

An Exploration of the Impact of Parenting on the Sleep Patterns of Children with ADHD

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Abstract:-

Background: The type of parenting given to a child with ADHD will affect the child's sleep patterns in their daily life. This study will explore the impact of parenting on the sleep patterns of children with ADHD.

Objective: This study aimed to explore the influence of parenting on the sleep patterns of ADHD children.

Method: This study was conducted using a phenomenology approach. Data were collected using semi-structured interviews with eight participants of primary caregivers of children with ADHD. Qualitative methods were applied using in-depth interviews. Interview data were analyzed using thematic analysis.

Results: This study resulted in 3 themes based on parenting patterns that affect sleep patterns that have been identified in this study, namely: Caregiver parenting, type of parenting, and sleep pattern problems in ADHD children.

Conclusion: Occupational therapists should pay attention to children's sleep patterns based on caregivers' parenting patterns to find the cause of sleep problems in children with ADHD to improve children's sleep quality and general well-being.

Keywords:- Sleep Pattern; Parenting Style; Caregiver; Children with ADHD

I. INTRODUCTION

Parenting affects the development of sleep problems in children with ADHD (Noble, 2012). The role of caregivers in the development of children's sleep ability can be seen in the sleep problems experienced by children (Tikotzky, 2017). Because in ADHD children, problems in sleep quality come from behavior, parenting style, bedtime routines and habits, child-caregiver interactions, and the environment (Bathory, 2017; Martin, 2019; Tikotzky, 2017). According to Wilson (2013), sleep problems that arise due to parenting are sleep pattern problems caused by parental behaviors and nighttime activities. In the sleep environment, bedtime habits such as limit-setting and co-sleeping can affect sleep hours and sleep patterns (Bordeleau et al., 2012; Hale et al., 2018).

Caregivers generally do not realize the impact of parenting on the development of their children's sleep problems (Bussing et al., 2003; Sung et al., 2008; Weckerly

et al., 2005). Caregivers should be able to recognize the conditions that cause sleep problems in children before implementing parenting (Aafjes, 2021) because sleep problems that are not addressed adequately by caregivers can reduce sleep quality and quantity (Noble, 2012; Raphael-Leff, 2018). According to Dorris et al. (2008) & Espie (2002), the application of parenting, primarily before bedtime, was found to help reduce sleep problems.

In a Study conducted by Sciberras (2017), bedtime habits, especially sleep hygiene, are related to the duration and onset of sleep in the same direction as decreased daytime sleepiness. At the same time, total care from caregivers is linked to reduced sleep resistance (Sciberras, 2017). Warmth and consistency during caregiving can also be associated with decreased sleep anxiety and parasomnia (Sciberras, 2017), which is related to a study done by Nobel (2012), which focuses on aspects of parenting that affect the development of sleep problems in children with ADHD. Nobel (2012) also found that increased conflict between caregivers and children before bedtime was found to increase due to low sleep routines. Therefore, implementing habits based on parenting can predict children's future sleep problems (Allen et al., 2016; Combs-Orme et al., 2011).

Specifically, permissive parenting is associated with prolonged sleep latency (Shetty, 2022; Tu, 2018). Authoritarian parenting makes children uncomfortable because caregivers do not facilitate distractions (Noble, 2012). The quality of sleep of children with authoritative parenting is not associated with anxiety (Cavallina, 2015; Tyler, 2019). In contrast, authoritarian parenting was found to cause pre-sleep anxiety and problems related to sleep efficiency (King, 2016; Tyler, 2019). While internalizing and externalizing behaviors are associated with the development of sleep problems in neglectful parenting (McPhie et al., 2014; Turner et al., 2020). Neglectful parenting during sleep is uncomfortable and tends to wake up quickly (King et al., 2016). In addition, King et al. (2016) also found that bad sleeping habits will continue to be repeated in permissive parenting.

This study explores the experience of applying caregiver parenting to sleep patterns in ADHD children. Research related to parenting patterns that impact the sleep patterns of ADHD children has been carried out in many

previous studies. However, based on the literature review, no research examines the impact of the four types of parenting simultaneously on sleep patterns. So there is a need for a study that can compare the problems of children's sleep patterns with ADHD based on the four types of parenting in Indonesia.

