# **Original studies**

#### Somnologie

https://doi.org/10.1007/s11818-024-00465-4 Accepted: 25 March 2024

© The Author(s) 2024



# Sleep help-seeking behavior of parents with children with insomnia—what counts!

Somnologie

Maria Zschoche<sup>1</sup> · Andrea Kübler<sup>2</sup> · Angelika Anita Schlarb<sup>1,3</sup>

<sup>1</sup> Faculty for Psychology and Sports Science, Bielefeld University, Bielefeld, Germany

<sup>2</sup> Institute of Psychology, Department of Psychology I, Section Intervention Psychology, University of Würzburg, Würzburg, Germany

<sup>3</sup> Faculty of Science, Department of Psychology, University of Tuebingen, Tuebingen, Germany

#### Abstract

**Background:** Insomnia in children is common and causes many mental health problems. Nevertheless, only little is known about influencing factors for sleep help-seeking behavior of parents with children with insomnia.

**Objective:** The aim of this study was to evaluate the duration and severity of insomnia in children as well as to assess the influence of additional mental disorders on insomnia duration and severity. The influence of a child's insomnia duration and severity on parental sleep help-seeking behavior was examined.

**Materials and methods:** Patients at three German outpatient sleep clinics were evaluated. A self-developed parental sleep interview according to the third edition of the International Classification of Sleep Disorders (ICSD-3) criteria was conducted for each child. Additionally, information about insomnia severity and duration, the number of sleep help-seeking efforts, and mental disorders were retrieved from the family registration form.

**Results:** A total of 175 children (4–11 years) with a mean insomnia duration of 54 months were included. Insomnia severity was high, with no differences between children with and without comorbid mental disorders. Most parents (88.6%) had made efforts to seek sleep-related help for their child's insomnia before contacting one of our outpatient sleep clinics. Pediatricians are the most frequently consulted professionals for child sleep problems. Insomnia severity ratings significantly correlated with the number of times professional help had been sought, but not with the number of self-help efforts. Insomnia duration was not correlated with any of the help-seeking measures.

**Conclusion:** Insomnia severity, but not insomnia duration, is associated with helpseeking behavior in parents. In the current sample, most parents sought professional help from their pediatrician beside their own efforts to elicit change. In sum, there were no differences between children with and without comorbid mental disorders, neither in terms of insomnia duration nor for insomnia severity. It seems necessary to promote awareness of the consequences of insomnia in children and therefore support earlier parental help-seeking behavior.

#### Keywords

 $Mental\ health \cdot Sleep\ initiation\ and\ maintenance\ disorders\ \cdot\ Chronic\ condition\ \cdot\ Insomnia\ \cdot\ Child\ health$ 



Scan QR code & read article online

# Background

Healthy sleep is essential for growing, development, and mental and physical health. However, insomnia and insomnia symptoms are not only observed in adults, they are also common in children and have various effects on wellbeing. Prevalence varies widely depending on the measure used for diagnosis. In young children, rates have been reported between 2.5 and 16.6% [10, 46], in primary school children between 8.3 and 21.2% [7, 10, 46], and in adolescents between 7.9 and 36% [7, 10], demonstrating an increase in the maximum range with increasing age.

#### Insomnia duration and chronicity

The risk of chronicity of insomnia symptoms and disorder has already been reported for adults [21, 22, 29]. Several studies have shown that patients with an insomnia diagnosis have a higher risk for chronic insomnia as compared to patients with insomnia symptoms only [21, 29]. Different theoretical models for insomnia point toward cognitive activity, cognitive arousal, distress, sleep perception, and circadian rhythms (among others) as potential factors maintaining and worsening insomnia symptoms, which may, in turn, lead to chronic insomnia [5, 15].

Not much is known about insomnia chronicity in children. Insomnia symptoms, such as problems initiating and maintaining sleep or poor sleep quality, tend to be stable over time [1, 8, 11, 28, 42]. However, only few studies used criteria for insomnia diagnoses according to the second or third edition of the International Classification of Sleep Disorders (ICSD-II/ICSD-3), the fourth or fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV/DSM-5), or the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) to examine insomnia chronification over several years in children (e.g., [7, 10, 46]). Steinsbekk and Wichstrøm [46] found untreated insomnia to be stable in 43% of their study participants (aged 4 years at first assessment) over the course of 2 years. In a 7-year longitudinal cohort study (194 children,

mean age at first assessment: 8.7 years), 7% of children had persistent insomnia according to ICSD-II criteria after 7 years [7]. A Norwegian longitudinal study (N =1037) assessed insomnia (according to DSM-IV and DSM-5) stability over the course of 10 years [10]. They found existing insomnia to be stable from one measurement to the following measurement in 32 to 40% of children and a 5- to 15-times higher probability of continuing insomnia as compared to children without insomnia [10]. In a cross-sectional study with 42 children aged 7 to 13 years, Paine and Gradisar [28] found a mean age of insomnia onset of 3.7 years and a mean duration of the latest insomnia period of 5.7 years. This early onset was confirmed by Schlarb and colleagues [34], with an age for insomnia onset (N = 112, children 5 to 11.5 years) of 3.3 years.

