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Abstract

Objective: This study aims to ascertain once and for all whether children and adolescents affected by ADHD show a higher risk for accidents, as well as investigating a possible association between the administration of ADHD-specific medication and the occurrence of accidents. **Method:** Two exceptionally large sets of data were implemented in this analysis. Participants included children and adolescents representative of the entire German population. Data for Survey 1 was collected through extensive administration of questionnaires. Data for Survey 2 stemmed from the records of a leading German health insurance company. In terms of statistical analysis, chi-square tests as well as logistic regression analyses were applied and odds ratios (ORs) were determined. **Results:** Innovative results are presented showing a significantly higher likelihood for ADHD-affected youngsters to be involved in accidents compared with their nonaffected counterparts (Survey 1: OR = 1.60; Survey 2: OR = 1.89) but lacking an overall significant influence of medication regarding the occurrence of accidents (Survey 1: OR = 1.28; Survey 2: OR = 0.97). Frequency of accidents could be predicted by ADHD, gender, and age in both samples. Medication intake served as a weak predictor only in Survey 2. **Conclusion:** It has been determined in two representative and independent German samples that youngsters with ADHD are at a significantly higher risk of being involved in accidents. In the future, this should always be considered when setting up a treatment plan to ensure a safer and healthier coming of age without relying solely on specific effects of medication. (*J. of Att. Dis.* 2016; 20(6) 501-509)

Keywords

ADHD, adolescents, children, ADHD-associated problems, pharmacotherapy

Introduction

A notable and comprehensive examination of the most common unintentional childhood injuries can be found in the “World report on child injury prevention” (WHO UNICEF, 2008). It states that child injuries are a major public health problem and points out that injury and violence result in about 950,000 deaths in children and adolescents each year and that unintentional injuries make up almost 90% of these cases. A previous landmark report published by UNICEF (2001) ascertained that almost a staggering 40% of deaths in the age group of 1- to 14-year-olds are the result of injury.

Alongside the call for ideal preventative measures, there is, therefore, an obvious and pressing need to determine those groups which are most at risk. The successful determination of such high-risk groups will lead to more effective implementation of appropriate safety precautions and reduce expense on medical care at the very least.

It seems plausible that children and adolescents affected by ADHD, which is a chronic disorder with substantial life-long impact characterized by inattention, impulsivity, and hyperactivity, show a pattern of recurring behaviors, which may potentially put them at higher risk for accidents than their healthy counterparts.

In recent years, surprisingly few studies have shown that children and adolescents with ADHD are more likely to be involved in accidents. The great majority of these studies have been conducted in the United States and pertain to

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samples comprised of individuals beyond the childhood years (Barkley, Murphy, O'Connell, & Connor, 2005; Biederman et al., 2012). We would suggest American results cannot and should not automatically be assumed to represent or be relevant to a European population. Social and familial conditions in the United States, as well as the educational system and in particular the health system, are in many respects entirely different from those that are common in Western European countries.

For this reason, the current study has focused on an up-to-date European perspective regarding children and adolescents with ADHD and accident proneness. The examined population has been taken from two large epidemiological German databases. Although European countries do vary among themselves, language being the most obvious difference, Germany can be regarded as representative of Western European countries, seeing that it corresponds highly with other European states in crucial aspects, such as education, wealth, and access to public health care, as established by the Human Development Report (United Nations Development Programme, 2013).

As mentioned above, there are a few studies originating in America, which have previously been conducted to shed some light on the issue at hand. Merrill, Lyon, Baker, and Gren (2009) examined the connection between ADHD and risk of injury. They found a definite increase of several types of injury among those affected by ADHD, but interestingly, individuals receiving medication (drugs predominantly or typically used for ADHD) for the disorder did not show a significantly reduced likelihood to experience injury compared with those not receiving medication. However, it should be pointed out that the sample investigated is comprised of a very self-contained group of people. This sample ($n = 2,186$, classified as having ADHD) consisted solely of employees and affiliates of the Church of Jesus Christ of Latter-day Saints (Mormons), so that the results can hardly be regarded as generally representative of a broader population, let alone of Western Europe. Another limitation is that the *M* age of the sample was 23 years of age. This makes it difficult to directly apply the study's findings to young children or even adolescents, the group affected most severely by ADHD.