II. METHOD

➤ *Participants*

The participants in this study totaled eight primary caregivers of children consisting of mothers, grandmothers, and aunts. All participants were primary caregivers with an intensity of 10-12 hours daily. Participants' occupations were homemakers, office workers, and household assistants.

Primary caregivers were recruited voluntarily using purposive sampling. Participants were selected based on the following inclusion criteria: (a) the caregiver is the primary caregiver who cares for ADHD children aged 5-12 years, (b) the caregiver can speak Indonesian, (c) the caregiver comes

from Surakarta and lives with the child, (d) the caregiver is willing to be a respondent.

The research was conducted at Yayasan Pembinaan Anak Cacat (YPAC) Surakarta. This study's initial data collection stage was distributing invitations to potential respondents. Invitations for research participants were sent to primary caregivers through the YPAC Surakarta clinic. The researcher informed the participants that participation was voluntary. Researchers received informed consent from participants who were willing to become research respondents. The following process was an initial screening of the general condition of the family and child before collecting data on sleep patterns. Data was collected using the semi-structured interview research method 2-3 times. The interview protocol conducted the Semi-structured interviews to maintain the accuracy of the data to be collected. Researchers documented the results of the interview using a voice recorder. Research permission was obtained from the YPAC Foundation Surakarta Ethics Committee.

Table 1. Caregiver Characteristics

Participants	Gender	Age, yr	Caregiver	Diagnosis	Jobs	Education
P1	Female	58	Aunt	ADHD	Homemaker	High School
P2	Female	59	Aunt	ADHD	Office workers	High School
P3	Female	40	Mother	ADHD	Homemaker	Bachelor's Degree
P4	Female	32	Mother	ADHD	Homemaker	associate degree
P5	Female	43	Mother	ADHD	Homemaker	associate degree
P6	Female	39	Mother	ADHD	Homemaker	associate degree
P7	Female	65	Grandma	ADHD	Homemaker	High School
P8	Female	67	Grandma	ADHD	Homemaker	High School

➤ *Data Collection*

The data collection technique used in this research is *in-depth* interviews so that participants' experiences can be told naturally. Therefore, the researcher chose the *semi-structured* interview form. *Semi-structured* interviews were chosen because exploratory studies require themes to emerge freely and naturally (Blandford, 2013; Roulston & Choi, 2018). Interviews were conducted once with a total duration of 40-60 minutes per participant. Five main questions related to the application of parenting described the type of caregiver's parenting and the problems caused by the caregiver's parenting.

To increase data saturation, researchers conducted additional interviews related to parenting patterns applied by caregivers. To test the credibility of the interview data, the researcher conducted triangulation. The triangulation used in this study is theoretical triangulation and source triangulation. The theoretical triangulation is done to double-check the data obtained and compare it with several theories (Tabatabaee, 2013), While source triangulation is done by checking the code and reconfirming the data on the sample at different times (Tabatabaee, 2013).

➤ *Data Analysis*

The approach used is Thematic Analysis. Lochmiller (2017), Braun (2013; 2019), & Liamputtong (2019) state that the sequence of steps to analyze qualitative data with thematic analysis is as follows: First round pass (Familiarizing the Data); Entering codes in subcategories and categories or themes (Generating Initial codes, Searching for Themes); Re-Examine Code; Review Themes and Define Themes; Transforming code categories into narrative text.

The credibility and objectivity tests are two types of data analysis used in this research. Researchers conducted triangulation and member checking in the credibility test and used audit trail and reflexivity in the objectivity test. Source triangulation is comparing and cross-checking the degree of data confidence through different times and tools (Speziale, 2011; Tabatabaee, 2013). Theoretical triangulation tests data credibility by comparing the data obtained with previous theories (Tabatabaee, 2013). The participants' interviews were recorded using a voice recorder to maintain the accuracy of the data. After all themes and sub-themes were confirmed through member checking and reflexivity on each participant. Based on the study's results, the most changed sleep patterns were found in authoritarian parenting. The data is then matched with the theory that has been found previously.

