

The sleep habits and sleep disorders in children with headache

Żarowski M, Młodzikowska-Albrecht J, Steinborn B*

Chair and Department of Developmental Neurology, Poznań University of Medical Sciences, Poland

Abstract

Purpose: The study was conducted to examine the sleep habits and sleep disorders in children and adolescents with headache.

Material and methods: Three hundred children with headache were qualified to a headache group (HG) and 284 children from schools and kindergartens without headache to a control group (CG).

Results: In our study, 27.7% children of the HG slept together with other person in the bed; 18.7% of the CG. In the HG, 11.7% of children had physical contact with parents when falling asleep, in the CG 19.7%. In the HG, watching TV and listening to the radio when falling asleep occurred more frequently. About 20% of parents in the HG read aloud to children before putting them to sleep, in the CG 32.4%. Day naps occurred in 32.7% of the HG children and in 20.1% of the CG. Sleep disorders reported in the study group as parasomnia symptoms included: sleep talking 48.3% (CG 38.7%); bruxism 23.3% (CG 16.5%); leg movement 20.3% (CG 18.0%); nightmares 16.7% (CG 7.4%) and sleep breathing disorder symptoms like snoring 27.3% in the HG group (CG 19.0%) and breathing pauses 5.7% (CG 1.4%). Awakenings from the night sleep were observed in 43.7% children of the HG and in 36.4% children of the CG.

Conclusions: Sleep habits in children with headache were considerably different from sleep habits in the CG. The prevalence of sleep disorder symptoms like: snoring, sleep talking, bruxism, sleep terror, nightmares, breathing pauses and awaking from night sleep was higher in the HG group than in the CG.

Key words: headache, sleep disorder, sleep habits, children.

Purpose

Sleep disorders are very common in the population of children [1]. The etiology of sleep problems is very complicated and depends on many varied factors. The psychological factors concerning the family life and general state of health have a significant impact on children. It is known by clinical experience that various kinds of sleep disorders are more frequent in that group of children than in the general population of children [2]. There are only several professional publications discussing the epidemiology of sleep disorders in children and adolescents with headache. This study was conducted to examine the sleep habits and sleep disorders in children and adolescents with this chronic neurological syndrome.

Material and methods

From May 2005 to October 2006, 1 100 children and adolescents from Poznań area were investigated using a specially developed questionnaire. The first part of the survey was conducted in the Chair and Department of Developmental Neurology, Poznań University of Medical Sciences. All patients admitted to the Department were examined using the questionnaire. There were 300 children and adolescent who matched the criterion of migraine headache or tension type headache equal to The International Classification of Headache Disorders 2nd edition (ICHD-2) qualified to the study group [3].

There were 284 children from schools and kindergartens without headache qualified to a control group. The control group consisted of approximately 5% of the whole population of children in Poznań. The questionnaire used in the survey was a sleep questionnaire developed by the authors, filled in by the parents. Each questionnaire was accompanied with a letter

* CORRESPONDING AUTHOR:

Chair and Department of Developmental Neurology
Poznań University of Medical Sciences
60-355 Poznań, ul. Przybyszewskiego 49, Poland
Tel: + 48 61 8691255
e-mail: zarowski@amp.edu.pl (Marcin Żarowski)

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Table 1. Group characteristic

	HG	CG
N	300	284
Mean age	12.6	8.6
Age standard deviation	4.0	4.4
Girls	53.3% (n=160)	52.7% (n=147)
Boys	46.7% (n=140)	47.3% (n=132)

HG – Headache group; CG – Control group

Table 3. Sleep habits and naps

	HG	CG
Sleep in one bed with somebody	27.7%*	18.7%*
Sleep in one room with somebody	57.7%	58.1%
Physical contact	11.7%*	19.7%*
Watching TV	20.3%**	8.1%**
Listening to the radio	26.7%**	15.1%**
Parents reading	20.0%**	32.4%**
Day naps	32.7%**	20.1%**

Significant results are indicated: *p<0.05; ** p<0.005;
HG – Headache group; CG – Control group

describing the study. Most of the questions referring to children's sleep were answered by ticking a correct yes/no box. The questionnaire consisted of points relating to the child's sleeping habits (e.g. co-sleeping, daytime naps); sleep disorders (e.g. sleepwalking, sleep talking, bruxism, leg movements, snoring, breathing pauses, etc.); frequent night-time awakenings, daytime sleepiness, family sleep disorder history and demographic data. The parents were assisted with the questionnaire by the investigators. The investigators were all trained to ask questions and record answers to ensure the quality of responses. Before conducting the study, the sleep questionnaires were pilot tested on a sample of 100 patients of the Department of Developmental Neurology. The study was approved by the Institutional Review Board at Poznań University of Medical Sciences and the local Chief Education Officer of Poznań. The chi² test was used for statistical analysis. All statistical analyses were made using the Statistical Program for the Social Sciences (SPSS) for Windows. The statistical significance was set at P<0.05. There were 160 girls (53.3%) and 140 boys (46.7%), from 1 to 18 years of age in the study group. The control group consisted of 147 girls (52.7%) and 132 boys (47.3%) in the same age range. The mean age in the study group was 12.6 ± 4.0 years and in the control group 8.6 ± 4.4 years.

