotný, 2014).

Results

Descriptive characteristics of the examined set

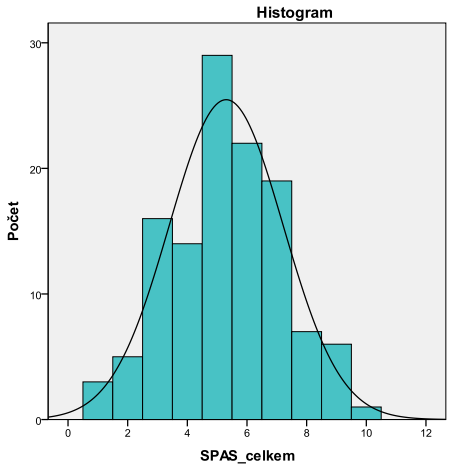
The children who participated in the study were age 10 – 14 and the majority of them were age 10 - 11. The average age of the respondents was 10,8. The number of boys in the research sample was higher than the number of girls. The reason for that is that there are considerably more boys in the group of children with ADHD. The group of healthy children consists of nearly equal number of boys and girls. The exact numbers of respondents sorted by their gender is in chart no. 1.

Chart no. 1 – SPAS: Numbers of respondents divided by their gender and ADHD diagnosis

		ADHD		
		no	yes	total
gender	boy	32	42	74
	girl	36	12	48
total		68	54	122

The overall raw scores converted to stens reach the average value of 5,3 with median and mode being value 5. The standard deviation is 1,9. The distribution of overall scores is normal, with the exception of sten 4 – see

graph no. 1 below.



Number

SPAS total

Graf č. 1 – SPAS: histogram with sten values

SPAS results

Healthy children (N = 68) show higher average self-concept (5,59) then children with ADHD (N = 54) whose average self-concept value was 4,94. Although this difference is not statistically significant (t = 1,87, sv = 120, p = 0,08).

Chart no. 2 – SPAS: Averages of sten values in the group of children with ADHD and in the control group.

	ADHD	number	average	standard deviation	t	sv	p
total SPAS	no	68	5,59	1,66	1,87	120	0,08
	yes	54	4,94	2,15			

After a more thorough analysis on the subtest level it turned out that this tendency is characteristic for all categories, but what was statistically significant was specifically only the difference between averages of the general skills subtest (t = 2,13, sv = 120, p = 0,04) and the mathematics subtest (t = 1,98, sv = 120, p = 0,05).

Chart no. 3 – SPAS: Averages of sten values of the group of children with ADHD and the control group.

	ADHD	number	average	standard deviation	t	sv	p
general skills	no	68	5,15	2,25	2,13	120	0,04
	yes	54	4,30	2,13			
mathematics	no	68	6,57	2,28	1,98	120	0,05
	yes	54	5,70	2,56			
reading	no	68	5,71	2,19	0,23	120	0,82
	yes	54	5,61	2,28			
spelling	no	68	5,24	1,98	1,22	120	0,23
	yes	54	4,78	2,16			
writing	no	68	6,15	2,06	0,32	120	0,75
	yes	54	6,02	2,39			
self-confidence	no	68	5,78	1,88	0,05	120	0,99
	yes	54	5,78	1,89			

If we compare healthy and hyperactive children separately for girls and for boys, we reach the following conclusions:

In case of the overall self-concept, healthy girls (N = 36) assessed themselves significantly more positively – the average value was 5,42 – then girls with ADHD (N = 12) – who had average value 4,08 – and the value of significance was 5% (t = 2,11, sv = 46, p = 0,04). Healthy boys (N = 32) also show higher total self-concept values then the hyperactive boys (N = 42), but the difference is not statistically significant. The respective values are shown in charts no. 4 and 5.

Chart no.4 – SPAS: Averages of sten values of healthy girls and girls with ADHD

	ADHD	number	average	standard deviation	t	sv	p
SPAS total	no	36	5,42	1,80	2,11	46	0,04
	yes	12	4,08	2,19			

Chart no. 5 – SPAS: Averages of sten values of healthy boys and boys with ADHD.

