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Symptoms of impulsiveness/hyperactivity and inattention in schoolchildren with behavioural difficulties

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The main aim of this research was to examine homeroom teacher assessment of attention deficit/hyperactivity disorder (ADHD) symptoms and some demographic and socio-pedagogical characteristics of schoolchildren with behavioural difficulties, as well as the relations between the mentioned variables. Homeroom teachers assessed 1463 schoolchildren of all grades from 125 primary schools throughout Croatia, for whom they felt and/or thought to have behavioural difficulties, on the Vanderbilt scale in two dimensions: impulsiveness/hyperactivity and inattention. Homeroom teachers assessed occasional to frequent impulsiveness-hyperactivity and frequent inattention in children. In boys and younger participants, impulsiveness-hyperactivity and inattention were assessed more often than in girls, except for inattention that was as frequently assessed in all boys regardless of age. Better academic achievement and material status were recorded in higher assessments of impulsiveness and hyperactivity. Poorer academic achievement was characterized by higher occurrence of inattention. Decisions on the suitable education program were associated with ADHD symptoms only in boys, and were negative for impulsiveness and hyperactivity but positive for inattention. The expressed need for additional help in learning and correcting behaviour was greater when assessments of all ADHD symptoms were higher. Prompt recognition of developmental difficulties and early diagnosis had a significant impact on forming appropriate support in the school and family system.

Key words: ATTENTION DEFICIT DISORDER WITH HYPERACTIVITY; TEACHER TRAINING; SCHOOLS

INTRODUCTION

It is believed that the homeroom teacher knows his/her children in the classroom better than all other teachers and that he/she can provide the most valid assessment of children behaviour. When a pedagogical or interdisciplinary medical-social-pedagogical intervention is planned for a child at risk of developing a behavioural disorder or mental health disorder, the child's homeroom teacher is always consulted to give the opinion and assessment about the child. The aim of the study was to assess how teachers in Croatia assess their schoolchildren for which preventive science suggests that they need timely and professional intervention in order not to develop mental and behavioural disorders.

Among the children seen by homeroom teachers as those with behavioural difficulties may be some with symptoms of the attention deficit/hyperactivity disorder (ADHD). The risk and behavioural difficulties are considered as a developmental precursor to the possible behavioural and/or mental disorders (9, 10, 12). According to DSM V (1), ADHD is one of the most common neurodevelopmental disorders in children and adolescents that is characterized by hyperactivity, impulsiveness, and lack of attention (2, 3). The aetiology of this disorder is complex and predominated by genetic and organic theories. Imaging technique of brain ac-

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tivity (neuroimage) has detected the area of the prefrontal lobe neural network (frontal-striatal-cerebellar network) and other possible areas where deviations or disorders in the structure and function were found in the mentioned neuronal pathways or other areas of the brain, which may underlie this disorder in terms of responsibility for difficulties with the inhibition of executive functions (3).

In the context of education sciences, the basic starting point is defining developmental difficulty according to the Orientation List for Types of Difficulties (4), in accordance with the medical model of educational inclusion of schoolchildren with disabilities. Chidlren diagnosed with ADHD are classified according to the Orientation List for Types of Difficulties (4) within the group of children with Behavioural Disorders and Mental Health Disabilities (group 6), Attention and Activity Disorders subgroup (6.5).

Since many children are said to be hyperactive or have symptoms of ADHD, in the last two decades, children and adolescents with ADHD have been in the focus of professional and public discussion for their behavioural characteristics. Determination of ADHD is carried out solely based on the diagnostic criteria set in a complex procedure by a multidisciplinary team (2, 3). Different authors report different rates of ADHD occurrence, ranging between 3%-5% (2) and 8%-12% (5).

The educational expert team of the school assesses the need to start a child's multidisciplinary diagnostic process according to initially detected features by the homeroom teacher. Children showing signs of impairment/deviation in school functioning and social functioning are most often referred to these processes. As the symptoms described in the ADHD diagnostic criteria are often present in primary schoolchildren, especially in a highly structured school environment, evaluation scales have been developed to help homeroom teachers record the presence of ADHD symptoms in the school environment. Such evaluation lists that refer to the school environment (8) may indicate behaviours related to ADHD, but the authors of the list call for caution against setting a diagnosis for which, as already mentioned, a systematic and multidisciplinary approach is needed, including both the education and health sector. According to the authors (8), between four and six ADHD-related symptoms are present in 15% of all schoolchildren. Similarly, by using the Vanderbilt Scale (6, 7), it is possible, besides the trinity of inattention, impulsiveness and hyperactivity, to simultaneously measure emotional problems and problems of antisociality as secondary events in the school that can develop in a child within the spectrum of behavioural problems.