These studies demonstrate that insomnia starts early, has a high likelihood to become chronic, and is stable over time when not treated properly. To conclude, children with insomnia and insomnia symptoms are at risk of chronic insomnia.

#### Insomnia and mental health

Insomnia and insomnia symptoms negatively influence several aspects of daily life and functioning in children, such as reduced psychosocial functioning and quality of life [13, 30, 31, 40], reduced emotion processing and emotion regulation [3, 20, 45], and these children have an increased probability of comorbid psychological disorders [8, 12, 14].

Insomnia and insomnia symptoms during childhood are related to increased anxiety [8, 9, 12, 39], significantly predict adult anxiety and depression disorders [9, 12, 39, 43, 49], and are related to aggressive behavior [41, 50]. With age, these psychological disorders also affect sleep behavior and may cause insomnia [39].

# Recognition and severity of sleep impairment and help-seeking behavior

Problem awareness is a necessary, but not very present prerequisite for help-seeking behavior [24], i.e., parents need to recognize that their child has a sleep problem [25] and that it affects the child's health [27, 33, 37]. One study even found that parents of children with a sleep disorder know less about sleep and sleep difficulties in children than parents with children without a sleep problem [18]. Parents do not report sleep problems to their general practitioner or pediatrician [4, 36, 44]. Not only parents but also professionals fail to identify sleep problems in children and adolescents [4, 26, 36]. However, recognizing the problem is mandatory for seeking help [25], and parents become less concerned and active with increasing age of their children [6, 23, 47, 48]. Parents' helpseeking behavior is essential for treating insomnia in children, but little is known about its determinants.

Therefore, the present study assessed (1) the duration and severity of insomnia in a clinical sample of children aged 4–11 years, (2) whether children with an additional mental disorder have a longer insomnia duration and more severe sleep problems as compared to children without comorbid mental disorders, (3) how many self-help and professional help treatment efforts had been undertaken by the families, and (4) whether there is an association between help-seeking behavior and insomnia duration and severity.

#### Methods

#### Procedure

Families who presented at the authors' outpatient clinics for insomnia in Bielefeld, Tübingen, and Würzburg were included. All families completed a broad sleep-related diagnostic process, including various questionnaires about sleep and sleep problems, general demographic data, general wellbeing, and a clinical interview assessing the children's sleep problems. All participating families were informed about the goal, content, and procedure of the study, and gave informed consent. They were informed that they could guit the study at any time without negative consequences. Herein, data of the first assessment only are reported (longitudinal data are reported elsewhere). The study was approved by the institutional ethical review boards of the respective universities.

Table 1 Ove	erview of categories for self-help strategies and professional help
Categories for self-help strategies	1. changes in daily rituals
	2. changes in bedtime ritual
	3. changes of bedtime
	4. sleep hygiene improved (e.g., less light in child's room, no TV before bedtime)
	5. sleep hygiene declined (e.g., more light in child's room, music during the whole night in child's room)
	6. changes in sleeping place (e.g., changes inside child's room, together with siblings or without siblings)
	7. internet (forums, etc.)
	8. literature/books
	9. naturopathic drugs (e.g., homeopathic globules)
	10. introduced relaxation techniques
	11. implemented reward or token system
	12. changes in parenting behavior (e.g., implement penalties, show more strict behavior, lying down in child's bed, being in child's room when child is falling asleep, get child in parental bed)
	13. get help/advice from other parents/relatives/etc.
	14. other help (e.g., role play with child, change of diet, reduced sugar intake)
Categories for profes- sional help	1. pediatrician
	2. general practitioner
	3. psychiatrist
	4. psychologist
	5. child and adolescent psychotherapist
	6. social pediatric center
	7. counselling center
	8. occupational therapy
	9. other assistance (osteopathy/homeopathy/kinesiology/nonmedical practi- tioner/parenting courses)

## Measurements

#### Family registration form

The patient registration form assessed general information about the child (age, sex, mental and other health issues), socioeconomic information (parent education, siblings), and information about the child's sleep and sleep-related behavior (sleep initiation, sleep maintenance, daytime functioning). Additionally, duration and severity of the current sleep problem of the child and the number of past treatment efforts were assessed. Sleep problem severity was determined by parental rating on a 10-point Likert scale with 1 = completely normal to 10 =very problematic. Past treatment efforts were quantified with two open questions about possible self-help efforts and seeking professional help. Parental answers about the type of help were sorted into categories (**Table 1**). Multiple responses were possible. When parents reported more than one help effort which could

be assigned into one category, especially for the *other* categories, the category was counted only once.