Along a similar vein, Maxson, Lawson, Pop, Yuma-Guerrero, and Johnson (2009) determined that in a pediatric patient group (6-12 years old, $n = 133$ admitted for specific injury mechanisms; $n = 157$ admitted for appendicitis), those patients admitted due to an injury were 3.25 times more likely to screen positive for ADHD than the appendicitis group.

Correspondingly, Pastor and Reuben (2006) concluded that children ($n = 3,741$) who had ever been diagnosed with ADHD were more likely to have been involved in a medically attended but nonfatal injury during the previous 3 months before being questioned for the study, in comparison with children who had never been identified with ADHD ($n = 48,243$).

A somewhat older study (Farmer & Peterson, 1995) examined a small sample of 7- to 11-year-old boys ($n = 14$ diagnosed with ADHD and $n = 16$ controls) in respect to injury risk factors in children with ADHD by having them watch a videotape simulating play activities depicting risky behaviors, which they were later questioned on. Groups showed no differences in their ability to identify hazards, but children with ADHD anticipated less severe consequences following risky behaviors and reported fewer active methods of preventing injury in comparison with the control group.

Likewise, another not too recent study (DiScala, Lescohier, Barthel, & Li, 1998) examined a group of injured children ($n = 240$ diagnosed with ADHD and $n = 21,902$ controls, 5-14 years of age) and determined that those with ADHD were more likely to sustain more severe injuries related to means of transportation (motor vehicle occupant, pedestrian, bicycle, motorcycle, all-terrain vehicles/recreational vehicles) than those children without ADHD.

At this point, it should be pointed out that research on risks related to ADHD and road traffic are of interest in connection to the current research since, according to an overview published by the World Health Organization (Peden, McGee, & Sharma, 2002), more than half of all injuries can be classified as unintentional injury, of which the majority pertain to road traffic. Since the mid-1990s, there has been some research on the impact of ADHD on driving safety. There seems to be a definite association between ADHD and driving-related impairments and resulting accidents, as well as significant improvement of driving performance in individuals affected by ADHD through the administration of stimulant medication (Barkley & Cox, 2007; Fischer, Barkley, Smallish, & Fletcher, 2007; Jerome, Segal, & Habinski, 2006; Reimer, Mehler, D'Ambrosio, & Fried, 2010; Verster et al., 2008). However, the studies mainly used simulated conditions and relied on self-appraisal reports concerning driving history and performance and did not focus on the road safety of children and adolescents.

In contrast, a number of studies, nevertheless, have refuted the above findings. For instance, Byrne et al. (2003) claimed that it is far more likely for oppositional behavior/conduct disorder to be a reliable predictor for increased risk of injuries, rather than ADHD or, specifically, hyperactivity (Davidson, 1987; Jaquess & Finney, 1994). Byrne et al. (2003) reported that preschoolers with ADHD (oppositional defiant disorder had been exclusion criteria) were not more likely to present injuries, which required medical treatment, compared with healthy controls.

Similarly, Garzon, Huang, and Todd (2008) determined that children affected by oppositional defiant disorder and ADHD showed significantly more injury-risk-taking behavior and injured children had a 17-fold increase in high-risk-taking behaviors. Nevertheless, no significant association existed between either oppositional defiant disorder or

ADHD and being treated in an emergency department for unintentional injury. Importantly, these results stem from a population-based, nonclinical sample and should therefore not be overgeneralized.

In addition, Pittsenbarger, Grupp-Phelan, and Phelan (2008) ascertained that there was nothing to be gained from screening injured children presenting to the emergency department for ADHD symptoms, as the frequency of parent reported ADHD symptoms did not differ significantly between injured versus uninjured patients.

The above has offered an overview on the state of scientific knowledge originating in the United States. Two current European studies have, however, been published recently. They involve a Dutch (van den Ban et al., 2014) sample (0- to 18-year-olds, $n = 1,289$ comprising an ADHD medication cohort) and a Finnish (Hurtig, Ebeling, Jokelainen, Koivumaa-Honkanen, & Taanila, 2016) population ($n = 105$ adolescents with a diagnosis of ADHD), respectively. The Dutch study (van den Ban et al., 2014) was able to establish a higher rate of injuries among children and adolescents receiving ADHD-specific medication in relation to a comparison group (matched for age and gender) with no history of ADHD drug use. Critically, the classification of the cohort was based solely on information regarding ADHD drug use, therefore lacking any further information regarding formal medical diagnosis. The reference cohort, consequently, had no history regarding prescriptions for ADHD-typical medication, but it remained unknown as to whether ADHD had nevertheless been diagnosed. Hurtig et al. (2016) made use of a Northern Finnish Birth Cohort from 1986 and were able to establish an association between hospital-treated injuries and ADHD symptoms. It is of vast interest that these recent studies have been published. However, it is questionable how transferable these results may be on a larger scale and, as the involved countries are rather small, in comparison with the rest of Europe. Consequently, the current vast epidemiological study drawing on a continental population of children and adolescents has been carried out to lend more weight to these initial findings and get more significance in terms of clinical relevance and value.

