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The Role Of Family Mental Health Nurse In Children Sleep And Its Related Problems Narrative Review Article

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Abstract

Sleep holds significant importance for maintaining health and aiding in illness recovery. Its deprivation impacts all human organ systems, from cognitive function, social interaction, and work capacity, to cellular regeneration and immune function. Therefore, sleep plays a crucial role in our body and maintaining health and well-being. Given its importance and close relationship with the neurodevelopment and growth of children and adolescents, this topic is highly significant in Paediatric and Adolescent Health consultations. The Family Mental Health care provider, due to their proximity and understanding of the individual within their family, has the prerogative to contribute to family literacy, empowering them, and significantly enhancing the quality of life and overall health. Sleep problems are prevalent among children and adolescents, yet they often go unrecognized and untreated in clinical settings. This underscores the critical role that family mental health nurses can play in addressing sleep-related issues in the paediatric population. Children with psychiatric disorders are particularly vulnerable to sleep disturbances, with as many as 80% reporting sleep disruption at some point during the course of their illness.

Keywords: Family Mental Health, Mental Health Nurse, Paediatric Population, Sleep recommendations, primary healthcare, sleep disorders, sleep assessment, childhood sleep.

INTRODUCTION

Sleep (derived from the Latin word somnus) is a physiological state characterized by sensory insensitivity and the need for rest [1]. It is characterized by periodicity, with temporary suspension of perceptual-sensory and voluntary motor activity [2]. It presents various degrees of depth, in which there is a greater or lesser capacity to provoke awakening, reflected in the alteration of brain electrical activity, which can be more or less intense, and also by mental activity, namely dreaming [3]. There are five distinct stages of sleep that can be measured by polysomnography: the REM (rapid eye movement) stage and four NREM (non-rapid eye movement) sleep

stages [3]. It is during REM sleep that most dreams occur, representing about 80% of sleep in newborns and about 20% in adults [3]. The most accepted theory regarding the function of sleep explains that it allows changes in brain structure and organization, referred to as "brain plasticity" [4]

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METHODS AND METHODOLOGY

Search in scientific databases: British Medical Journal, Evidence-Based Medicine Online, National Guideline Clearinghouse, National Library of Guidelines, The Cochrane Library, DARE, MEDLINE/PubMed, and Index of Portuguese Medical Journals, for articles from 2010 to September 2024, using the keywords infant sleep, sleep assessment, sleep disorders, primary health care, sleep disorders, sleep strategies for children, family doctor. Articles were selected based on the relevance of their abstracts to the aim of this study and were available in English, Portuguese, and Spanish.

REVIEW

Sleep In Early Childhood And Its Importance

Despite significant advances in the field of neuroscience, the functions of sleep are not yet fully understood [5]. The currently most accepted theory is that sleep is related to processes of brain plasticity, involved in the maturation of the nervous system, memory consolidation, and learning [6-7]. Sleep habits are influenced by various factors, including biological, psychological, environmental, familial, sociocultural, and developmental stages [6]. On the other hand, sleep influences the regulation of homeostatic and hormonal systems underlying somatic growth, maturation, and bioenergetics [6]. Thus, it is evident that sleep represents a crucial daily activity for growth and development, with even greater importance in younger individuals who demonstrate a greater need for sleep time for their proper development [5,6,7]. Therefore, when evaluating a child, it becomes crucial that the approach is holistic, taking into account their family and social context, daily activity, including dietary habits and regular physical activity, along with the assessment of the quality and quantity of sleep [7].

Daily Reference Values For Sleep Duration

The duration of sleep is an important factor that will also influence its quality. Daily sleep time encompasses nighttime sleep and naps that occur during the day. Nap time decreases as the child grows into adulthood. The reference values for total sleep time and naps are represented in the table below (Table 1), noting that they are average values, with interpersonal variability [8].

Table 1 Sleep Hours recommended according to their age wise

Age	Total Sleep Hours recommended
< 3 Months	14-17 Hours
4-11 months	12-15 Hours
12-24 Month	11-14 Hours
3-8 Years	10-13 Hours
6-13 years	9-11 Hours
14-17 Years	8-10 Hours
>18 Years	7-9 Hours

Studies On Sleep

Most existing studies focus on inadequate sleep problems, allowing to infer about its functions [7]. Aspects are subject to subjective evaluation through questionnaires, as well as more objective methods (e.g., polysomnographic study and actigraphy) [7].