# Diagnostic interview for sleep disturbances

A self-developed parental diagnostic interview was conducted, assessing ICSD-3 criteria for chronic insomnia [34, 38]. Exemplary questions were 1) "During the past 4 weeks, did your child have problems initiating sleep? How many minutes did your child need to fall asleep?"; 2) "During the past 4 weeks, did your child wake up during the night and if so, how often per week?" Answers were coded as follows: ?= not enough information provided by the parents to evaluate the answer; 1 = criterion not met; 2 = criterion not fully met: 3 = criterion met. The interview assessed insomnia criteria in detail and included screening guestions for symptoms of other sleep disturbances, e.g., narcolepsy ("Has your child been extremely tired during the day on a nearly daily basis for at least 3 months? Is he or she so tired, that he or she falls asleep every now and then during the day?"), sleep-related breathing disorders ("Does your child snore during the night?"), and parasomnias ("Does your child suffer from nightmares? How often?"). Children presenting with symptoms of organic sleep disorders were referred to their pediatrician for further examination.

#### Sample

A total of N = 175 children (4–11 years, mean [M] = 7.62 years, standard deviation [SD] = 1.79; 48.6% girls) were included. With both parents lived n = 151 (86.3%) children, with a single parent n = 3 (1.7%), with one parent and new partner n = 16(9.1%), and with adoptive or foster parents n = 4 (2.3%). For one child, no specific information about living conditions was available; n = 41 (23.4%) children attended kindergarten. The number of siblings varied between 0 and 8, with n = 35 (20.0%) children being the only child, most children having one sibling (n = 99; 56.6%), n = 36 (20.6%) children two siblings, and n=5 (4.0%) three or more siblings. The mean age of mothers was 39.05 (SD = 4.82) years and of fathers 40.98 (SD = 5.57) years. For two fathers, no information about age was available.

#### Analyses

All data were analyzed with IBM SPSS Statistics 25 (IBM Corp., Armonk, NY, USA; [17]). Normal distribution was tested with Shapiro–Wilk test. Data were not normally distributed for all variables. Mann–Whitney U test was, thus, used for group comparisons, and Kendall's tau as a correlation coefficient. To maintain a sample size as big as possible, children with missing data on insomnia severity only (n = 28) were included to maintain a high sample size. This led to different sample sizes throughout the results section. Significance level was set at  $\alpha = 0.05$ .

Children with one or more mental disorder beside insomnia were categorized into the insomnia plus mental disorder group (I-MD), whereas children with insomnia but no other mental disorder were classified

# **Original studies**

Table 2         Insomnia duration in months and proportion of lifetime										
	Min	Max	Mean	SD	% lifetime	SD				
All (N = 175)	3	130	53.95	35.14	57.64	35.10				
Age groups										
4/5 years (n = 29)	5	70	42.33	20.98	64.75	31.69				
6 years (n = 25)	4	82	51.80	26.93	66.92	34.19				
7 years (n = 27)	3	90	58.85	27.25	66.18	30.98				
8 years (n = 34)	4	102	49.62	31.03	49.39	31.34				
9 years (n = 28)	5	115	67.29	43.44	59.62	38.59				
10/11 years (n = 32)	3	130	54.97	48.46	43.77	38.69				
I-NOMD (n = 112)	3	130	52.88	34.36	57.92	35.43				
I-MD (n = 63)	3	123	55.86	36.69	57.13	34.76				

*Min* minimum insomnia duration in months, *Max* maximum insomnia duration in months, *SD* standard deviation, *% lifetime* percentage proportion of the children's lifetimes with insomnia, *I-NOMD* insomnia plus no other mental disorder, *I-MD* insomnia plus another mental disorder

Table 3         Insomnia severity rated by parents							
	Min	Max	Mean	SD			
All (N = 147)	4	10	7.99	1.49			
Age groups							
4/5 years (n = 24)	5	10	7.71	1.55			
6 years (n = 19)	5	10	7.79	1.69			
7 years (n = 22)	6	10	8.14	1.25			
8 years (n = 30)	4	10	8.27	1.41			
9 years (n = 23)	4	10	7.91	1.76			
10/11 years (n = 29)	4	10	8.00	1.39			
<i>I-NOMD</i> ( <i>n</i> = 93)	4	10	7.94	1.46			
I-MD (n = 54)	4	10	8.07	1.55			
Min minimum insomnia severity, Max maximum insomnia severity (scale: 1–10), SD standard devia-							

tion, I-NOMD insomnia plus no other mental disorder, I-MD insomnia plus another mental disorder

as insomnia without other mental disorder (I-NOMD).

## Results

#### Insomnia duration and severity

Average childhood insomnia duration was 53.95 months (SD = 35.14 months), i.e., 4 years and 6 months. Mean age of insomnia onset was 37.49 months. Children younger than 11 years of age had spent half or more of their lifetime with insomnia or insomnia symptoms (**Table 2**).