In this study, the surveyed schoolchildren were observed within the socio-pedagogical spectrum of behavioural problems at the level of behavioural difficulties. From the socio-pedagogical aspect, the purpose of prompt and quality assessment of the symptoms is to design and plan a high-quality professional support and help (9, 10, 18), thus encouraging the child's optimal psychosocial development.

A high-quality professional support and assistance should ensure that risk behaviours do not progress to behavioural difficulties, i.e. behavioural disorders that are phenomenologically and etiologically by far the most severe forms of behaviour (9,11,12). Some characteristics of schoolchildren, such as demographic characteristics and/or characteristics in the child's social environment, may be elements of planning an additional psychotherapeutic, social, psychological, pedagogical, socio-pedagogical, educational, rehabilitative, logopaedic, and other professional assistance to the children or their family (10, 11, 13). One of such characteristics is also material (financial) poverty of the family, which is commonly linked to impulsiveness in the child (14-17), as well as academic failure or parental neglect of the child's care (17, 18). In a preliminary research on this topic, it was found that in schoolchildren diagnosed with at least four symptoms of attention deficit, homeroom teachers recorded a high incidence of behaviours associated with symptoms of innatention and occasional to frequent incidence of behaviours associated with symptoms of impulsivity and hyperactivity (19:387). In 2018, *Vlah et al*. published a preliminary communication on the project, and this paper is the final original scientific paper on this topic that brings conclusions on the overall sample collected at schools in all regions of Croatia (Primorje, Dalmatia, central Croatia, and eastern Croatia). The first paper was categorized as a preliminary communication and the authors consider it as a precursor to the announcement of the final results with which we confirm the preliminary indications. We offer valid results on a representative sample for Croatia, which are relevant for drawing conclusions and making generalization. Its innovative nature also lies in a separate analysis of research questions for boys and girls, which is not part of the preliminary communication. In the same research, it was found that a child's lower academic achievement was associated with a higher level of teacher's assessment of innatention, while a higher academic achievement was associated with a higher level of symptoms of impulsivity/hyperactivity. The teacher's perception of the child's need for additional help with learning is associated with a higher level of occurrence of child's innatention, while the need for additional help in behavioural regulation is associated with higher impulsivity/hyperactivity (19).

Objective of the research

The overal aim of this research was to examine homeroom teacher assessment of ADHD symptoms and some demo-

graphic and socio-pedagogical characteristics in schoolchildren with behavioural difficulties, as well as the relations between the mentioned variables. With this in mind, the paper has three specific aims:

(1) to reveal how homeroom teachers in Croatia estimate ADHD symptoms (impulsivity/hyperactivity and inattention) in their schoolchildren (boys and girls) for whom they subjectively felt and assessed behavioural difficulties in primary school;

(2) to detect some socio-pedagogical characteristics of boys and girls with behavioural difficulties: (i) type of education program, (ii) material (financial) status of the family, (iii) academic achievement, (iv) required additional help in learning, and (v) required additional help in correcting behaviour; and

(3) to identify ADHD symptoms and mentioned socio-pedagogical characteristics of boys and girls with suspected behavioural difficulties.

Given that this was a sample of schoolchildren in whom their homeroom teachers observed behavioural difficulties, higher values were expected in relation to the possible range of results on all variables. Furthermore, the values of symptoms associated with the ADHD syndrome were expected to be linked to other variables observed.

The purpose of getting an insight into the results obtained by this research (as the first of the kind in Croatia) is preventive. The results of the research should contribute to improvement of the school work enabling the school professional services, paediatricians, and school doctors to provide help to schoolchildren in a timely and preventive manner, in whom homeroom teachers (who know their schoolchildren best) have detected certain risk factors presented through the variables applied in this paper. Therefore, the possible applicative purposes of the research lie in its contribution to understanding the elements of the child's environment structure in order to enhance assessment procedures and improvement of the quality of prompt and need-oriented intervention for schoolchildren with behavioural problems.