	ADHD	number	average	standard deviation	t	sv	p
SPAS total	no	32	5,78	1,50	1,35	72	0,18
	yes	42	5,19	2,10			

The same trend can be noticed on the subtest level. Healthy girls have conclusively higher self-concept than girls with ADHD. It is evident in all six subtests and the most in the case of writing subtest where the significance level was 5% (t = 2,31, sv = 46, p = 0,03) – see chart no. 6.

Chart no. 6 – SPAS: Averages of sten values of healthy girls and girls with ADHD according to subtests

	ADHD	number	average	standard deviation	t	sv	p
general skills	no	36	4,92	2,26	1,11	46	0,28
	yes	12	4,08	2,28			
mathematics	no	36	5,94	1,94	1,71	46	0,10
	yes	12	4,83	1,99			
reading	no	36	4,97	2,02	0,78	46	0,44
	yes	12	4,42	2,47			
spelling	no	36	5,47	2,37	1,44	46	0,17
	yes	12	4,33	2,35			
writing	no	36	6,58	2,21	2,31	46	0,03
	yes	12	4,92	2,02			
selfconfidence	no	36	5,50	1,84	0,40	46	0,69
	yes	12	5,25	1,91			

Although the boys' data was not as one-sided as it was in the girls' case, we can still conclude that healthy boys have higher academic self-concept then boys with ADHD. It shows in five out of seven school domains, with two of them having 5% statistical significance: general skills (t = 2,07, sv = 72, p = 0,04) and mathematics (t = 2,20, sv = 72, p = 0,03). More values are in chart no. 7.

Chart no. 7 – SPAS: Averages of sten values of healthy boys and boys with ADHD according to subtests

	ADHD	number	average	standard deviation	t	sv	p
general skills	no	32	5,41	2,24	2,07	72	0,04
	yes	42	4,36	2,11			
mathematics	no	32	7,28	2,44	2,20	72	0,03
	yes	42	5,95	2,67			
reading	no	32	5,53	1,92	1,28	72	0,17
	yes	42	4,88	2,10			
spelling	no	32	5,97	1,96	-0,02	72	0,99
	yes	42	5,98	2,15			
writing	no	32	5,66	1,79	-1,39	72	0,17
	yes	42	6,33	2,41			
self-confidence	no	32	6,09	1,90	0,37	72	0,71
	yes	42	5,3	1,88			

Putting all the values together shows, that most confidence regarding their academic results have healthy boys, on the other side - who is most negative about assessing their academic results are the hyperactive girls.

Summary of the results and confirmation of the hypotheses

This study aims to explore self-concept of children with ADHD in comparison to healthy children. This aim has been reached by confirming or rejecting the following hypotheses:

The self-concept connected to academic success of children with ADHD is statistically significantly worse than in case of healthy children.

Overall self-concept regarding academic success of children with ADHD is lower than that of healthy children, but the difference is not statistically significant. The subtest analysis shows us that lower self-concept is characteristic for all the school domains, with general skills and mathematics reaching 5% significance value.

Considering their grades, the self-concept connected to academic success of children with ADHD shows much bigger and more positive discrepancy in comparison to healthy children.

In accordance with the preset hypothesis it has been concluded from the analysis of the results that children with ADHD have higher positive discrepancy between how they perceive their academic results and how their teachers perceive them – in average as well as in each respective domain. We have observed this trend in all ten

examined discrepancies and statistically significant differences have appeared in eight of them: we recorded 5% statistical significance of differences in discrepancy between total SPAS score, mathematics subtest, general skills subtest and mathematics grade and also between reading subtest and Czech language grade; 1% statistical significance was recorded in differences of discrepancies between spelling, writing and self-confidence subtests and Czech language grade and also between self-confidence subtest and mathematics grade.

