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Children and Youth Services Review xxx (2012) xxx

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Highlights

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Comparing ADHD symptom levels in children adopted from Eastern Europe and from other regions: Discussing possible factors involved

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► We compare ADHD symptoms in children adopted from Eastern Europe and other regions. ► We examine the influence of personal/family factors in the display of ADHD symptoms. ► Children adopted from Eastern Europe showed more ADHD symptoms. ► Being a girl was a protective factor for the Hyperactivity/impulsivity scale. ► Older children were more likely to show inattention.

0190-7409/$ – see front matter
doi:10.1016/j.childyouth.2012.05.025

Please cite this article as: Abrines, N., et al., Comparing ADHD symptom levels in children adopted from Eastern Europe and from other regions: Discussing possible factors involved, *Children and Youth Services Review* (2012), doi:10.1016/j.childyouth.2012.05.025

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Comparing ADHD symptom levels in children adopted from Eastern Europe and from other regions: Discussing possible factors involved

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ARTICLE INFO

Article history:
Received 26 March 2012
Received in revised form 26 May 2012
Accepted 27 May 2012
Available online xxxx

Keywords:
Hyperactivity
Attention problems
Intercountry adoption
Eastern Europe

ABSTRACT

Higher rates of ADHD symptoms have been observed among internationally adopted children but these symptoms seem to be even more frequent among children adopted from Eastern European countries. Therefore, the aims of this study were to compare the presence of ADHD symptoms in a sample of children adopted from Eastern Europe with a sample of children adopted from other regions and also to examine the influence of selected personal and family factors in the display of these symptoms. Ninety-three children adopted from Eastern Europe were assessed with the *Swanson, Nolan, and Pelham-IV* (*SNAP-IV*) scale and their scores were compared with the scores of 115 children adopted from other regions. Children adopted from Eastern Europe showed more ADHD symptoms than children adopted from other regions. Being a girl was a protective factor for the Hyperactivity/impulsivity scale and older children were more likely to show inattention. However, the reasons why these symptoms are more frequent in children adopted from Eastern Europe are still uncertain: the interaction between the stories and characteristics of the adopted child and adoptive parents should be further explored in order to best help these children to adapt to their new family and society.

1. Introduction

1.1. Attention deficit hyperactivity disorder (ADHD)

Attention deficit hyperactivity disorder (ADHD) is one of the most common diagnoses in child mental health. Its symptoms include lack of attention, hyperactivity and impulsiveness and its estimated prevalence ranges from 3 to 10% in school aged children (Barkley, 1998; Faraone, Sergeant, Gillberg, & Biederman, 2003). Boys are more likely to be diagnosed with this disorder than females, with a male–female ratio of approximately 4:1 in community samples (Cantwell, 1996).

The interaction between biological predisposition (neurobiological and genetic factors) and environmental factors is assumed as the main cause for this disorder (Aguiar, Eubig, & Schantz, 2010). Some of the environmental factors related to the onset of the disorder are tobacco and/or alcohol consumption by the mother during pregnancy and birth complications (Froehlich et al., 2009; Millichap, 2008).

Furthermore, some social factors such as socioeconomic status, disorganized family dynamics, and family psychopathology, are considered as a pathogenic environment that may favor the display of these symptoms, increase their severity, worsen prognosis and put them at higher risk for comorbidity (Biederman, 2005; Biederman et al., 1995).

The indicated treatment for ADHD can consist of psychological and/or pharmacological treatment. The pharmacological approach includes stimulants such as methylphenidate and amphetamine and some non stimulant medications like atomoxetine and extended-release guanfacine. Non-pharmacological treatments have also been reported as being useful interventions, especially when symptoms are milder. These include parent training, cognitive-behavioral therapy, social skills training, etc. (Young & Amarasinghe, 2010). A combined approach with pharmacological and psychological treatment is considered the most effective treatment with severe impairments.