The majority of experimental studies on the effects of sleep deprivation have been conducted on animal models and adult humans, with conclusions that are difficult to extrapolate to childhood ages, as children and adolescents present various peculiarities: they are still developing, the structure and duration of sleep are not the same as in adults, and the manifestation of sleep deprivation is also different [5-7].

Given the difficulty of conducting studies at early ages, primarily due to ethical issues, most studies in this age group are observational, making it often difficult to establish causal relationships and eliminate possible bias [7]. Additionally, the interpretation of results obtained in sleep studies and their consequences are challenging to objectify due to the multiplicity of systems affected [6-7].

Consequences Of Sleep Deprivation

Inadequate sleep, whether in quantity (duration) or quality (neurophysiological structure), or both, results in deleterious effects at various levels [6,9-18]

1. **Cognitive:** alteration of cognitive functions such as attention and memory; slowing in stimulus processing; alteration of higher cognitive functions such as abstraction, creativity, and problem-solving ability. Emotional and mood: feelings of fatigue, lack of Vigor, irritability, behavioral apathy, among others.
2. **Increased risk of accidents:** accidents are a significant cause of morbidity and mortality in pediatric ages. Several studies have found a relationship between accidents and sleep deprivation in pediatric age, concluding that there is an association between sleep deprivation and increased risk for accidents.
3. **Daytime sleepiness:** Mimicking symptoms of ADHD (attention deficit hyperactivity disorder).
4. **Metabolic changes** (e.g., obesity): although the mechanism is not yet fully understood, there is an association between sleep deprivation and obesity, requiring further studies in this area for better understanding. Influence the normal growth and development of children.
5. **Family dynamics:** negative impact on family routine, with disruption in the sleep of other family members, thus affecting the physical and psychological well-being of the entire family. Due to the

impact that this essential activity for human life has on the well-being of children and their caregivers, it is of utmost importance to understand sleep habits in this specific population, as well as to identify any potential problems [6,7,12,17,18].

Most Common Sleep Problems

According to the Children and Sleep National Sleep Foundation, up to 30% of children aged 2 to 5 years and 15% of school-aged children have trouble falling asleep or sleeping through the night regularly. Less than one-third of teenagers get enough sleep, according to a survey by the CDC (Center for Disease Control and Prevention) [19].

Children rarely complain about these problems/disruptions, which are commonly reported by parents/caregivers [6]. As mentioned earlier, children's sleep problems are habits, behaviors, and/or sleep patterns that are undesirable and will affect the entire family dynamic [6,20].

According to the Clinical Practice Guide on Sleep Disorders in Childhood and Adolescence in Primary Care of the Spanish National Health Service, in order to facilitate management in primary healthcare, sleep disorders in these age groups can be grouped into three categories [20] :

1. **Difficulty falling asleep:** insomnia due to inadequate sleep hygiene, behavioral insomnia, restless legs syndrome, delayed sleep phase syndrome.
2. **Abnormal events during the night**: obstructive sleep apnea/hypopnea syndrome (OSAHS), sleepwalking, night terrors, confusional arousals, nightmares, sleep-related rhythmic movement disorders.
3. **Daytime sleepiness:** chronic sleep deprivation of multifactorial origin, narcolepsy

Table 2 Most common sleep problem, according to the classification of the ISCD-3

Major Problems	Most common causes
Insomnias	Chronic insomnia Inadequate sleep hygiene
Parasomnias	NREM-related parasomnias (ex: confusional arousals; sleep terrors; sleepwalking) REM-related parasomnias (ex: nightmare disorder) Other parasomnias (ex: sleep enuresis) Isolated symptoms (ex: sleep talking)
Circadian rhythm sleep disorders	Delayed sleep phase type Irregular sleep-wake type
Sleep-related breathing disorders	Obstructive sleep apnea, pediatric Primary sleep apnea of infancy Apnea of prematurity
Sleep-related movement disorders	Restless legs syndrome
Hypersomnias of central origin	

Other sleep disorders	

Assessment Tool of Children's Sleep

Children's sleep can be studied in a subjective or objective manner [7,20]. Anamnesis is extremely important as it allows the gathering of relevant data that provides the healthcare professional with a comprehensive and integrative view of the child and their family [20]. It should be as complete as possible and encompass the current history, personal and family backgrounds, habits, routines, and socio-educational path [20].