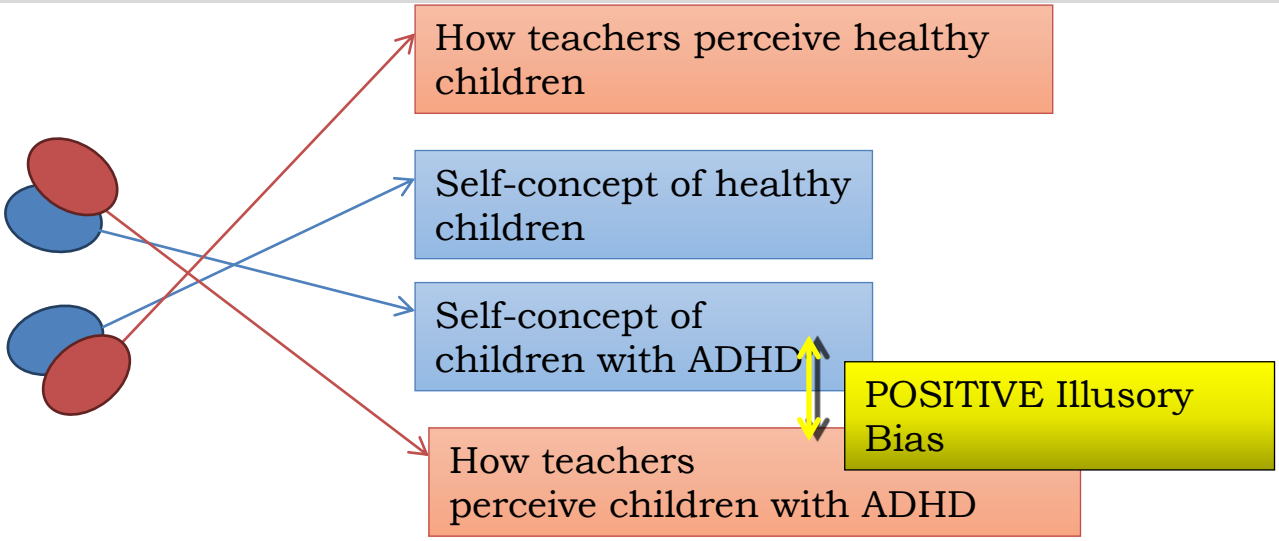
With regards to the optimal length of an article we present the data for this hypothesis in a separate article – see Škobrtal et. Al. (2017)

Discussion

The study is focused on comparing self-concept of children who have been diagnosed with ADHD with self-concept of healthy children. Included is an analysis of their own self-image and an objective evaluation in regards to each one of the school domains and the direction of their mutual discrepancy.

Our research sample shows that in total, self-concept of hyperactive children is lower than that of healthy children. This trend was also confirmed on the subtest level – hyperactive children had a more negative self-image than healthy children in all 6 areas. Although these differences are statistically significant only in 2 subtests (general skills and mathematics) we believe that considering the one-sided results in all the observed domains, we can interpret this result as a confirmation of the theoretical basis, which considers lower or disturbed self-concept to be one of the results of core symptoms of ADHD. According to experts, this often happens because of repeated failures at school, in both academic and social areas.

Another interesting thing in regards to interpretation is the connection to objective skills evaluation of both groups of children. Although the self-concept regarding academic skills of children with ADHD is higher than how their skills are perceived by the teachers, their self-concept is still clearly lower than it is in the case of healthy children. Those go in the opposite direction – they perceive their academic results less positively than their teachers, but at the same time their total self-concept is in average higher than it is in the case of children with ADHD. To illustrate, we can compare this situation to a pair of widely opened scissors, where on one side we have positive – slightly above average – self-concept of healthy children and an even more positive assessment by their teachers, and on the other lower side we have (very) slightly below average – self-concept of children with ADHD and an even more negative assessment by their teachers. In other words, self-image of children with ADHD is (in concordance with the theoretical basis) lower and rather below-average in comparison to healthy children. Experts presume that it is caused by repeated frustrations and failures that these children experience on daily basis in various environments – at school, at home, among their peers. But the way their teachers – the people who have a significant influence on their personal growth – perceive them, is even more negative!