SUBJECTS AND METHODS

Sample of participants and sampling design

In the study, schoolchildren from 125 primary schools in 13 counties (eastern Croatia counties, central Croatia counties, northern and southern Croatia counties) and the City of Zagreb were assessed. Participation in the study was offered to all schools across Croatia in the selected counties, and only those schools that agreed to participate were involved in the research. Detailed description of this representative sample for Croatia is provided in another publication (20). In each of the schools that agreed to participate, only those homeroom teachers who wanted to participate were involved in the research. The homeroom teachers (N=1026, age range 23-65 years; M_{age}=43; SD=9.38; 14.50% male) were asked to assess one or more schoolchildren in their class for whom they thought or felt to have behavioural difficulties in class, recess, during free time activities and similar, and give some opinions and evaluations regarding those schoolchildren (N=1463, age range 7-15 years; M_{age}= 11; 13% girls). Each homeroom teacher detected a mean of 1.42 schoolchildren with behavioural difficulties in their class. According to grades from 1st to 8th grade (Table 1), the presence of such difficulties was even in all counties and the City of Zagreb.

TABLE 1. Sample distribution of grades accordig to sex (boys and girls)

Grade	Boys, n (%)	Girls, n (%)
First	127 (10%)	35 (18.4%)
Second	175 (13.7%)	25 (13.2%)
Third	188 (14.8%)	27 (14.2%)
Fourth	186 (14.6%)	27 (14.2%)
Fifth	123 (9.7%)	18 (9.5%)
Sixth	157 (12.3%)	22 (11.6%)
Seventh	154 (12.1%)	14 (7.4%)
Eighth	124 (9.7%)	12 (6.3%)
Total	1234 (96.9%)	190 (94.7%)
Missing data	39 (10%)	10 (5.3%)

Measuring instruments and variables

Symptoms associated with the ADHD syndrome were measured by two dimensions of the Vanderbilt Assessment Scale (NICHQ Vanderbilt Assessment Scale - TEACHER informant) – Teacher Questionnaire (6), which originally consists of 35 items grouped into four subscales (Impulsiveness-hyperactivity, Inattention, Emotional Problems, and Antisociality). In general, the four mentioned dimensions from the original form have been translated into Croatian language and measurement characteristics confirmed in the Croatian cultural research area, as reported elsewhere (7). For the purpose of this paper, only two subscales were analyzed: a) Impulsiveness-hyperactivity (N=9; α=0.93; "Answers even before the entire question is asked"), and b) Inattention (N=9; α=0.86; "Has difficulties in organizing and creating tasks and activities"). The participants marked the degree of agreement or disagreement with a particular statement on a four-degree Likert scale (0 – never, 1 – occasionally, 2 – often, and 3 – very often). The results were calculated as sum of all items divided by the number of items, i.e., linear composites.

TABLE 2. Descriptive data on ADHD syndrome symptoms in boys and girls

ADHD symptom		r	Min	Max	M	SD	Kurtosis	Skewness
Impulsiveness-hyperactivity	Boys	0.42**	0	3	1.62	0.81	-0.20	-0.9
Inattention			0	3	1.92	0.59	-0.26	-0.26
Impulsiveness-hyperactivity	Girls	0.40**	0	3	1.31	0.86	0.21	-0.94
Inattention			0	3	1.76	0.64	-0.17	-0.96

R = Pearson's correlation coefficient; Min = minimum response; Max = maximum response; M = arithmetic mean on linear composite; SD = mean deviation from arithmetic mean; kurtosis test of distribution normality; skewness test of sphericity *p<0.05; **p<0.01

TABLE 3. Differences between boys and girls with behavioural difficulties in ADHD symptoms assessed (nonparametric measure considering disproportion of the number of participants in two independent samples)

ADHD symptom	Sex	n	M rank	Z
Impulsiveness--hyperactivity	Boys	1176	694.67	-4.56***
	Girls	175	550.56	
Inattention	Boys	1169	684.24	-3.00**
	Girls	174	589.76	