III. RESULT

This research resulted in 3 themes and eight sub-themes. The first theme is Caregiver Parenting with sub-themes of the Application of Caregiver Parenting and the Application of Sleep Pattern Based on Parenting. The second theme is Types of Parenting with sub-themes of Authoritarian Parenting, authoritative Parenting, Permissive Parenting, and Neglectful Parenting. The third theme is Sleep Pattern Problems in ADHD Children with sub-themes Sleep Pattern Problems and Causes of Sleep Pattern Problems.

Table 2: Themes and Subthemes

NO	THEME	SUBTEMA
1	Caregivers' Parenting	Implementation of Caregivers' Parenting
		Implementation of Sleep Patterns Based on Parenting
2	Type of Parenting	Authoritarian Parenting
		Authoritative Parenting
		Permissive Parenting
		Neglectful Parenting
3	Sleep Pattern Problems in ADHD Children	Sleep Pattern Problems
		Causes of Sleep Pattern Problems

➤ *Caregivers' Parenting*

• *Implementation of Caregivers' Parenting*

Based on this study, caregiver parenting is seen qualitatively by looking at the fulfilled aspects. In general, parenting provided directly has different ways of application depending on the caregiver's character, the provision of rules, and the consistency of the parenting application. The diverse caregiver characters recognized by caregivers can lead to various parenting outcomes. For example, harsh feelings can reduce oppositional behavior in children. Meanwhile, caregivers must have a solid character to control behavior psychologically but still follow the child. Finally, gentle and heartless caregiver characters are recognized to make children's behavior change.

The provision of rules is generally related to the disciplinary and control aspects of parenting. The ability to be consistent and disciplined with regulations is related to authoritative and authoritarian parenting, but negotiation is more prevalent in authoritative parenting. On the other hand, low consistency in rules is related to permissive parenting. Caregivers with permissive parenting slowly tried to be consistent with the regulations compared to caregivers with neglectful parenting.

Two types of outcomes of the influence of caregiving on sleep patterns were found. First, caregivers with consistent implementation recognized the impact of implementing routines on sleep patterns. Although some caregivers admit they have not seen direct results, there is still hope from the habituation of sleep patterns. Meanwhile, caregivers who still doubt the influence of parenting on sleep patterns recognize the obstacles in the child's condition. Participants recognized the possibility that the impact of parenting could be seen if

the child's situation and environment also changed. As one participant (R4) stated as follows: *"...depends on the child again. If the sleeping time is right, the child is not too fussy..." (R4)*

• *Implementation of Sleep Patterns Based on Parenting*

Implementing a fixed sleeping pattern is generally already present in children with authoritative parenting. Consistent sleep habituation in children is accompanied by negotiation skills in children's sleep patterns. Meanwhile, the application of sleeping patterns that are still changing is related to the child's condition and family conditions. Caregivers recognize the need of children who cannot understand the sleep patterns applied to be the main obstacle.

➤ *Type of Parenting*

The grouping of parenting types is based on Baumrind's parenting pattern (Baumrind, 1991; 1997; 2013; 2019) and supporting parenting theories. The results of the interviews were deduced using the *reflexivity* method so that they could emerge themes freely but still follow the guidelines for the aspects of parenting that have been determined.

• *Authoritarian Parenting*

Based on the interview results, by looking at aspects of parenting, the level of responsiveness of authoritarian parenting is low. The caregiver's ability to validate emotions in children is low, and behavior is more suppressed by strict and firm upbringing. A challenging and healthy attitude is manifested in behavioral control of children's rules and conduct. Children are expected to obey the rules and orders of the caregiver. This also leads to the imposition of punishment on children's behavior that is considered deviant. Discipline can be verbal and physical. As stated by one participant (R4) as follows:

"...Yes, not often; for example, if you cry and do not stay quiet, you have also been yelled at..." (R4)

Punishment can create a minimal and tenuous relationship and make children reluctant to the caregiver. Caregivers recognize that parenting aims to make children better individuals, so they do not prioritize emotional closeness. Another aspect that can reduce closeness is communication. Communication is one-way and aims to provide direction.