Subjective study is based on questionnaires, usually retrospective, conducted by parents or the children themselves [20-22]. (Table 3) presents some of the possible questionnaires for subjective evaluation [20-22]. In the family mental health nurse clinical practice, the BEARS questionnaire can be used as a screening tool in children over 2 years of age, in order to identify sleep problems early during child health surveillance consultations [22]. It is also possible to assess sleep through sleep diaries [20].

This is another tool that allows awareness of the number of hours of sleep and reflection on them for positive or negative consequences during the day (for example, daytime sleepiness as a negative consequence) [20]. This type of assessment generally leads to greater adherence to intervention [20]. Objectively, there are two ways to study sleep: polysomnography and actigraphy [20-22].

Table 3 Assessment Tool and Questionnaires for the sleep evaluation

Questionnaires/Scale for Assessment
Brief Infant Sleep Questionnaire (BISQ)
Children's Sleep Habits Questionnaire – Portuguese version (CSHQ-PT)
Sleep Self Report (Children)
Modified Pediatric Epworth Sleepiness Scale
BEARS Questionnaire (Bedtime, Excessive daytime sleepiness, Awakening during the night, Regularity and duration of sleep, Snoring)
Sleep Disturbance Scale for Children (SDSC)
Sleep disorders inventory for students
Pediatric sleep questionnaire
Van dream anxiety scale
Nightmare Effect survey
Nightmare distress questionnaire

Strategies That Can Help Solve Some Issues

The type of strategy/intervention will depend on the underlying problem that is diagnosed, the child's age, and the reality of each family [20]. It is extremely important that the chosen strategy is in harmony with the family and that they are actively involved in the decision-making process, with each intervention being adjusted to each context to maximize its success According to age, it is necessary to ensure that sleep time and quality are respected [22].

As described above, sleep time depends on the age group, and it is important to ensure good development for the child [22]. During the first year of life, the strategy sometimes involves managing parents' expectations, reassuring, and informing them [23,24].

At 1-2 months of age, circadian activity begins to develop, and by 3-4 months babies already have stable melatonin production [23]. Between 6-9 months, wakefulness increases, naps are well established, and by 12 months, 70 to 80% of babies mainly sleep at night [23]. Therefore, in the first six months of life, it is normal for night awakenings to occur, with a distribution that follows the sleep cycle (which lasts 90-120 minutes) and occurs more commonly in the REM stage [23]. In these cases, it is common for the child to return to sleep spontaneously [23]. It is important to raise awareness among parents about this normal functioning of babies, encourage the adoption of pre-sleep routines and rituals that work for the family to ensure good rest for everyone [20,22].

It is also important to analyze the baby's sleeping environment, which should be in a calm and clean environment, with a temperature between 20 and 22°C [20,22]. The mattress on which the baby sleeps should be firm and not inclined, and the bedding should not exceed the nipple line, ensuring it does not overheat the baby [20,22]. For children, it is also necessary to ensure that the room is suitable, pleasant, without technology, and not associated with anything negative such as "punishment" [20].

Table 4 presents a summary of possible treatments/strategies, excluding pharmacological treatments, according to the type of pathology [21,23]. Behavioral interventions for pediatric sleep problems (such as parent education, and positive bedtime routines), especially in young children, have shown to produce clinically significant improvements [21]. This is particularly important given the relative lack of data on the use of pharmacological interventions for sleep difficulties in pediatric age, which will not be addressed in this article.

Table 4 Treatments, Possibles Strategies according to their pathological sleeping problems (exclusion of Pharmacological Treatment)

Sleeping Disorder	Examples	Non-Pharmacological Treatment
Insomnia	Inadequate sleep hygiene, stimulating activities, consumption of stimulants, environment, disorganized sleep practices, psychophysiological insomnia, behavioral insomnia of childhood Insomnia symptoms for more than 3 months with associations that inhibit sleep (common since school age)	Sleep hygiene, regular schedules, routines, physical activity, reduction of screen time, reduced consumption of stimulants, adequate environment to sleep, cognitive behavioral therapy