Z = coefficient of Mann-Whitney test: **p<0.01; ***p<0.0001

Demographic characteristics of schoolchildren were described and there socio-pedagogical characteristics measured using questions designed specifically for the purpose of the project, with the study being part of a more extensive project (https://www.ufri.uniri.hr/files/projekti/N__Vlah_UNIRI_projekt.pdf). Among the measured characteristics of the schoolchildren, homeroom teachers reported whether the pupil had a Decision issued by the State Administration Office on the suitable education programme (0=no - these schoolchildren are educated according to the regular educational programme; 1=yes - these schoolchildren are educated according to the regular educational programme with adjusted methods, the regular programme with adjusted methods and contents or according to the overall adjusted programme), assessed the child's financial situation in the family (from 0=worse than average to 2=better than average), and academic achievement (from 1=insufficient to 5=excellent). According to the homeroom teacher assessment of the need for additional help in learning and correcting behaviour in a child, pre-constructed variables were used in the research of primary schoolchildren needs (16): a) Do you think this child needs additional help in learning; and b) Do you think this child needs additional help in correcting behaviour (0=no; 1=yes).

Data collection and processing

Data were collected during the academic years 2016/2017 and 2017/2018. From ethical aspect, the methodological draft was approved by the Faculty of Teacher Education in Rijeka and positively evaluated by the competent Ministry.

TABLE 4. Descriptive socio-pedagogical characteristics of study participants

	Boys	Girls
Programme	n (%)	n (%)
Regular programme	882 (69.3%)	122 (64.2%)
Some other type of programme	379 (29.8%)	66 (34.7%)
Total	1261 (99.1%)	188 (98.9%)
Missing data	12 (0.9%)	2 (1.1%)
Financial status of the family		
Worse than average	164 (12.9%)	35 (18.4%)
Average	850 (66.8%)	127 (66.8%)
Better than the average	244 (19.2%)	23 (12.1%)
Total	1258 (98.8%)	185 (97.4%)
Missing data	15 (1.2%)	5 (2.6%)
Academic achievement		
Insufficient	20 (1.6%)	7 (3.7%)
Sufficient	88 (6.9%)	11 (5.8%)
Good	462 (36.3)	65 (34.2%)
Very good	454 (35.7%)	68 (35.8%)
Excellent	148 (11.6%)	22 (11.6%)
Total	1172 (92.1%)	173 (91.1%)
Missing data	101 (7.9%)	17 (8.9%)
Needed additional help in learning		
No	413 (32.4%)	54 (28.4%)
Yes	849 (66.7%)	133 (70%)
Total	1262 (99.1%)	187 (98.4%)
Missing data	11 (0.9%)	3 (1.6%)
Needed additional help in correcting behaviour		
No	256 (20.1%)	58 (30.5%)
Yes	1006 (79%)	129 (67.9%)
Total	1273 (99.1%)	190 (98.4%)
Missing data	11 (0.9%)	3 (1.6%)

Descriptive data on socio-pedagogical characteristics of pupils comprise the following: type of programme attending, financial status, academic achievement, need for additional help in learning, and additional help in correcting behaviour.

Each school carried out its own assessment of research ethics before consenting to participate. Data collection was anonymous and voluntary, both for schools and homeroom teachers, upon oral consent to participate in the research.

TABLE 5. Correlation coefficients of connection between characteristics of study participants and ADHD symptoms in boys and girls

ADHD symptom	Sex	Age	Programme	Financial status	Achievement	Studying	Behaviour
Impulsiveness-hyperactivity	Boys	-0.17**	-0.12**	0.16**	0.14**	-0.07**	0.36**
	Girls	-0.26**	-0.09	0.20**	0.18*	-0.08	0.34**
Inattention	Boys	0.01	0.06*	-0.07*	-0.27**	0.24**	0.25**
	Girls	-0.25**	0.03	-0.13	-0.26**	0.34**	0.18**

*p<0.05; **p<0.01 (age = Pearson; programme, studying, behaviour = Kandall tau-b; financial status, achievement = Spearman)

The schoolchildren did not participate directly in data collection. During the entire process of data collection and processing, the identity of the homeroom teachers and schoolchildren was protected from all research participants. Teacher Questionnaires were distributed, with assistance of the school educational expert teams, by students from the Faculties of Teacher Education of the Universities of Rijeka, Osijek, and Split, who defended their MA thesis based on this research data. Interviewers were included in the City of Zagreb and Zagreb County. All the questionnaires were stored in envelopes that were closed upon completion, and research results could be submitted to participants for their school on request. Data were processed using descriptive analysis (frequency and relative frequency; minimum, maximum, mean, standard deviation, kurtosis, and skewness), Mann-Whitney test of differences between boys and girls with ADHD symptoms, and correlation statistics (Pearson for linear and parametric statistics, Spearman and Kendall tau-b for nonparametric statistics).