To conclude, the purpose of our epidemiological study is (a) to determine the prevalence of accidents in children and adolescents affected by ADHD in two unusually large samples representative of a Western European population and (b) to investigate a possible connection between the administration of ADHD-specific medication and its impact on the likelihood of occurrence of accidents.

Survey I

Method

Procedure and participants. The sample used is derived from the National Health Interview and Examination Survey for

Children and Adolescents (KiGGS), a nationwide, representative cross-sectional health interview and examination survey conducted in Germany from May 2003 until May 2006 by the Robert Koch Institute. In total, the survey's examinations took place in 167 German towns across the entire country, creating a representative epidemiological sample. More detailed information as to the objectives, design, and measurements of the KiGGS study can be found in Kurth et al. (2008). The children and adolescents were physically examined and the parents (father or mother, depending on who had accompanied the child) as well as children over the age of 11 years completed an extensive self-administered questionnaire involving psychological and social assessment. The study fully complies with the Declaration of Helsinki and was ethically approved by the ethics committee at the University Hospital Charité in Berlin (Germany) as well as the Federal Office for the Protection of the Data. Written informed consent was obtained from the primary caregivers of all participants as well as from participants as of an age of 14 years. In total, we included 13,437 cases aged 3 to 17 years, for which information regarding ADHD diagnosis, medication, as well as occurrence of accidents was available. Children younger than 3 years were excluded from our analysis because an ADHD diagnosis was not applicable to them. On average, the participants were aged 10.40 years ($SD = 4.23$).

For the purpose of our analysis, we allocated the participants to two groups: (a) ADHD group and (b) non-ADHD group.

Participants were allocated to the ADHD group, if they had ever been diagnosed as having ADHD by a medical doctor or psychologist according to international diagnosis criteria. To determine whether ADHD had ever been diagnosed, the parents of the 3- to 17-year-olds were asked whether their child had ever received a clinical diagnosis of ADHD (Huss, Hölling, Kurth, & Schlack, 2008). Of the 13,437 cases, 653 (4.8%) had been diagnosed with ADHD by a doctor or psychologist. Participants were allocated to the non-ADHD group, if they had never received an ADHD diagnosis.

Among those diagnosed with ADHD, 132 (20.2%) were female and 521 (79.8%) were male. Respectively, in regard to the remaining participants of the survey sample who therefore had not been diagnosed with ADHD, 6,582 (51.5%) were female and 6,202 (48.5%) were male. The association between gender and a diagnosis of ADHD was significant ($\chi^2 = 243.02$, $df = 1$, $p < .001$), in terms that the male contingency of the population showed a higher likelihood for being affected by the disorder.

Medication. Data on the current intake of medication were collected by means of a standardized interview conducted by a physician (Knopf, 2007). We formed two medication comparison groups: (a) receiving ADHD-specific medication and

(b) not receiving ADHD-specific medication. These were types of medication typically used for ADHD.

Accidents. To ascertain the occurrence of accidents, parents were required to answer the following question: "Was your child injured through an accident or intake of poisonous substance during the past 12 months and had to be medically treated for it?" (Possible answers: "Yes," "No"). Parents were required to cite only the most recent accident even if several had taken place during this time span.

Strengths and Difficulties Questionnaire (SDQ). The SDQ Goodman (1997) is a brief screening tool for emotional and behavioral problems of psychiatric relevance, including 25 items that are divided between five scales: emotional problems, conduct/behavioral problems, hyperactivity/inattention, peer problems, social behavior. A total difficulties score is calculated out of the Scales 1 to 4. The full version of the SDQ was applied to identify potential differences between the two diagnosis groups (ADHD vs. non-ADHD) regarding general emotional and behavioral problems. Aspects regarding psychometric validity and comparability to another widespread questionnaire can be found in Klasen et al. (2000) and He, Burstein, Schmitz, & Merikangas (2013).