1.2. Intercountry adoption

A marked increase in the number of international adoptions has been observed in Spain since the late nineties, with more than 40,000 children having been internationally adopted in the country (Selman, 2009). Catalonia is a north eastern region of the country and has the highest rate of international adoption in the world, with 10,832 children adopted from other countries (Selman, Forthcoming).

Different risk factors frequently involved in the adoption process might affect the development of these children (Johnson, 2002; Juffer & Van Ijzendoorn, 2005; Miller, 2005): prenatal and perinatal

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doi:10.1016/j.childyouth.2012.05.025

complications, being raised in unstructured families and/or overcrowded institutions with the subsequent low physical and emotional care, lack of hygiene and under stimulation (Brinich, 1995; Everett, 1999; Gunnar & Van Dulmen, 2007; Harlow, 1958; Hughes, 2007). Furthermore, early parental separation, institutionalization periods and frequent caretakers replacements, which are common in the early years of an adoptees' life, might facilitate later attachment problems. Also, it is important to emphasize the importance of the child-environment interactions during the first phases of the life for the appropriate development of the brain (Gunnar, Bruce, & Grotevant, 2000).

1.3. ADHD in children adopted from Eastern Europe countries

High rates of ADHD diagnosis and/or a marked presence of ADHD symptoms have been lately observed among internationally adopted children, according to parental assessment (Barcons-Castel, Fornieles-Deu, & Costas-Moragas, 2011; Jacobs, Miller, & Tirella, 2010; Simmel, Brooks, Barth, & Hinshaw, 2001) and to medication rates (Lindblad, Ringbäck Weitoft, & Hjern, 2010).

Different possible explanations for this fact have been proposed by several authors, like the effects of early deprivation (Colvert et al., 2008; Stevens et al., 2008), the amount of time these children spend in critical situations (Jacobs et al., 2010) and difficulties in the establishment of a secure attachment between the adoptees and their adoptive families (Abrines et al., 2012; Finzi-Dottan, Manor, & Tyano, 2006; Franc, Maury, & Purper-Ouakil, 2009). Other factors have also been related to higher rates of ADHD symptoms among adoptees, like the length of time spent with the adoptive family and the age of the child: the older they get, the more likely they are to be rated as hyperactive (Rojewski, Shapiro, & Shapiro, 2000).

However, the existence of ADHD symptoms seems to be higher in children adopted from Eastern Europe. As 34% of the internationally adopted children in Catalonia come from these countries, this will be the focus of this study.

A national cohort study conducted in Sweden, found that the Eastern Europe group showed the highest rate of ADHD medication prescribed, except for the group of females aged between 16 and 21 (Lindblad et al., 2010). In Minnesota, Gunnar and Van Dulmen (2007) established a relationship between being adopted from Eastern Europe and the existence of several behavioral disorders, like aggressive behavior, attention problems and social problems. In Columbia, Beverly, McGuinness, and Blanton (2008) observed that 42% of 55 children adopted from the former Soviet Union were labeled with ADHD. However, Jacobs et al. (2010) found no relation between the country of origin and scores in language, fine motor skills, visual reception, executive function, attention and sensory skills in a sample of 37 children adopted internationally in the United States.

One of the most important factors that has been considered to explain the lower developmental and behavioral performance of children adopted from Eastern European countries is the higher rate of alcohol consumption during pregnancy by mothers of institutionalized children in these countries (Gunnar & Van Dulmen, 2007; Miller, Chan, Tirella, & Perrin, 2009). According to the *World Health Organisation Global Database on alcohol use*, in Russia, 1 in 3 women of childbearing age regularly consumes alcohol and an increase in the consumption of substances has been observed in groups of any age in the former Soviet Union countries in general (Davis, 1994). Furthermore, 45% of 50 children institutionalized in Russia show facial phenotypes compatible with prenatal alcohol exposure (Miller et al., 2006). In Sweden, (Landgren, Svensson, Stromland, & Andersson Gronlund, 2010) observed that fetal alcohol spectrum disorders were identified for 52% and ADHD for 51% in a sample of 71 children adopted from Eastern Europe. In Canada, Robert et al. (2009) concluded that 69% of 29 children adopted from these countries showed physical parameters and/or neurological anomalies compatible with fetal alcohol spectrum disorder (FASD).