NREM parasomnias	Confusional arousals; sleep terrors; sleepwalking	Confusional arousals; sleep terrors; sleepwalking
REM parasomnias	Nightmare disorder	Reassuring measures; it may be useful to use a night light or a comfort object. Avoid exposure to anxiogenic stimuli, especially before bedtime. During the day, talk about the nightmare in order to "comfort" the child
Sleep-related breathing disorders	Obstructive sleep apnea, pediatric Primary sleep apnea of infancy Apnea of prematurity	Treatment will depend on the cause. If the cause is overweight, the treatment will involve changes in diet and physical exercise. If the cause is a structural change or tonsil/adenoid hypertrophy, treatment may require surgical correction.
Circadian rhythm sleep disorders	Delayed sleep phase type Irregular sleep-wake type	Intervention may include psychoeducation and cognitive behavioral techniques. In some cases, the intervention of a psychiatrist may be necessary.
Hypersomnias of central origin	Narcolepsy (type 1 and 2), idiopathic hypersomnia, secondary hypersomnia	Scheduled naps, pharmacological therapy, investigation to exclude an organic cause
Sleep movement disorders	Restless legs syndrome, bruxism, benign sleep myoclonus, rhythmic movements when falling asleep	Sleep hygiene, assessing iron deficiency, behavioral therapy, accident prevention, reassuring parents
Other parasomnias	Sleep enuresis	Water restriction, try to empty the bladder before bed, child empowerment, involve the child in bed hygiene, don't judge. After the age of 7, investigation is warranted to exclude secondary cause enuresis

The Family Mental Health Nurse Role and Proximity To Families

One of the concerns of families in the early stages of a baby's life is sleep, which is why it is a frequently addressed topic in child health consultations [3,6]. Parameters such as the number of hours the baby sleeps; how he fall asleep; sleep cycles; characteristics of the crib, if the baby sleeps in their own crib; room temperature and safety issues during sleep to reduce the risk of sudden infant death syndrome, are discussed [3,6].

Parents often seek clarification from their family mental health nurseto ensure the best approach during this period of their lives and their children's lives [3,6]. Throughout life, we should be concerned with the number of hours of sleep as well as its quality and its impact on our daily lives [3,6,7].

It is important to understand how the family relates to sleep, what rituals are associated with bedtime, and to explain that the number of hours of sleep and sleep cycles vary with age, with the need for hours of sleep varying over the course of life each person [3,6,7].

According to the portuguese National Program for Child and Adolescent Health, issued by the Direção Geral da Saúde, the topic "sleep" should be addressed in all consultations [24]. Sleep disorders in pediatric age are common and, unlike in adulthood, they will affect not only the child's development but also the dynamics of the entire family [3,6,7]. Therefore, it is important for the family mental health nurseto have the appropriate tools to address this issue and, if necessary, refer and/or treat.

Family Mental Health Nurse can thus be a key factor in improving the health quality of families and caregivers, as they are generally the first medical contact within the healthcare system [3,6,7,24,30]. By developing a person centered approach, oriented towards the individual and their family, they can contribute to improving the quality of life for all family members [3,6,7,24,30]. It is important to note that by providing longitudinal continuous care, they promote the child's follow-up through various stages of life, always keeping abreast of changes or problems that may arise [3,6,7,24,30].

It is also important to emphasize that the family mental health nurse adopts a holistic approach, having the ability to use a biopsychosocial model, taking into account cultural and existential dimensions [3,6,7,24,30].

DISCUSSION AND CONCLUSIONS

Sleep plays a fundamental role in various areas: neurodevelopment, behavior, growth, and performance. Therefore, it is imperative that the family physicians are sensitive to this issue as they are in a privileged position to assist families given their proximity and knowledge of their context. The Family Mental Health care provider, due to their proximity and understanding of the individual within their family, has the prerogative to contribute to family literacy, empowering them, and significantly enhancing the quality of life and overall health. Sleep problems are prevalent among children and adolescents, yet they often go unrecognized and untreated in clinical settings. This underscores the critical role that family mental health nurses can play in addressing sleep-related issues in the paediatric population. Children with psychiatric disorders are particularly vulnerable to sleep disturbances, with as many as 80% reporting sleep disruption at some point during the course of their illness. In General Practice and Family Mental Health Nurse, it is crucial to investigate the sleep routines and rituals of children to ensure their adequate rest. Therefore, it is essential to invest in health literacy, inform parents, and encourage children to adopt good health practices, thus making

sleep one of the central topics in child health consultations. It is also important to emphasize that the family mental health nurse adopts a holistic approach, having the ability to use a biopsychosocial model, taking into account cultural and existential dimensions

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