• *Authoritative Parenting*

Responsiveness in this parenting pattern is good because it prioritizes parenting with inductive methods. Caregivers explain more limits openly with reasons that are acceptable to the child. The inductive approach pays attention to the child's opinion by negotiating freely. However, there are still limits so that the application of rules is more flexible but still according to the purpose of parenting. As one participant (R3) stated as follows:

"...If it makes sense, he will not ask until he cries out loud..." (R3)

The goal of behavior formation is controlled by verbal and psychological control. Caregivers admit that children are more comfortable when verbal control also pays attention to the child's willingness and ability to digest rules in behavior formation. Children have self-control but remain within reasonable limits by the caregiver's parenting goals. Directions are given relatively to all family members so that an expected opinion results in comfort and closeness between family members.

- *Permissive Parenting*

The responsiveness of this parenting pattern is the highest of other parenting patterns because caregivers prioritize a sense of comfort in parenting. This is realized by applying rules that follow the child's condition. The child's condition is an excuse for caregivers not to be strict during parenthood. As stated by one participant (R5) as follows:

"...I did not push him because he is so easily angered his emotions are not stable..." (R5)

Limits on rules are recognized as low so that the caregiver monitors rather than controls the child. The purpose of monitoring is to keep the child within safe boundaries, but the child still feels comfortable. Caregivers mostly understand the child's situation through emotional validation. Emotional validation is recognized by caregivers to be given with the direction of communication that adjusts the child's condition. For example, the child will be invited to discuss when the child's emotions are stable, while the child will be calmed more when emotions are unstable. This unwittingly causes children to feel uncomfortable with strangers and more likely to choose to socialize. As a result, the child is only close to the caregiver.

- *Neglectful Parenting*

Responsiveness in this parenting pattern was the lowest compared to other parenting patterns. This is reflected in the caregiver not paying attention to the child's needs and desires during care. Late developmental abilities are also not recognized by the caregiver. Caregivers are not fully involved in parenting, so they tend to apply rules in an inconsistent manner and do not have clear boundaries. Support is only provided instrumentally because the caregiver focuses only on the child's growth. Caregivers need parenting assistance to help children's development and growth. As stated by one participant (R2) as follows:

"...the mother is like that, sis. If she has a helper or a babysitter, I do not hand it over..." (R2)

Another thing that can reflect neglectful parenting is communication skills. One-way communication causes children's emotions not to be validated and creates an attention-seeking attitude in children.

➤ *Sleep Pattern Problems in ADHD Children*

- *Sleep Pattern Problems*

Children's sleep pattern problems based on the type of problem can be divided into sleep quality problems and sleep quantity problems. Sleep quality problems consist of problems with sleep efficiency, sleep duration, and sleep

latency. Sleep efficiency problems are related to the child's ability to wake up during sleep. Caregivers admit that children often wake up at night, especially children with high hyperactivity. Children quickly wake up during the day in a noisy or crowded environment. The problem of sleep duration is related to the child's changing sleeping hours and the child's uncertain sleeping hours. Children's sleeping hours change due to drowsiness and the caregiver's ability to prepare children's sleep time. The caregiver's ability to prepare for the environment also affects sleep onset. Children's uncertain sleeping hours are also influenced by activities and opportunities to sleep outside the usual sleep schedule. The problem of latency is related to the difficulty of drowsiness in children for no apparent reason. Caregivers admit that children still have difficulty falling asleep when the routine and sleeping environment have been adopted. Caregivers also recognize that children do not get sleepy quickly when they do not feel tired. As one participant (R7) stated as follows:

"...If I am not tired, I do not sleep..." (R7)

Sleep quantity problems consist of sleep onset insomnia, actual sleep problems, and sleep deprivation. Children with sleep-onset insomnia will sleep faster with the application of routines. Meanwhile, children who do not have a pattern will experience limit-setting insomnia. Caregivers with children who experience actual sleeping problems admit that children will wake up quickly and tend to be sensitive to the surrounding environment during sleep. Co-sleeping is recognized to help children be calmer and not promptly wake up during sleep. Children with sleep deprivation have various problems, such as feet that cannot stay still and delayed bedtime due to high hyperactivity.