Hyperactivity and attention deficits are part of the symptoms that can be seen in children with FASD, like developmental delay, microcephaly, seizures, cognitive deficits, learning and memory impairments, poor psychosocial functioning and motor coordination deficits (Kvigne et al., 2004). Therefore, some symptoms of FASD can overlap with ADHD and can lead to misdiagnosis and consequent mistreatment.

However, assuming that all the difficulties observed in children adopted from Eastern Europe are due to the events that happened during the pregnancy period would be a very simplistic interpretation of the situation. Actually, Goldman and Ryan (2011) found that prenatal alcohol, tobacco and/or other drug exposure significantly influenced pre-adoption functioning, but not post-adoption adjustment. Nowadays, there is a trend in psychology toward looking for a biological/genetic cause for the display of these symptoms in order to find a quick method for understanding these symptoms and how to get rid of them as soon as possible. According to Gauthier (2011) "The history of the symptom, of the child who owns it, and of the family in which this child is being raised are not emphasized as strongly". In this context, the lack of consideration for all the factors involved in the histories of adoptive children and also of adoptive parents can contribute to the misinterpretation of some symptoms and to the consequent misdiagnosis of ADHD. Sometimes "the power dynamics of the medical, educational and welfare systems lock the diagnosis with its embedded meanings into the child's life" (Karnik, 2001). Therefore, the election of the treatment might be inadequate and symptoms might persist for longer periods, interfering with the adaptation process of the child to the family and social environment.

Until now, several studies have analyzed the display of ADHD symptoms in samples of children adopted from Eastern Europe and others have compared the existence of several behavioral problems in children adopted from Eastern Europe with children adopted from other regions of the world. However, as far as we know, no studies have compared the display of ADHD symptoms in a sample of children adopted from Eastern Europe with a sample of children adopted from other regions of the world.

So, the purposes of the present study were:

To compare the presence of ADHD symptoms in a sample of children adopted from Eastern Europe with a sample of children adopted from other regions and also to examine the influence of some personal and family factors in the display of ADHD symptoms: Sex, age, country of origin, age at adoption and socioeconomic and marital status of the adoptive parents.

2. Methods

2.1. Participants

Results from a total sample of 208 children (109 females, 99 males) aged between 7 and 10 were included in this study (Table 1). In order to avoid the influence of the adaptation period, children who had been living with their adoptive families for less than two years were excluded from the sample. Ninety-three children (34 females, 59 males) adopted by Catalonian families from Eastern European countries were assessed and compared with a sample of children adopted from other regions: 56 from Asia (51 females, 5 males), 33 from Africa (11 females, 22 males) and 26 from Latin America (13 females, 13 males).

About half of the families (53%) had a medium-high socioeconomic status and only 6% of the parents were under 40 years old.

Children adopted from Africa and Asia had a lower proportion of parents living as a couple (64% and 73% respectively) in

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Table 1
Characteristics of the sample.