Insomnia severity was rated as high (M = 7.99, SD = 1.49) by parents ( $\blacksquare$  Table 3).

# Insomnia duration and severity in children with and without additional mental disorders

Most of the children, n = 112 (64%), had no other mental disorder; n = 48 (27.4%) had one, n = 12 (6.9%) had two, and n = 3 (1.7%) had three additional mental disorders. Albeit descriptively, insomnia severity (I-NOMD: mR (mean Rank of Mann-Whitney U test for group comparisons) = 72.87; I-MD: mR = 75.95; U = 3,676.50, p = 0.644) was lower and duration (I-NOMD: mR = 86.67; I-MD: mR = 90.36; U = 2,616.50, p = 0.663) shorter in the I-NOMD group; neither of the two ratings differed between the groups (**C** Tables 1 and 2).

Since no significant between-group differences were found for insomnia duration and severity, the following calculations were conducted for the whole sample.

# Help-seeking behavior—number of self-help and professional help treatment efforts

Most of the parents (88.6%) reported selfhelp efforts and two thirds (66.9%) had tried to receive professional help prior to their contact with the insomnia outpatient clinic. The number of self-help efforts varied between 0 and 11 (M = 2.88, SD = 2.29), and that of seeking professional help between 0 and 8 (M = 1.25, SD = 1.40).

Parental answers showed a wide variety in the self-help strategies tried out. The main self-help strategy was *changing parenting behavior* (n = 84), followed by *changing the bedtime ritual* (n = 57), and *changes in sleeping place* (n = 37). See **D** Fig. 1 for an overview of the distribution of self-help strategy categories.

The reported parental professional help-seeking showed less variability. The main professional help-seeking strategy reported by parents was consulting a pediatrician (n = 84), followed by a clear margin by consulting a counseling center (n = 24) and a psychologist (n = 13). Almost a quarter of parents also reported efforts in the category "other assistance" (n = 41), including osteopathy, homeopathy, and others. See **©** Fig. 2 for an overview of the distribution of professional help-seeking strategy categories.

# Relationship between self-help, professional help, insomnia duration, and insomnia severity

Insomnia severity rating was significantly correlated with the number of efforts at seeking professional help ( $\tau = 0.199$ ; p =0.003) but not with the number of selfhelp efforts ( $\tau = 0.035$ ; p = 0.591). Neither the number of self-help efforts ( $\tau = -0.034$ ; p = 0.533) nor the number of seeking professional help efforts ( $\tau = 0.083$ ; p = 0.151) were significantly correlated with insomnia duration. However, most importantly, insomnia severity, but not insomnia duration, seems to be associated with seeking professional help. The number of selfhelp and professional help seeking efforts were significantly correlated ( $\tau = 0.124; p =$ 0.042).

# Discussion

The present study assessed insomnia duration and severity, differences in insomnia duration and severity measures between children with and without additional mental disorders, and parental help-seeking







Fig. 2 ◀ Parental answers clustered in categories for the kind of professional help. Multiple answers were possible. Clusters are sorted in descending order, not in the cluster order named in the text

behavior related to children's sleep problems in 175 children and their parents.

#### Insomnia duration and severity

The mean age of insomnia onset of 3.1 years in our sample and a duration of around 58% of the children's lifetime is in line with the results of Paine & Gradisar [28] and Schlarb and colleagues [34]. With the extended lifetime duration

of insomnia or insomnia symptoms, our study confirms the sparse literature about insomnia chronicity [7, 10, 46] and adds to the growing evidence that insomnia is highly likely to become chronic if not appropriately treated.

Beside insomnia duration, parental perception of the severity of their child's sleep problem is important. Based on the model of parental attributional processes by Morrissey-Kane and Prinz [24], parental perception of the severity of a problem in child behavior can be seen as an indicator for parental help-seeking. Thus, families seek help if the child's behavior impairs the intra-familial interactions. The present data support this assumption, as insomnia severity but not duration was an indicator of the amount and type of help-seeking behavior of parents [25].

In contrast to several other studies, herein, no differences in insomnia symp-

toms between children with or without comorbid psychological disorders were found. Van Dyk and colleagues [49] found attention deficit hyperactivity disorder (ADHD) and affective problems in preschool children and conduct and anxiety symptoms in primary school children to be associated with insomnia severity. Another study [8] found the number and duration of sleep problems (from infancy to the age of 10 years) to be associated with mental health measures (e.g., anxiety). A possible reason for our results may be that the current study reports cross-sectional but no longitudinal data. Another possible reason may be the different "labels" for insomnia, ranging from number of insomnia symptoms [8] up to the full assessment of the ICSD insomnia criteria ([49], current study), and likewise for the "diagnosis" of a psychological disorder. The use of different measures for diagnosis renders a comparison between studies difficult and the authors recommend using the ICSD and DSM-5 criteria.