RESULTS

Homeroom teachers assessed schoolchildren with behavioural disabilities with occasional to frequent impulsiveness-hyperactivity and frequent inattention (Table 2). ADHD symptoms were present at a medium-high rate. There were statistically significant differences between boys and girls in the ADHD symptoms assessed (Table 3). In this sample, impulsiveness-hyperactivity and inattention were more often recorded in boys than in girls.

One-third of the schoolchildren had been issued a Decision by State Administration Office on the suitable education programme, while more than two-thirds of the participants were not (Table 4). There were more schoolchildren whose material (financial) situation in the family was assessed as below average than above average, while for most of them the material situation was average, which corresponds to previous findings (17, 18). Academic achievement of the schoolchildren with behavioural difficulties was good in almost half and very good in one-quarter of the schoolchildren, while only one-tenth of the schoolchildren with behavioural difficulties had excellent achievement, as expected (17). More than three-quarters of all schoolchildren from the sample needed additional help with learning, while two-thirds of the schoolchildren needed additional help in correcting behaviour, as shown in Table 4.

Analysis of the correlation matrix (Table 5) indicated that certain symptoms related to ADHD correlated significantly with almost all variables. Impulsiveness-hyperactivity had a low negative link with age in both girls and boys, negative link with the suitable education programme in boys only, positive link with the material status and better academic achievement in both sexes, negative link with the need for additional help in learning only in boys, and medium positive link with the need for additional help in correcting behaviour in both sexes. Inattention had a low negative link with age only in girls and positive link with the suitable education programme only in boys, negative link with the material status of the family in boys, and negative link with academic achievement in both sexes. Also, inattention showed positive correlation with the needs for additional help in learning and correcting behaviour in schoolchildren of both sexes.

DISCUSSION

The results, which mainly confirmed the preliminary study (19), obtained in the sample of primary schoolchildren in Croatia selected on the basis of homeroom teacher opinion on the schoolchildren behavioural difficulties indicated their presence in 87% of boys and 13% of girls, which is similar to previous research that indicated a higher occurrence of behavioural difficulties in boys (17). Descriptive data on the socio-pedagogical characteristics of schoolchildren also confirmed the previously known data from criminology and etiology on the occurrence and development of behavioural disorders (12, 13, 17) because it involves risk factors such as poverty and academic failure, which can be successfully prevented by applying regulations that envisage early interventions for families at risk (16, 18) in Croatia. However, it should be emphasized that parental neglect in terms of not informing about such a child did not prove to be significant in these analyses.

Those homeroom teachers who thought or felt that their schoolchildren had behavioural difficulties during class,

break, free time activities, and similar assessed frequent inattention and occasional to frequent impulsiveness/hyperactivity, which confirms the expected higher values compared to the previous research in Croatia conducted in the general population of schoolchildren (6). Considering that the child's concentration and focus on a task in a traditional school environment is crucial for participation in the teaching process, inattention, impulsiveness, and hyperactivity are "a barrier to good adaptation, demands, and expectations of a classical school, concerning both learning and behaviour" (2, 5, 7). Therefore, the established values of ADHD symptoms can be said to be higher than the values in the typical population, suggesting the need for greater teacher engagement in their daily work with these schoolchildren.

The ADHD symptoms in this sample were more often observed in boys than in girls, which is in accordance with previous findings (2, 3, 5, 6, 8). The younger the boys and girls, the more impulsiveness-hyperactivity was noticed by their homeroom teachers, which confirms previously published data. However, it was noticed that homeroom teachers perceived more inattention in younger girls, while in boys inattention was noticed equally regardless of their age. Perhaps, when it comes to girls, there is higher sensitivity of classroom teachers to this problem or because girls in their adolescent age compensate their inattention symptoms with some other strategies, while boys do not. Namely, this research showed that inattention was more commonly observed in boys. It is also interesting to note that impulsiveness-hyperactivity was positively associated with better material status and better academic achievement for both sexes, while in boys, it was evenly related to the absence of a suitable education programme. Contrary to previous findings, which have shown that a higher occurrence of impulsiveness and the related unsuccessful social adaptation is mostly associated with greater poverty, the opposite was observed in our study, suggesting new research questions on a new group of impulsive-hyperactive schoolchildren (mostly boys) in whom homeroom teachers notice behavioural difficulties and who are characterized by better material status, better grades, and probably are not educated according to the individualized or adjusted programmes.