Statistical analyses. Chi-square tests were conducted to analyze the association between ADHD diagnosis and accidents as well as the association between medication intake specific to the disorder and accidents. The odds ratio (OR) was used to specify the risk for an accident in each diagnostic (ADHD and healthy controls) and medication (medication vs. no medication) group, respectively. Regarding the SDQ, differences between the diagnostic groups were analyzed with a MANOVA.

Logistic regression analyses were conducted to further evaluate the effect of ADHD, medication, gender, and age on the frequency of accidents. The logistic regression analyses included a stepwise procedure to select covariates to include in the model. The constant was included in the model, the entry probability was .05 and the removal probability was .10.

Survey 2

Method

Procedure and participants. The sample is comprised of data obtained from a German statutory health insurance company ("AOK plus") for persons residing in the German federal states of Saxony and Thuringia. The health insurance system in Germany is divided into two types of health insurance: statutory health insurance and private health insurance. In the year of 2011, 86% of the working

population (including their families) in Germany was insured with a statutory health insurance company (Statistisches Bundesamt, 2011). Therefore, it is commonly regarded as a representative epidemiological sample of high quality for research purposes. The current database contains information about every occasion an insured person made use of medical services, concerning all given ICD-10 (*International Statistical Classification of Diseases and Related Health Problems*) diagnoses and prescribed medication. A dual-pass pseudonymization procedure of the patient data was performed by an independent service provider. This service acts in compliance with the applicable legal regulations. The pseudonymization codes are neither accessible to the current researchers nor the involved health insurance company. The survey was appraised by the ethics committee at the University Hospital in Dresden (Germany). For the purpose of this examination, data of the years 2005 to 2007 were analyzed. The total sample size included 383,292 individuals born between 1984 and 2001. A total of 196,007 (51.1%) of the individuals were male and 187,285 (48.8%) were female. Participants were allocated to the ADHD group if they had received a diagnosis from the group of hyperkinetic disorders according to ICD-10. Participants were allocated to the non-ADHD group, if they had never received such a diagnosis. Of the 383,292 cases, 18,741 (4.9%) had been diagnosed with ADHD. Among those diagnosed with ADHD, 4,998 (26.7%) were female and 13,743 (73.3%) were male. Respectively, in regard to the remaining participants of the survey sample who therefore had not been diagnosed with ADHD, 182,287 (50.0%) were female and 182,264 (50.0%) were male. The association between gender and a diagnosis of ADHD was significant ($\chi^2 = 3,884.17$, $df = 1$, $p = <.001$), in terms that the male contingency of the population showed a higher likelihood of being affected by the disorder. On average, the participants were aged 14.27 years ($SD = 5.19$).

Medication and accidents. We analyzed the data set with regard to ICD-10 diagnosis of ADHD and prescriptions of drugs most commonly implemented in the treatment of ADHD. Furthermore, we comprised all records of ICD-10 codes of injuries that typically originate from an accident.

Statistical analyses. Chi-square tests were conducted to analyze the association between ADHD diagnosis and accidents as well as the association between medication intake and accidents. The OR was used to specify the risk of an accident in each diagnostic (ADHD vs. non-ADHD) and medication (medication vs. no medication) group, respectively. Logistic regression analyses were conducted to further evaluate the effect of ADHD, medication, gender, and age on the frequency of accidents. The logistic regression analyses included a stepwise procedure to select covariates

Table 1. Mean SDQ Scores of Children and Adolescents Diagnosed With ADHD and Those Without a Diagnosis of ADHD.

Measure	Diagnosed with ADHD	Non-ADHD	MANOVA		
	M (SD)	M (SD)	F	df	p
Emotional problems	3.13 (2.24)	1.65 (1.70)	456.12	1	<.001
Behavioral problems	3.19 (2.01)	1.83 (1.44)	524.85	1	<.001
Hyperactivity	6.25 (2.24)	2.86 (2.09)	1,620.26	1	<.001
Peer problems	2.59 (2.17)	1.30 (1.51)	433.60	1	<.001
Prosocial behavior	7.20 (1.92)	7.84 (1.69)	86.74	1	<.001
Total problems	15.16 (6.08)	7.63 (4.63)	1,580.45	1	<.001

to include in the model. The constant was included in the model, the entry probability was .05 and the removal probability was .10.

Survey 1

Results

SDQ. The MANOVA revealed differences between children and adolescents diagnosed with ADHD and those without a diagnosis of ADHD on all five subscales of the SDQ as well as on the total problem scale (see Table 1).