Taking these results together, the implementation of a stepped care model (SCM), as introduced by Baglioni and colleagues of the Steering Committee of the European Academy of Cognitive Behavioural Therapy for Insomnia [2] seems reasonable. The SCM is a process description of therapeutics based on cognitive behavioral therapy for insomnia (CBT-I) gradually increasing in clinical intensity and clinical complexity (for a detailed information, see [2]). However, to the best of the authors' knowledge, no studies have proved the SCM for insomnia in children. Beside this lack of research, for adolescents, one study examined internet-delivered CBT-I as an addition to the mental disorder treatment [51]. Promising preliminary results (significant reduction in insomnia symptoms and improvement in mental disorder measures) were found. Positive and stable effects of CBT-I on insomnia measures and comorbid psychological disorders were also found for adult samples (for a review, see [16]). Consequently, implementation of the SCM and related promotion of knowledge about insomnia should be forced and further investigated.

# Insomnia duration, insomnia severity, and help-seeking behavior

As in the few previous studies, most parents in the current study reported selfhelp efforts and two thirds reported seeking professional help, mainly consulting their pediatrician or a counselling center [6, 23, 25, 47, 48]. As the present results show, most parents have good self-help approaches to improve their child's insomnia symptoms. It seems that professional mentoring is necessary to successfully implement these approaches and to adapt them to each child. In the present study, neither self-help nor professional helpseeking behavior were associated with insomnia duration. However, and very importantly, insomnia severity was significantly associated with professional helpseeking behavior of parents, confirming the results of Chung, Kan, and Yeung [6] in an adolescent sample, and of Newton and colleagues [25] for a sample of toddlers and children. In our study, searching for help at their pediatrician was by far the most given answer for searching for professional help. This can be seen as evidence of an outstanding need for specialized sleep trainings (diagnostic and therapeutic) for pediatricians, but also for other professionals like psychotherapists, physicians, medical health staff, and other medical health providers, in order to reduce the impact of sleep problems on children and their families. It was further found that the number of self-help efforts and efforts at seeking professional help were significantly associated, indicating the persistence of parents in help-seeking, and also that those who do not seek help likewise persist in their behavior-a result that was also reported by Kanis and colleagues [18].

#### Limitations

One major limitation is the cross-sectional character of the study. Hence, no causality assertion can be made regarding possible causes and influencing factors of insomnia development, duration, and differences in severity over time. For causality statements, longitudinal studies are necessary. Another limitation is the use of subjective measurements and the retrospective collection of insomnia duration measures. However, sleep disorders such as insomnia were assessed and diagnosed based on a multi-methodological diagnostic procedure including a structured clinical interview. The current study used medical consultation results from the children's general practitioner or pediatrician to get information about other medical and psychological diseases. Given the lack of knowledge about sleep and sleep disorders among general practitioners and pediatricians [4, 26, 36], this source of information needs to be handled with care.

# Conclusion

To further elucidate the chronification of insomnia and its effects on children's psychological development, longitudinal studies (ideally a birth cohort) are necessary that include the parents' help-seeking behavior. The SCM could considerably reduce the psychological strain of insomnia patients and improve the availability of insomnia therapy for patients in need by providing a patient-appropriate insomnia treatment [2]. There are several highly effective shortterm treatments for insomnia available for all age groups from infancy to late adolescence [19, 32, 34, 35, 38], which also show that successfully treated sleep problems have a positive influence on general wellbeing.

By establishment in practice and by more research effort into a stepped care treatment (SCM) [2] for adequate and ageoriented help for insomnia disorder, the following aspects could be included: a) how to promote more awareness for healthy sleep during the whole lifespan for families and also for professionals, and b) how to establish a sleep help network based on profound research results.

Education of parents towards more knowledge about sleep behavior and disorders may be essential for families to be able to seek an early intervention.

#### Corresponding address

#### Dipl.-Psych. Maria Zschoche Faculty for Psychology and Sports Science, Bielefeld University POP 100131, Universitätsstraße 25, 33615 Bielefeld, Germany maria zschoche@uni-bielefeld.de

Acknowledgements. The authors thank I. Bihlmaier and B. Schwerdtle for their support in data collection at the outpatient clinics in Tübingen and Würzburg. Furthermore, we are grateful to all children and their parents for giving us the opportunity to help them manage their sleeping problems.

We acknowledge support for the article processing charge by the German Research Foundation (Deutsche Forschungsgemeinschaft).

**Funding.** This work was partially supported by the German Research Foundation (Deutsche Forschungsgemeinschaft) under grant SCHL 1909/4-1.

Author Contribution. M. Zschoche collected data, analyzed the data, and drafted the manuscript. A.A. Schlarb initiated and supervised the study, collected data, revised all versions of the manuscript, and helped with writing critical comments and hints. A. Kübler supervised the study, collected data, revised the manuscript, and helped with writing critical comments and hints. All authors read and approved the final manuscript.