Results

In the HG, 98.9% of parents described the general health state of their children as "very good", "good" or "fairly good", when only 88.7% in the CG. The difference was significant in the "very good", "fairly good" and "rather bad" categories. The general health state is shown in *Tab. 2*.

Table 2. General health state

	HG	CG
Very good	9.0%**	48.9%**
Good	47.0%	43.7%
Fairly good	32.7%**	6.3%**
Rather bad	5.0%*	1.1%*
Bad	0.7%	0.7%

Significant results are indicated: *p<0.05; ** p<0.005;
HG – Headache group; CG – Control group

Sleep habits and naps

In our study, 27.7% children of the HG slept together with another person in the bed; while only 18.7% in the CG. The difference was significant. About 57.7% of children in the HG slept in one room with other members of the family, in the CG 58.1%; the difference was not significant. Co-sleeping was more frequent in case of younger children, particularly in the preschool group 85.7%, and was disappearing in the secondary school group. In the HG 11.7% of children had physical contact with parents when falling asleep, in the CG 19.7%. In the HG, watching TV and listening to the radio when falling asleep were more frequent and those differences were also significant. Approximately 20% of parents in the HG read aloud to children before putting them to sleep, while 32.4% in the CG; this difference was significant. The day naps occurred in 32.7% of the HG children, 20.1% of healthy children slept during the day. This difference was significant. The sleep habits and naps are shown in *Tab. 3*.

Prevalence of Sleep Disorders

The presence of various symptoms connected with sleeping disorders (at least one symptom) was noticed by parents in 220 children (73.3%) in the HG and 65.8% in the CG. The most frequent of sleep disorders reported in the study group as parasomnia symptoms were: sleep talking 48.3% (38.7% in the CG); bruxism 23.3% (16.5% in the CG); leg movement 20.3% (18.0% in the CG); nightmares 16.7% (7.4% in the CG) and sleep breathing disorder symptoms like snoring 27.3% in the HG group (19.0% in the CG) and breathing pauses 5.7% (1.4% in the CG). Differences concerning snoring, sleep talking, bruxism, sleep terror, nightmares and breathing pauses were significant. Awakenings from the night sleep were observed in 43.7% children of the HG and in 36.4% children of the CG; those differences were statistically significant. The prevalence of sleep disorder symptoms in different groups of age is shown in *Tab. 4*. In our study 64 children (21.3%) have migraine headache. We try to compare the tension type headache and migraine headache to control group. But there were no significant differences between these groups.

Discussion

Sleep disorders are often not described, particularly in children. They are estimated to occur in 25%-30% of the popula-

Table 4. Prevalence of sleep disorder

	HG	CG
Snoring	27.3%**	19.0%**
Breathing pauses	5.7%*	1.4%*
Sleep talking	48.3%*	38.7%*
Bruxism	23.3%*	16.5%*
Leg movements	20.3%	18.0%
Enuresis	7.7%	6.3%
Sleep terror	9.0%*	4.6%*
Sleepwalking	7.0%	3.9%
Nightmares	16.7%**	7.4%**
Awakening	43.7%**	31.7%**

Significant results are indicated in bold type; * $p < 0.05$;
** $p < 0.005$; HG – Headache group; CG – Control group

tion [1,4,5]. Due to the frequency of sleep disorders in children the subject should be thoroughly researched. The parents of children with headache reported that their children had various problems with the night sleep, what was a direct reason for conducting this study.

In our study, the sleep habits and prevalence of sleep disorder symptoms (snoring, sleep talking, bruxism, sleep terror, nightmares and breathing pauses) in children with headache were significantly higher than in the CG. In our study we were particularly interested in sleep habits due to a shortage of studies on the subject in children with headache. The prevalence of sleep habits, like bed co-sleeping; watching TV and listening to the radio during falling asleep was significantly higher in the HG group than in the CG but in the CG physical contact with parents during falling asleep and parents reading were observed more frequently than in the HG. There were no significant differences between results in children with migraine headache and tension type headache. One of the basic method of sleep disorders treatment in children is parents education and implementation of the correct sleeping habits [6-9]. Discussing sleep patterns with parents provides an opportunity to learn more about the child and family and gives a possibility to evaluate

the behavioral and family interventions. It allows to educate the parents about sleep hygiene and prevent more serious sleep problems [10].

Conclusions

Sleep habits in children with headache were considerably different than sleep habits in the CG. The prevalence of sleep disorder symptoms like: snoring, sleep talking, bruxism, sleep terror, nightmares, breathing pauses and awaking from night sleep was higher in the HG group than in the CG. It is necessary to conduct an additional research on a larger group of patients with headache to correlate the prevalence of sleep disorder symptoms with the type of primary headache (migraine and tension type headache) and other symptoms.

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