	Country of origin											
	EE		LA		AS		AF		OR		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Sex												
Masculine	59	63.4	13	50	5	8.9	22	66.7	40	34.8	109	52.4
Feminine	34	36.6	13	50	51	91.1	11	33.3	75	65.2	99	47.6
Age												
7 years old	26	28	5	19.2	17	30.4	14	42.4	36	31.3	62	29.8
8 years old	28	30.1	12	46.2	22	39.3	10	30.3	44	38.3	72	34.6
9 years old	18	19.4	5	19.2	10	17.9	6	18.2	21	18.3	39	18.8
10 years old	21	22.6	4	15.4	7	12.5	3	9.1	14	12.2	35	16.8
Socioeconomic status												
High	14	15.4	4	15.4	14	25	11	33.3	29	25.2	43	20.9
Medium/high	45	49.5	17	65.4	29	51.8	18	54.5	64	55.7	109	52.9
Medium	22	24.2	3	11.5	7	12.5	4	12.1	14	12.2	36	17.5
Medium/low	10	11	1	3.8	4	7.1	0	0	5	4.3	15	7.3
Low	0	0	1	3.8	2	3.6	0	0	3	2.6	3	1.5
Age categories for both parents												
Older is ≤40	7	7.5	1	3.8	1	1.8	0	0	2	1.7	9	4.3
Older is 40–50	62	66.7	22	84.6	38	67.9	25	75.8	85	73.9	147	70.7
Older is 50–60	24	25.8	3	11.5	17	30.4	8	24.2	28	24.3	52	25
Is the parent who answers the questionnaire living as a couple?												
No	9	9.7	2	7.7	15	26.8	12	36.4	29	25.2	38	18.3
Yes	84	90.3	24	92.3	41	73.2	21	63.6	86	74.8	170	81.7
ADHD diagnosis												
Yes	21	22.6	2	7.7	1	1.8	0	0	3	2.6	24	11.5
No	72	77.4	24	92.3	55	98.2	33	100	112	97.4	184	88.5
ADHD treatment												
Yes	17	18.3	1	3.8	1	1.8	0	0	2	1.7	19	9.1
No	76	81.7	25	96.2	55	98.2	33	100	113	98.3	189	90.9

Note: NA = Non-adopted; EE = Eastern Europe; LA = Latin America; AS = Asia; AF = Africa; OR = Total other regions (including LA, AS and AF).

comparison to the other groups (Eastern Europe 90% and Latin America 92%).

Twenty-four children had a diagnosis of ADHD (21 adopted from Eastern Europe, 2 from Latin America, 1 from Asia) and nineteen children were in treatment.

2.2. Procedure

Children were recruited from the pediatric service of the *Hospital Sant Joan de Déu* in Barcelona. Invitation letters were sent from the hospital to the families of children aged between 7 and 10. Participants had been in contact through the general practitioner for the regular follow-up and therefore their contact details were in the data base of the hospital. All children included in the sample had been assessed by the pediatrician and at the moment of the assessment they did not present any nutritional deficit, infectious or parasitic disease.

Families who were interested in participating contacted the research team and had a 45 minutes appointment in the hospital offices. At the beginning of this appointment, participants and their parents were informed about the details of the procedure by a psychologist, and the informed consent form was signed by the parents. Finally, the parents filled in the questionnaires while the psychologist was available to clarify any concerns related to the questions. Afterwards, a psychological report with the results of the assessment was delivered to the family and, if required, treatment orientations were given. The whole sample was assessed between March 2009 and July 2010 by two psychologists.

2.3. Measures

One ad hoc questionnaire was administered in order to obtain relevant information about family data, health and development of the children. Data about the age at adoption, the country of origin, the marital status of the parents and the medical history of the children were collected through this questionnaire.

ADHD symptoms were analyzed using the *Swanson, Nolan, and Pelham-IV scale – SNAP-IV* (Bussing et al., 2008) completed by parents. The SNAP IV is a scale that quantifies the presence of ADHD symptoms specified by the DSM manuals.

The scale was based on the concept that the items (symptoms) in each ADHD domain describe an underlying dimension of behavior and each item was evaluated on a 4-point scale (Not at All = 0, Just a Little = 1, Pretty Much = 2, and Very Much = 3). In this study, scores from two subscales were taken into account:

- *Inattention*, which is characterized primarily by easy distractibility, disorganization, procrastination, and forgetfulness. E.g.: often makes careless mistakes in schoolwork, often loses things necessary for activities, often has difficulty executing directions, etc.
- *Hyperactivity/impulsivity*, which is characterized by a combination of abnormally high levels of activity and a tendency to initiate behavior with a lack of planning and without adequate forethought as to the consequences of the actions. E.g.: Often fidgets with hands or feet, often is "on the go", often has difficulty awaiting turn, and often interrupts or intrudes on others.

The *Hollingshead Four factor index of social status* (Hollingshead, 1975) was used to assess the socioeconomic status (SES) of the children. This scale combines information about the education level and the occupation of both parents to calculate the socioeconomic status of the family. It provides an overall SES score that is weighted as an average of an individual's education and occupation.