**Funding.** Open Access funding enabled and organized by Projekt DEAL.

# Declarations

**Conflict of interest.** M. Zschoche, A. Kübler, and A.A. Schlarb declare that they have no competing interests.

The ethical standards of the Declaration of Helsinki were followed. The study was approved by the ethics committees of Bielefeld University, the University of Tübingen, and the University of Würzburg. All participating families were informed about goal, content, and procedure of the study, and gave informed consent to participate in the study.

Open Access. This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit http://creativecommons.org/licenses/by/4.0/.

## References

- Armstrong JM, Ruttle PL, Klein MH, Essex MJ, Benca RM (2014) Associations of child insomnia, sleep movement, and their persistence with mental health symptoms in childhood and adolescence. Sleep 37:901–909
- 2. Baglioni C, Espie CA, Altena E, Gavriloff D, Jernelöv S, Holzinger B, Schlarb A, Riemann D (2023) Cognitive behavioural therapy for insomnia: extending the

stepped care model. J Sleep Res. https://doi.org/ 10.1111/jsr.14016

- Baglioni C, Spiegelhalder K, Lombardo C, Riemann D (2010) Sleep and emotions: a focus on insomnia. Sleep Med Rev 14:227–238
- Blunden S, Lushingtion K, Lorenzen B, Ooi T, Fung F, Kennedy D (2004) Are sleep problems underrecognized in general practice? Arch Dis Child 89:708–712
- Buysse DJ, Germain A, Hall M, Monk TH, Nofzinger EA (2011) A neurobiological model of insomnia. Drug Discov Today Dis Models 8:129–137
- Chung KF, Kan KKK, Yeung WF (2014) Insomnia in adolescents: prevalence, help-seeking behaviors, and types of interventions. Child Adolesc Ment Health 19(1):57–63
- Combs D, Goodwin JL, Quan SF, Morgan WJ, Shetty S, Parthasarathy S (2016) Insomnia, healthrelated quality of life and health outcmes in children: a seven year longitudinal cohort. Sci Rep. https://doi.org/10.1038/srep27921
- Cook F, Conway LJ, Giallo R, Gartland D, Sciberras E, Brown S (2020) Infant sleep and child mental health: a longitudinal investigation. Arch Dis Child 105:655–660
- 9. El-Sheikh M, Bub KL, Kelly RJ, Buckhalt JA (2013) Children's sleep and adjustment: a residualized change analysis. Dev Psychol 49:1591–1601
- Fricke-Oerkermann L, Plück J, Schredl M, Heinz K, Mitschke A, Wiater A et al (2007) Prevalence and course of sleep problems in childhood. Sleep 30:1371–1377
- Gregory AM, Caspi A, Eley TC, Moffitt TE, O'Connor TG, Poulton R (2005) Prospective longitudinal associations between persistent sleep problems in childhood and anxiety and depression disorders in adulthood. J Abnorm Child Psychol 33:157–163
- 13. Gregory AM, O'Connor TG (2002) Sleep problems in childhood: a longitudinal study of developmental change and association with behavioral problems. J Am Acad Child Adolesc Psychiatry 41:964–971
- Gregory AM, Sadeh A (2012) Sleep, emotional and behavioral difficulties in children and adolescents. Sleep Med Rev 16:129–136
- 15. Harvey AG (2002) A cognitive model of insomnia. Behav Res Ther 40:869–893
- 16. Hertenstein E, Trinca E, Wunderlin M, Schneider CL, Züst MA, Fehér KD, Su T, Van Straten A (2022) Cognitive behavioral therapy for insomnia in patients with mental disorders and comorbid insomnia: a systematic review and meta-analysis. Sleep Med Rev 62:101597
- IBM Corporation (2016) IBM SPSS Statistics for Windows, Version 24.0. IBM Corporation, Armonk, NY
- Kanis JB, Schwerdtle B, Kübler A, Schlarb AA (2015) Parent perceptions and practices regarding sleep in children. Results of a demographic survey in a nonclinical sample. Somnologie 19:263–270
- Lollies F, Brandhorst I, Schlarb AA (2021) Effects of an online treatment for pediatric sleep problems on emotion dysregulation in young children. Adv Health Behav 4(1):150–163
- Lollies F, Schnatschmidt M, Schlarb AA, Genueit J (2022) Child sleep problems affect mothers and fathers differently: how infant and young child sleep affects paternal and maternal sleep quality,