Likelihood of accidents during the last 12 months and impact of medication. Among the 13,437 participants, 2,108 (15.7%) reported to have been involved in an accident requiring medical treatment during the past 12 months. Among the children and adolescents diagnosed with ADHD, the percentage of those who had been involved in an accident was 23%, while it was 15.3% among the non-ADHD group. Pearson's chi-square test shows that children and adolescents without an ADHD diagnosis and those diagnosed with ADHD differ in the likelihood with which they were involved in accidents requiring medical treatment ($\chi^2 = 2,752$, $df = 1$, $p = <.001$). The OR for accidents was 1.60 (95% confidence interval [CI] = 1.34-1.91) in children and adolescents diagnosed with ADHD compared with those without the diagnosis.

Among the 654 children and adolescent, who were diagnosed with ADHD, 142 (21.71%) had been treated with ADHD medication. The frequency of accidents requiring medical treatment during the past 12 months did not differ between the nonmedicated children and adolescents with ADHD and those who received ADHD medication ($\chi^2 = 2.23$, $df = 1$, $p = .085$). The OR for accidents was 1.28 (95% CI = 0.93-1.77) in children and adolescents receiving ADHD medication compared with children and adolescents with ADHD receiving no medication.

The variables ADHD diagnosis, medication, gender, and age were entered as covariates into a logistic regression analysis and frequency of accidents was entered as the dependent variable. All of the covariates except medication were

Table 2. Summary of Logistic Regression Analysis for Accidents.

	B (SE)	Wald	Exp(B)	p
ADHD diagnosis	0.40 (.10)	16.64	1.49	<.001
Gender	0.22 (.05)	21.51	1.25	<.001
Age	-0.03 (.01)	20.04	0.98	<.001
Constant	1.47 (.12)	162.03	4.33	<.001

included in the final equation. ADHD diagnosis was entered into the first step, gender was entered into the second step, and age was entered into the third step. Results regarding diagnosis status revealed that children and adolescents with ADHD are 48.9% more likely to have been involved in an accident resulting in injury. Furthermore, it was determined that it was 25.1% more likely for boys to have been involved in an accident. Finally, the likelihood of being involved in an accident diminished with progressing age. Contributions of each variable in the equation can be found in Table 2.

The classification accuracy rate of the complete model was 84.3%, indicating that the model can be characterized as useful.

Survey 2

Results

Likelihood of accidents during the last 12 months and impact of medication. It was determined that 171,397 (44.7%) individuals of the total sample of 383,292 had suffered an injury due to an accident during the years 2005-2007. Among the children and adolescents diagnosed with ADHD, 60.48% sustained an injury because of an accident, whereas this applied to only 43.9% among the non-ADHD group.

Pearson's chi-square test shows that the non-ADHD group and the ADHD group differ in the likelihood with which they were involved in accidents requiring medical treatment ($\chi^2 = 1,979.75$, $df = 1$, $p = <.001$).

The OR for accidents was 1.89 (95% CI = 1.84-1.95) in children and adolescents diagnosed with ADHD compared with those without ADHD.

Table 3. Summary of Logistic Regression Analysis for Accidents.

	B (SE)	Wald	Exp(B)	p
ADHD diagnosis	0.44 (.02)	551.37	1.55	<.001
Medication	0.09 (.03)	9.47	1.10	.002
Gender	-0.30 (.01)	2,091.28	0.74	<.001
Age	0.03 (.00)	1,591.28	1.03	<.001
Constant	-0.50 (.03)	365.38	0.60	<.001

Among the 18,741 children and adolescents, who had been diagnosed with ADHD 6,184 (33.0%) had been treated with ADHD medication.

The frequency of accidents requiring medical treatment over the years 2005-2007 did not differ between the non-medicated children and adolescents with ADHD and those who received ADHD medication ($\chi^2 = 1.88$, $df = 1$, $p = .172$).

The OR for accidents was 0.97 (95% CI = 0.93-1.01) in children and adolescents receiving ADHD medication compared with children and adolescents with ADHD receiving no medication.

The variables ADHD diagnosis, medication, gender, and age were entered as covariates into a logistic regression analysis and frequency of accidents was entered as the dependent variable. All of the covariates were included in the final equation. ADHD diagnosis was entered into the first step, medication was entered into the second step, gender was entered into the third step, and age was entered into the fourth step. The results indicate that children and adolescents with ADHD are 50.6% more likely to have been involved in an accident resulting in injury. Furthermore, it was determined that it was 35.1% more likely for boys to have been involved in an accident. Those participants receiving medication for the treatment of ADHD were 9.6% more likely to be involved in an accident compared with the rest of the entire sample.