2.4. Data analysis

Statistical analyses were conducted using statistical software *Stata 11* (Release Stata/MP 11.1 for windows. College Station, TX: Copyright 2009 StataCorp LP).

A *T*-test was conducted in order to compare the presence of ADHD symptoms depending on the country of origin and a multivariate analysis was used to examine the influence of the following factors in the display of ADHD symptoms: sex, age, country of origin, age at adoption and socioeconomic and marital status of the adoptive parents.

3. Results

During preliminary analysis, to compare the presence of ADHD symptoms depending on the country of origin, *T*-tests for two group mean comparison was used. Table 2 shows that the group of children adopted from Eastern Europe showed significantly higher scores for Hyperactivity/impulsivity [t (3.71), $p<0.001$, $M=1$, $SD=0.66$] than the group of children adopted from other regions ($M=0.68$, $SD=0.55$). Also, significant higher means of Inattention scores [t (6.48), $p<0.001$] were observed for the group of children adopted from Eastern Europe ($M=1.41$, $SD=0.66$), compared to the group of children adopted from other regions ($M=0.82$, $SD=0.65$).

The effect of the country of origin – Eastern Europe vs. Other regions – in the display of ADHD symptoms was investigated using logistic regression (Table 3). First of all, two dichotomic outcomes were created: Hyperactivity/impulsivity and Inattention scores were

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Table 2
Comparison of the SNAP-IV mean scores depending on the country of origin.

	Country of origin		t	Df
	Eastern	Non Eastern		
Inattention	1.41 (0.66)	0.82 (0.65)	6.48***	204
Hyperactivity	1.00 (0.66)	0.68 (0.55)	3.71***	204

Note. Standard Deviations appear in parentheses below
*** $=p<0.001$.

categorized according to the cut-offs of the SNAP-IV scale (1.78 for Hyperactivity/impulsivity and 1.44 for Inattention), obtaining clinical or non clinical scores for each participant. Odds ratio (ORs) and Confidence Intervals (CIs) are reported for both Hyperactivity/impulsivity and Inattention variables. Model was adjusted for possible confounders: sex and current age of the child, socioeconomic and marital status of the adoptive parents, country of origin and age of the child at adoption.

Logistic regression results show that the odds of obtaining clinical scores for the SNAP-IV scales were higher for the group of children adopted from Eastern Europe: more than three times higher for the Inattention scale ($OR=3.3$) and more than twice as high for the Hyperactivity/impulsivity scale ($OR=2.55$). Regarding the effects of the covariates in the model for the Hyperactivity/impulsivity scale, being a girl was a protective factor on the display of these symptoms (*OR*, 0.38), whereas non significant effects were observed for the other possible confounders on the display of these symptoms, such as socioeconomic and marital status of the adoptive parents, age of the child and age at adoption.

In the case of the Inattention scale, the age of the child was observed to have a significant effect, with older children demonstrating greater probability of showing inattention. The remaining covariates of this model had no significant effects.

Table 3
Logistic regression ADHD symptoms based on the country of origin.

Covariate	OR	95% Conf. Interval
Outcome variable: inattention (SNAP-IV), n = 195		
Country of origin by groups		
Other regions*	1	
Eastern Europe	3.3	(1.43–7.64)
Sex		
Masculine*	1	
Feminine	0.51	(0.23–1.14)
Socio economical status		
Medium/high*	1	
Medium	1.43	(0.55–3.71)
Medium/low	1.39	(0.38–5.13)
Age at adoption		
Per unit	0.99	(0.80–1.23)
Age at assessment		
Per unit	1.36	(1.00–1.85)
Is the parent who answers the questionnaire living as a couple?		
No*	1	
Yes	1.55	(0.48–5.01)
Outcome variable: hyperactivity/impulsivity (SNAP-IV), n = 195		
Country of origin by groups		
Other regions*	1	
Eastern Europe	2.55	(1.05–6.16)
Sex		
Masculine*	1	
Feminine	0.38	(0.16–0.91)
Socio economical status		
Medium/high*	1	
Medium	0.82	(0.28–2.36)
Medium/low	0.68	(0.13–3.50)
Age at adoption		
Per unit	1.11	(0.87–1.41)
Age at assessment		
Per unit	0.72	(0.49–1.05)
Is the parent who answers the questionnaire living as a couple?		
No*	1	
Yes	2.22	(0.59–8.28)

* Baseline category.