emotion regulation, and sleep-related cognitions. Nat Sci Sleep 14:137–152

- Morin CM, Bélanger L, LeBlanc M, Ivers H, Savard J, Espie CA et al (2009) The natural history of insomnia. A population-based 3-year longitudinal study. Arch Intern Med 169:447–453
- Morin CM, Jarrin DC, Ivers H, Mérette C, LeBlanc M, Savard J (2020) Incidence, persistence, and remission rates of insomnia over 5 years. JAMA Netw Open 3(11):e2018782
- Morin CM, LeBlanc M, Daley M, Gregoire JP, Mérette C (2006) Epidemiology of insomnia: prevalence, self-help treatments, consultations, and determinants of help-seeking behaviors. Sleep Med 7:123–130
- 24. Morrissey-Kane E, Prinz RJ (1999) Engagement in child and adolescent treatment: the role of parental cognitions and attributions. Clin Child Fam Psychol Rev 3:183–198
- Newton AT, Corkum PV, Blunden S, Reid GJ (2021) Influences on help-seeking decisions for behavioral child sleep problems: why parents do and do not seek help. Clin Child Psychol Psychiatry 26(1):207–221
- Owens JA (2001) The practice of pediatric sleep medicine: results of a community survey. Pediatrics 108:e51
- 27. Paavonen EJ, Aronen ET, Moilanen I, Piha J, Räsänen E, Tamminen T et al (2000) Sleep problems of school-aged children: a complementary view. Acta Paediatr 89:223–228
- Paine S, Gradisar M (2011) A randomised controlled trail of cognitive-behavioral therapy for behavioral insomnia of childhood in school-aged children. Behav Res Therapy 49:379–388
- 29. Pillai V, Roth T, Drake CL (2015) The nature of stable insomnia phenotypes. Sleep 38:127–138
- Roberts RE, Roberts CR, Doung HT (2008) Chronic insomnia and its negative consequences for health and functioning in adolescents: a 12-month prospective study. J Adolesc Health 42:294–302
- Roeser K, Eichholz R, Schwerdtle B, Schlarb AA, Kübler A (2012) Relationship of sleep quality and health-related quality of life in adolescents according to self- and proxy ratings: a questionnaire survey. Front Psychiatry 3:76
- 32. Roeser K, Schwerdtle B, Kübler A, Schlarb AA (2016) Further evidence for the Just program as treatment for insomnia in adolescents: results from a 1-year follow-up study. J Clin Sleep Med 12:257–262
- Sadeh A, Mindell J, Rivera L (2011) "My child has a sleep problem": a cross-cultural comparison of parental definitions. Sleep Med 12:478–482
- 34. Schlarb AA, Bihlmaier I, Velten-Schurian K, Poets CF, Hautzinger M (2016) Short- and long-term effects of CBT-lin groups for school-age children suffering from chronic insomnia: the KiSS-Program. Behav Sleep Med. https://doi.org/10.1080/15402002. 2016.1228642
- Schlarb AA, Brandhorst I, Peters E, Hautzinger M (2018) Telephone support in an internet-based treatment for sleep problems in early childhood. JPsychiatry 21:435
- Schlarb AA, Gulewitsch MD, Hautzinger M (2010) Insomnien in der p\u00e4diatrischen Praxis. H\u00e4ufgkeiten, famili\u00e4re Belastung und Behandlungsempfehlungen. Somnologie 14:129–134
- Schreck KA, Richdale AL (2011) Knowledge of childhood sleep: a possible variable in under or misdiagnosis of childhood sleep problems. J Sleep Res 20:589–597
- 38. Schwerdtle B, Kübler A, Schlarb AA (2020) External validity of the multicomponent group treatment