As expected, a higher level of inattention was associated with worse academic achievement. Therefore, it is logical that additional help in learning and correcting behaviour is needed for schoolchildren with a higher level of inattention.

Homeroom teachers assessed that 67.3% of the schoolchildren needed additional help in learning, while 78.1% of the schoolchildren needed additional help in correcting behaviour. Therefore, it is justifiably implied that pedagogical work with these schoolchildren is a great challenge. All of the above-mentioned, which is related to the need for additional help, refers to the homeroom teacher's sense of powerlessness and incompetence to deal with schoolchildren whose behaviour is characterized by impulsiveness-hyperactivity or inattention. The educators and teachers themselves cannot design intervention procedures for behavioural and learning problems but need additional help in doing so. It is considered that homeroom teacher's assessment of the need for additional professional assistance to the child is a very important signal, i.e., information to the school administration to which it should respond in a quality and timely manner (11). The connection of ADHD symptoms in schoolchildren with behavioural disabilities identified here additionally confirms the need for careful and multidisciplinary determination of the cause and direction of the intervention for the behaviour observed. Prompt detection and providing appropriate professional assistance to schoolchildren with attention deficit is an extremely important segment in the education and training and care for satisfying the needs of all schoolchildren, as well as for successful social adaptation of all schoolchildren.

As another methodological limitation of this paper, it should be noted that, in this research, we did not isolate the subsample of schoolchildren who had been issued a Decision for ADHD diagnosis. The purpose of this study was to identify the characteristics of ADHD symptoms in girls and boys in whom their homeroom teachers observed, at the subjective level, behavioural difficulties, and to ensure early prevention and interventions on a wider spectrum. In this paper, it is not intended to single out only children who have "properly and objectively diagnosed difficulties" because such a diagnosis involves a very narrow circle of students who have pronounced behavioural disorders. In that case, a large part of students, who are still at early stages of risk, would remain excluded from the insight into the research results, and implicitly from the early intervention and/or pedagogical measures they need. Instead, we decided to form a sample by listening to the homeroom teacher subjective, epistemologically-conditioned assessments of student behaviour of those students in their class for whom they believed to show behavioural difficulties. Such subjectivity is not uncommon in a social model of understanding the context of a child's life and learning. This is because such a method is close to a symbolic interactionist approach and favours qualitative inclusion in the assessment. This method of sampling was sensitive to the social conditions of the child's ecological environment. In this environment, it is sometimes impossible to carry out complicated and time-consuming diagnostic methods due to the lack of cooperation and excessive stress experienced by some families. In future research, with differently set goals, the characteristics

of students who have an exclusively interdisciplinary diagnosis of behavioural disorders according to the cited Rulebook (4) and administrative decision on the appropriate form of schooling (which includes about one-third of this sample) should be determined. Then, with the subsample formed, new analyses should be made and conclusions drawn about students diagnosed with developmental difficulties.

Therefore, several new research questions have emerged, as follows: 1) are the characteristics of impulsiveness-hyperactivity of organic or social origin; 2) is this related to the comorbidity of bio-psycho-social influences; 3) in that case, to what extent are behaviour corrections possible for schoolchildren with the mentioned symptoms and by which means, and with the purpose of better social inclusion of schoolchildren; and 4) how educated are educational workers for working with the mentioned group of schoolchildren in the case of organic damages. Namely, when it comes to a behavioural disorder with an organic etiology such as ADHD (4), it is necessary to conduct a multimodal approach in which correcting the behaviour should be carried out along with adaptation of the educational setting, as well as medicamentous therapies, as needed (2). As it is evident, the above-mentioned questions are more related to the intervention spectrum than to diagnosis and assessment, but are important in the theoretical and practical aspects of studying phenomena in education and protecting mental health of schoolchildren with behavioural problems, i.e., schoolchildren with the ADHD syndrome, who may potentially develop behavioural disorders related to Article 65 of the quoted Regulation.

CONCLUSION

The main aim of this research was to examine the homeroom teacher assessment of ADHD symptoms and some socio-pedagogical characteristics in schoolchildren with behavioural difficulties, as well as the relations of the mentioned variables. Homeroom teachers assessed frequent inattention and occasional to frequent impulsiveness-hyperactivity in schoolchildren for whom they thought to have behavioural difficulties.