4. Discussion

As expected, these results confirm that children adopted from Eastern Europe are more likely to show ADHD symptoms than children adopted from other regions, according to their parents' opinion. Therefore, our results are in tune with the existent bibliography (Gunnar & Van Dulmen, 2007; Landgren et al., 2010; Lindblad et al., 2010).

Besides other factors involved in most of the international adoptions (institutionalization, environmental deprivation, low birth weight, poor care after birth, etc.), prenatal alcohol exposure is considered to be one of the main factors that might facilitate the existence of higher levels of hyperactivity, impulsivity and inattention among children adopted from Eastern Europe (Landgren et al., 2010; Miller et al., 2006). However, we could not demonstrate the relation of alcohol consumption during pregnancy by the mother with the display of the mentioned symptoms because most families did not have any information about the birth mothers of the children.

Given that some authors have observed that prenatal exposure to alcohol did not have a significant influence on post adoption adjustment (Goldman & Ryan, 2011), other specifics of the sample of children adopted from Eastern Europe should be explored in further research. Families who decided to adopt in Eastern European countries tend to believe that their child comes from the same cultural background as them and therefore they make less effort to acknowledge and incorporate the origin of the child in their lives and they seem to be less interested in a 'culture' that they feel is very similar to their own (Marre, 2007). As there is a need for openness of information in adoption in order to help children to manage their adoptive status (Neil, 2012), these families might need extra support in terms of helping their children make sense of their story.

Moreover, in Spain, there is a consensus among the adoption agencies and adoptive families according to which, in Eastern Europe, health problems must be exaggerated to allow the judge to authorize an international adoption (Marre, 2007). Furthermore, there is a widespread (and false) belief that the medical records of all children adopted in the former Soviet Union are not true and therefore parents are not prepared enough for the difficulties that their children might present. In this context, families who adopt in these countries are more likely to have an unrealistic idea of the child that they are expecting and more likely to struggle to accept – and deal with – the difficulties.

The second objective of this study was to explore which factors influence the higher display of ADHD symptoms among these children. In this regard, our results show that being a girl was a protective factor for the display of hyperactivity/impulsivity symptoms. Knowing that the prevalence of ADHD is higher among boys, and that girls with ADHD are more likely to be inattentive than hyperactive/impulsive, these data are not unexpected and are in tune with other studies.

Furthermore, our results show that the older children had more probabilities of showing inattention. In this regard, Rojewski et al. (2000), studied a sample of 39 girls adopted from China (aged between 1 and 9 years) and concluded that older adoptees were more likely to be rated hyperactive by their parents than young children. Our data show that this effect was not observed regarding the Hyperactivity/impulsivity scale but it was observed with respect to the inattention scale. Differences in the characteristics of the sample (this is a larger sample, including males and females, and children are adopted from other regions and of older ages) might account for the

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differences in these results. However, it is important to note that, in both cases, older children show more symptoms than younger children. Some environmental factors (e.g. increment of the stress and pressure in the school along the pass of the years, development of difficult family dynamics, etc.) might contribute to prompt the symptoms. Also, the current approach used to deal with these symptoms might not be helping enough, in which case a change in the approach to monitor and treat these symptoms should be considered.