Finally, the likelihood of being involved in an accident diminished with progressing age. Contributions of each variable in the equation can be found in Table 3.

Discussion

The present study has shown that ADHD-affected children and adolescents representative of a Western European population are more prone to accidents requiring medical attendance than their nonaffected counterparts. It was determined that 4.8% of children had received a diagnosis of ADHD in Survey 1 and 4.9% were diagnosed with ADHD in Survey 2. These findings are comparable with those of previous research regarding prevalence rates of ADHD in Germany (prevalence rates of the diagnosis of ADHD were 11.5% according to *Diagnostic and Statistical*

Manual of Mental Disorders (4th ed.; American Psychiatric Association, 1994; *DSM-IV*) and 3.4% according to ICD-10 in Görtz-Dorten and Döpfner, 2009, and 2.21% for ADHD diagnosis in Schubert, Köster, and Lehmkuhl, 2010).

There is an existing clinical assumption that children, adolescents and young adults affected by ADHD are at higher risk for sustaining injuries compared with their typically developing peers (Byrne et al., 2003). As mentioned above, there are also some studies that have shown that individuals in the United States afflicted with ADHD are more likely to be involved in accidents (DiScala et al., 1998; Merrill et al., 2009; Pastor & Reuben, 2006). Recent European studies have produced comparable results and added to the ongoing discussion (Hurtig et al., 2016; van den Ban et al., 2014). The aforementioned studies have contributed valuable information adding to the general knowledge of this area, but they had not yet succeeded in delivering results such as these using a representative sample of such substantial size, focusing on children and adolescents, considering a long period of time for potential accidents previous to the actual examination as well as differentiating between those being treated with ADHD-specific medication and those without such medication. The current research, therefore, can report on conclusive results lending substantially more weight to the clinical impression of children and adolescents with ADHD being at higher risk for sustaining injuries, which concur with previous results based largely on American samples. The current findings are of particular value as they are based on two very large sets of data and are specific to a population representative of European children and adolescents affected by ADHD. Having been able to replicate these previously mainly American findings, leads to the conclusion that a higher frequency of accidents among ADHD-affected children and adolescents is truly specific to this disorder. Eventually more specific recommendations may hopefully be derived from these findings. They may be directed specifically at clinicians working with ADHD-affected families, and could include practical everyday precautions as well as specific techniques, which should be implemented during therapy.

In addition to reporting on the association between occurrence of accidents and ADHD-affected youngsters, our findings also helped to elucidate the impact of medication administered for ADHD on the frequency of accidents. It was determined that there was no overall difference regarding the frequency of occurred accidents whether children and adolescents affected by ADHD received specific medication.

In terms of limitations regarding our present study, it has to be taken into consideration that as data for medication administered for those diagnosed with ADHD had also been

collected, it seemed an excellent opportunity to include this in the current analysis. However, seeing that this epidemiological study did not follow a case-control design, it must be stressed that the domain regarding medication was merely looked at exploratively and cannot be considered as a precise examination in itself. In this respect, it could be advantageous to conduct further research taking additional factors into consideration to add more depth to the question of causality regarding this matter. This, therefore, should not be understood to mean that the apparent tendency regarding the aforementioned aspect, which can be derived from the present study is not noteworthy, but rather strikes us as being of great interest, even if it is only a preliminary result. If this finding were to be replicated, it might provide further insight into the mechanisms underlying ADHD and relevant associated risks.

A further limitation of our study lies in the fact that it relies on an existing data source to explore the questions at hand. Retrospective approaches such as these involve integral drawbacks. Ultimately, the lack of a formal clinical diagnosis by means of standardized instruments as is common in clinical practice presents a further limitation. The lack of a parameter for ADHD severity as well as time of accident is also a limiting factor in the interpretation of our findings. Finally, it would also have been of interest to examine the association between ADHD and other disorders, such as conduct disorder, regarding accident proneness, as has been done in previous research. Unfortunately, interpretations regarding this issue cannot be made.

In our view, we have succeeded in providing sufficient empirical evidence to put claim to having settled the ongoing argument regarding the clinical presumption that children with ADHD are prone to be being involved in more accidents than their healthy counterparts. Having said that, we would suggest that it would be of interest to extend this research on a pan-European (EU) level.

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