There are many studies concerned with Positive Illusory Bias. Among others there is for example a study from 2011 by J. D. McQuade, B. Hoza, D. A. Waschbusch, D. Murray-Close, J. S. Owens titled *Changes in Self-Perceptions in Children with ADHD: A Longitudinal Study of Depressive Symptoms and Attributional Style*, or study by E. N. Swanson, E. B. Owens, S. P. Hinshaw from 2012: *Is the Positive Illusory Bias Illusory? Examining Discrepant Self-Perceptions of Competence in Girls with ADHD*, which have inspired us to do a similar research in Czech environment. In their research, E. N. Swanson et al. (2012) have pointed out the above described paradox, which is - although children with ADHD show signs of PIB that indicates overestimating of their own successfulness, their total self-concept is lower in comparison to children without ADHD. However this research only included girls. Even J. D. McQuade et al. (2011) have confirmed the phenomenon of PIB, but for a change, their research was done only on boys. The study was longitudinal and didn't include any control group, which would enable a comparison with healthy boys. That is why they couldn't reach a conclusion that would be similar to the conclusion of the study focused on hyperactive girls. Since our research included both boys and girls, besides comparing children according to whether they are diagnosed with ADHD or not, we also enriched the anamnesis by adding another aspect – their gender.

Although we consider the results of this study interesting, it has to be taken into an account that it has certain limitations. The research sample might be sufficient in number (122 respondents) but in order to confirm presented conclusions, it would have been preferable to have more respondents. The respondents for the research sample were acquired by combining arbitrary choice and snowballing technique. This allowed for the sample to be varied, it comprised of children from different areas of Czech Republic and from different backgrounds, but it still was not the ideal sample. The children in both groups were not completely balanced when it came to age. The group of children with ADHD had more children age 12 and less younger ones, on the other side, the healthy group comprised mostly of respondents age 10 - 11.

Conclusion

The topic of this study is self-concept of children with ADHD. Children with this syndrome are a very current topic, which parents, teachers, doctors and psychologists encounter more and more often. But the ones who deal with this issue the most are the children themselves. That is why we focused on how these children see themselves and how their self-concept differs from self-image of healthy children and from how other people perceive them.

The research sample was acquired using a combination of arbitrary choice and snowballing technique. Included were elementary school children grades 4 to 7 from various areas of Czech Republic. After eliminating tests that could not be evaluated, the final number of respondents was 122, in particular 54 children with ADHD and 68 healthy children.

The children were administered the SPAS test created by Z. Matějčka a M. Vágnerová (1992), which monitors the children's self-concept connected to academic success. The output includes a total score as well as value that expresses their self-image in six sub-areas. The acquired data was processed using the descriptive and inductive statistics methods.

The results of this research lead to the following conclusions:

Self-concept of children with ADHD in school environment is lower than self-concept of healthy children in all measured domains, most significantly in mathematics and general skills. This finding is valid for both boys and girls.

Children with ADHD show tendency towards Positive Illusory Bias. The discrepancy between their self-concept regarding academic skills and the objective scale in form of grades is positive, which means they do not overestimate their skills. On the other hand, healthy children's discrepancy in the same scenario is negative, which means they slightly underestimate their skills. The differences between children with ADHD and healthy children are statistically significant in eight out of ten domains which we focused on (the discrepancy of total self-concept and mathematics, general skills, self-confidence subtests and mathematics grade, and then also the discrepancy of reading, spelling, writing and self-confidence subtests and Czech language grade). The same trend can be observed even if boys and girls are compared separately.

Even though in comparison to objective criterion, children with ADHD tend to overestimate their skills while healthy children rather underestimate themselves, the total self-concept of hyperactive children is lower than that of healthy children. If we also add the evaluation of the groups by teachers, we can notice an interesting paradox: Healthy children with relatively positive academic skills self-concept are perceived by their teachers as even more successful, and on the other side, although self-image of children with ADHD is negative in comparison to healthy children, the way their teachers perceive them is even more negative.

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