In this study, the age of the child at adoption had no significant effects on the display of hyperactivity/impulsivity or inattention. These results seem to be contradictory to other studies where children adopted at older ages showed more inattention and received more pharmacological treatment for ADHD (Lindblad et al., 2010). According to Beverly et al. (2008), girls who were adopted after 36 months were more likely than girls adopted before 36 months to be labeled as ADHD. On the other hand, other studies did not find any relation between the age at adoption and the level of hyperactivity or inattention. Rojewski et al. (2000) observed that the age at adoption did not significantly influence hyperactivity and attention problems in a sample of girls adopted from China. Moreover, Miller et al. (2009) affirm that the age at arrival was not related with behavioral problems in a sample of 50 children adopted from Eastern Europe. This variety of results might be partly explained by differences in the life-events experienced by adopted children before the adoption moment, which are more important than the age of arrival to the adoptive family. The mentioned differences could be influencing the effect of the age at adoption, but the analysis of this variable is complicated due to the frequent lack of knowledge about the pre-adoptive information.

Finally, neither the socioeconomic nor the marital status of the adoptive parents had any significant effects on the appearance of hyperactivity/impulsivity or inattention symptoms. A better prognosis for children adopted by high socioeconomic status families would be expected, as they might have more access to resources to cope with the possible difficulties (economic, educational, support of their partner, etc.). However, our results did not support this hypothesis, which might be due to little intergroup differences regarding these variables. Also, it is worth considering that there might be other family characteristics that might be more important and that were not analyzed in this study. Adoptive parents have also their own story which has neither been easy or straight forward: accepting the inability to have a biological child (not always but in many cases), being examined to prove that they were able to raise a child, waiting for the child and raising expectations and anxieties, etc. (St-André & Keren, 2011). Furthermore, a higher percentage of insecure attachments among adoptive parents has been observed, which could mediate their capability to deal with the challenging behaviors of the child (St-André & Keren, 2011). Therefore, the interaction between the story of the adopted child and the adoptive parents is crucial in the understanding of the symptoms displayed by the child.

The limitations of this study must be considered to interpret the results. The sample includes children that were diagnosed with ADHD and receiving treatment, children that were diagnosed but not under treatment and children that were not diagnosed but who scored above the cutoffs in the questionnaires. We consider that whether or not a child receives a diagnosis depends on so many factors (e.g. the level of school demand, the willingness of the parents to consult when having problems, the personal opinion of the doctor, etc.). Therefore we decided to focus on the symptoms instead of on the diagnosis. Also, the increment of the sample of children adopted from other regions would be useful in order to segregate the group in three subgroups (Africa, Asia and Latin America) when conducting the statistical analysis.

5. Conclusion

Our results show that the frequencies of ADHD symptoms were markedly higher for children adopted from Eastern Europe when compared to children adopted from other regions. Therefore this group of children is at higher risk for the display of ADHD symptoms. However, the factors that might be involved in the onset of these symptoms are still very uncertain and difficult to analyze. The interaction between the story and characteristics of the adopted child and the story and characteristics of adoptive parents should be further explored in order to best help these children to adapt to their new family and society. Furthermore, we believe that understanding which post-adoptive events are more beneficial for the adaptation of these children would be more helpful (and easier to put into practice) than understanding the pre-adoptive factors that were more harmful.

Acknowledgments

This study is included from 2008 until 2009 in the Research project MEC R+D SEJ 2006–2009 15286 *International Adoption: social and familial inclusion of the internationally adopted children. Interdisciplinary and comparative perspectives*, and from 2010 in the continuation of the same project: *National and international adoption: family, education and pertinence: interdisciplinary and comparative perspectives*. (CSO2009-14763-C03-01) (Subprogram SOCI), both funded by the Spanish Ministry of Science and Innovation. We are also most grateful to all the families who have participated in the study and to the pediatric service of the Hospital Sant Joan de Déu, in Barcelona.

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Please cite this article as: Abrines, N., et al., Comparing ADHD symptom levels in children adopted from Eastern Europe and from other regions: Discussing possible factors involved, *Children and Youth Services Review* (2012), doi:10.1016/j.childyouth.2012.05.025

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Please cite this article as: Abrines, N., et al., Comparing ADHD symptom levels in children adopted from Eastern Europe and from other regions: Discussing possible factors involved, *Children and Youth Services Review* (2012), doi:10.1016/j.childyouth.2012.05.025