KiSS for school-aged children with insomnia. Behav Sleep Med 8(2):147–162

- Shanahan L, Copeland WE, Angold A, Bondy CL, Costello EJ (2014) Sleep problems predict and are predicted by generalized anxiety/depression and oppositional defiant disorder. J Am Acad Child Adolesc Psychiatry 53:550–558
- Shochat T, Cohen-Zion M, Tzischinsky O (2014) Functional consequences of inadequate sleep in adolescents: a systematic review. Sleep Med Rev 18:75–87
- Simola P, Liukkonen K, Pitkäranta A, Porinen T, Aronen ET (2012) Psychosocial and somatic outcomes of sleep problems in children: a 4-year follow-up study. Child Care Health Dev 40:60–67
- 42. Sivertsen B, Harvey AG, Pallesen S, Hysing M (2017) Trajectories of sleep problems from childhood to adolescence: a population-based longitudinal study from Norway. J Sleep Res 26:55–63
- Sivertsen B, Harvey AG, Reichborn-Kjennerud T, Ystorm E, Hysing M (2021) Sleep problems and depressive symptoms in toddlers and 8-yearold children: a longitudinal study. J Sleep Res 30:e13150
- Smedje H, Broman JE, Hetta J (1999) Parent's reports of disturbed sleep in 5–7-year-old Swedish children. Acta Paediatrica 88:858–865
- Soffer-Dudek N, Sadeh A, Dahl RE, Rosenblatt-Stein S (2011) Poor sleep quality predicts deficient emotion information processing over time in early adolescence. Sleep 34:1499–1508
- 46. Steinsbekk S, Wichstr
  Øm L (2015) Stability of sleep disorders from preschool to first grade and their bidirectional relationship with psychiatric symptoms. J Dev Behav Pediatr 36(4):243–251
- 47. Stinson K, Tang NKY, Harvey AG (2006) Barriers to treatment seeking in primary insomnia in the United Kingdom: a cross-sectional perspective. Sleep 29:1643–1646
- Thunström M (1999) Severe sleep problems among infants in a normal population in Sweden: prevalence, severity and correlates. Acta Paediatrica 88:1356–1363
- 49. Van Dyk TR, Becker SP, Byars KC (2019) Mental health diagnoses and symptoms in preschool and school age youth presenting to insomnia evaluation: prevalence and assiciations with sleep disruption. Behav Sleep Med 17(6):790–803
- Van Veen MM, Lancel M, Beijer E, Remmelzwaal S, Rutters F (2021) The association of sleep quality and aggression: a systematic review and metaanalysis of observational studies. Sleep Med Rev 59:101500
- 51. Zetterqvist V, Lundén C, Herrmann A, Hasbar L, Khalifa N, Lekander M, Ålsund L, Jernelöv S (2021) Internet-delivered cognitive behaviour therapy for insomnia comorbid to psychiatric conditions: a non-randomized trial. Clin Child Psychol Psychiatry 26(2):475–489

**Publisher's Note.** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

#### Zusammenfassung

# Schlafbezogenes Hilfesuchverhalten von Eltern mit Kindern mit Insomnie – was zählt!

**Hintergrund:** Insomnie tritt bei Kindern häufig auf und verursacht viele psychische Probleme. Trotzdem ist nur wenig über Einflussfaktoren auf das Hilfesuchverhalten von Eltern mit Kindern mit Insomnie bekannt.

**Fragestellung:** Studienziel war die Evaluation von Dauer und Schwere der Insomnieerkrankung bei Kindern und der Einfluss von komorbiden psychischen Erkrankungen auf Insomniedauer und -schwere. Zudem wurde der Einfluss von Dauer und Schwere der Insomnie bei Kindern auf das elterliche schlafbezogene Hilfesuchverhalten für ihre Kinder untersucht.

**Methoden:** Patienten aus 3 deutschen Schlafambulanzen wurden untersucht. Ein selbst konzipiertes Schlafinterview gemäß den ICSD-3-Kriterien (International Classification of Sleep Disorders) wurde für jeden Patienten durchgeführt. Zusätzlich wurden Informationen zu Schwere und Dauer der Insomnie, die Anzahl der schlafbezogenen Hilfesuchanstrengungen und Angaben zu psychischen Erkrankungen aus dem Anmeldeformular extrahiert.

**Ergebnisse:** In die Studie wurden 175 Kinder (4–11 Jahre) mit einer durchschnittlichen Insomniedauer von 54 Monaten eingeschlossen. Die Insomnieschwere wurde als hoch eingeschätzt, ohne signifikante Unterschiede zwischen Kindern mit und ohne komorbide psychische Erkrankung. Die meisten Eltern (88,6 %) versuchten, Hilfe für die Schlafprobleme ihres Kindes zu erhalten, bevor sie sich in einer der Schlafambulanzen der Autoren meldeten. Kinderärzt\*innen wurden am häufigsten als professionelle Anlaufstelle bezüglich kindlicher Schlafprobleme zur Rate gezogen. Die Einschätzung der Insomnieschwere war signifikant mit der Anzahl der Versuche, professionelle schlafbezogene Hilfe zu erhalten, korreliert, jedoch nicht der Anzahl der Selbsthilfeversuche. Die Insomniedauer war mit keinem der Hilfesuchverhalten korreliert.

Schlussfolgerung: Insomnieschwere, aber nicht Insomniedauer steht mit dem schlafbezogenen Hilfesuchverhalten von Eltern in Verbindung. In der vorliegenden Stichprobe zeigte sich, dass sich die meisten Eltern, neben eigenen Änderungsversuchen, beim Kinderarzt bzw. bei der Kinderärztin Hilfe für die Schlafprobleme der Kinder suchten. Des Weiteren zeigten sich keine Unterschiede zwischen Kindern mit und ohne komorbide psychische Erkrankung, weder bei Insomniedauer noch bei der Schwere der Insomnie. Es erscheint notwendig, für die weitreichenden Konsequenzen von Insomnien bei Kindern zu sensibilisieren und somit zu einem früheren Hilfesuchverhalten der Eltern beizutragen.

#### Schlüsselwörter

 $Mentale\ Gesundheit \cdot Ein-\ und\ Durchschlafstörungen \cdot Chronische\ Erkrankung \cdot Insomnie \cdot Kindliche\ Gesundheit$