In addition, the basic results of this study that can aid paediatricians, school physicians and professional associates in Croatian schools in improving their interdisciplinary care and professional interventions for schoolchildren, who, according to subjective assessments of their homeroom teachers, manifest behavioural difficulties in Croatia, are as follows:

1) Among the schoolchildren who were subjectively singled out by homeroom teachers as schoolchildren with behavioural difficulties, there were more boys than girls at a 6.5:1 ratio. It is evident that the symptoms of ADHD are more noticeable in boys than girls.

2) The younger the girls, the more noticeable were both inattention and impulsivity/hyperactivity. However, it was different in boys because the younger they were, the more noticeable was impulsiveness/hyperactivity. However, inattention was equally noticed in older and younger boys.

3) In a smaller number of cases, boys had been advised an appropriate form of schooling in the case when their homeroom teachers noticed more impulsiveness/hyperactivity, and they had a higher number of advised forms of schooling when the homeroom teachers observed more inattention. Girls were advised an appropriate form of schooling in equal measure, no matter how many symptoms of ADHD their homeroom teachers noticed. In both sexes, the appropriate form of schooling was present in only one-third of the cases in the entire sample.

4) In both boys and girls, their homeroom teachers noticed more impulsiveness/hyperactivity in cases where they recorded better than average material status. In boys, lower material status was associated with a higher rate of inattention, which was not the case in girls. Material status of study participants was mostly average to below average.

5) In both girls and boys, their homeroom teachers noticed more impulsiveness/hyperactivity when schoolchildren had better grades and more inattention when they had lower grades. Grades were mostly good or very good for both sexes.

6) In boys, the need for learning assistance was assessed more often when less impulsiveness/hyperactivity and more inattention was noticed. In girls, the need for additional learning assistance was more noticeable only when symptoms of inattention were more observed. In the overall sample, additional learning assistance was requested for more than two-thirds of the participants of both sexes.

7) Both boys and girls were more likely to seek additional help with behavioural correction when more ADHD symptoms were assessed. In the overall sample, the need for additional assistance in behavioural correction was sought in approximately as many as three-quarters of the sample.

In that sense, it can be concluded that the authors of the study support the concepts of prompt identification of developmental difficulties and early diagnosis in order to contribute to forming appropriate support both in the school and in the family system.

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SAŽETAK

Učiteljska percepcija simptoma impulzivnosti/hiperaktivnosti i nepažnje među učenicima osnovne škole u Hrvatskoj

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Glavni cilj ovog istraživanja bio je ispitati percepcije učitelja simptoma impulzivnosti / hiperaktivnosti i nepažnje, spolne i dobne razlike te povezanost s akademskim i sociodemografskim obilježjima učenika i njihovih obitelji. Tako je 1.026-ero osnovnoškolskih nastavnika procjenjivalo 1.383-je učenika kod kojih su uočene poteškoće u ponašanju i emocijama u školskom okruženju. Vanderbiltova ljestvica za procjenu – Upitnik za učitelje primijenjena je za mjerenje impulzivnosti/hiperaktivnosti i nepažnje kako bi se indicirala pojavnost tih ponašanja kod selekcioniranih učenika. Učitelji su izvijestili da se impulzivnost/hiperaktivnost pojavljuje povremeno do često, dok se nepažnja pojavljuje često. Kao što je očekivano, impulzivnost/hiperaktivnost, kao i nepažnja, uočeni su češće kod dječaka i kod mlađih učenika nego kod djevojčica, osim kod nepažnje koja je podjednako zamijećena kod svih dječaka, bez obzira na dob. Impulzivnost/hiperaktivnost i nepažnja su procijenjeni u manjoj mjeri kod djevojčica. Školovanje prema individualiziranom odgojno-obrazovnom planu je povezano sa simptomima impulzivnosti/hiperaktivnosti i nepažnje samo kod dječaka, dok su neka akademska i socijalnopedagoška obilježja učenika i obitelji također povezana sa simptomima ADHD-a. Pravodobno prepoznavanje i rana dijagnostika mogu biti značajni u formiranju potpore u školi i obitelji kod učenika koji imaju poteškoće u ponašanju i emocijama.

Ključne riječi: ADHD; ŠKOLOVANJE UČITELJA; ŠKOLE