In particular, caregivers with authoritarian parenting recognized sleep problems, especially problems with sleep efficiency and latency. The child had difficulty falling asleep for no apparent reason. Although a sleep schedule had been set, sleepiness came at different times and sometimes outside the plan. Meanwhile, caregivers with permissive parenting follow the child's sleepiness. As a result, the schedule changes according to the child's condition. In neglectful parenting, the sleep schedule will improve when the caregiver provides care. The child sleeps faster when the caregiver accompanies the child to sleep. However, the caregiver will allow the child to stay awake at night due to fatigue after work.

- *Causes of Sleep Pattern Problems*

The first cause of sleep problems in ADHD children is high hyperactivity. High hyperactivity at night causes children to experience delayed sleep. While hyperactivity during the day and night makes children lack nap time. The second cause of sleep problems in ADHD children is changing schedules and activities. The plan will temporarily change when the child is in an unusual situation, such as a family event or recitation. In addition, the schedule temporarily varies according to the child's drowsiness caused by fatigue, body condition after bathing, and satiety. Whereas

permanently, sleep schedules can change due to school schedules. As one participant (R1) stated as follows:

"...If there is a family event, he never takes a nap. So many families come..." (R1)

The third cause of sleep problems in ADHD children is unknown to the caregiver. Caregivers unaware of the cause of sleep problems will continue to try to implement a sleep routine so that the child falls asleep quickly.

IV. DISCUSSION

➤ Caregivers' Parenting

• Implementation of Caregivers' Parenting

Parenting is applied based on behavior, habits, and beliefs (Shahsavari et al., 2012). Caregiver character is also one-factor influencing parenting style (Sarwar, 2016). Harsh parenting characteristics have particular purposes, especially for children with disabilities (Cherry, 2015). Firm boundaries can suppress deviant behavior in children (Sarwar, 2016). Conversely, common limitations are associated with rule-deviant behavior in children (Mensah & Kuranchie, 2013).

Rule-giving is generally associated with positive disciplining and control aspects of parenting (Durrant, 2016). The ability of caregivers to be consistent and disciplined with rules is related to authoritative and authoritarian parenting (Mensah & Kuranchie, 2013). However, negotiation is more prevalent in authoritative parenting (Larzelere et al., 2017; Piko & Balázs, 2012). On the other hand, low consistency in rules is associated with permissive parenting (Jinnah & Stoneman, 2016). Caregivers with permissive parenting are more consistent than neglectful (Dwairy, 2008). Consistency in routines is essential because it is associated with sleep disorders (Wilson, 2013).

Previous research found that implementing limits and routines such as parental limit-setting helped reduce sleep problems (Dorris, 2008). Sleep in children can be improved by consistent bedtime routines and behaviors (Wilson, 2013). Parental behaviors such as bedtime calming behaviors contributed more to developing sleep problems (Ball, 2003; Hayes, Roberts & Stowe, 1996; Taylor, Donovan & Leavitt, 2008). Thus, children's waking and sleeping behaviors depend on the calming patterns of each caregiver (Scott, 2013; Wilson, 2013).

• Implementation of Sleep Patterns Based on Parenting

Implementing fixed sleep patterns is generally already present in children with authoritative parenting (Kitsaras et al., 2018; Smith et al., 2014). This is because consistent habituation in children is accompanied by negotiation skills in children's sleep patterns (Smith et al., 2014). Meanwhile, the application of sleep patterns that are still changing is related to the child's condition and family conditions (Smith et al., 2014). Caregivers recognize the need of children who cannot understand the sleep patterns that are applied to be the main obstacle (Dougherty et al., 2013; Gregory & O'Connor, 2002; Willoughby et al., 2008).

➤ Type of Parenting

• Authoritarian Parenting

Authoritarian parenting is defined as parents exhibiting high demands and low responsiveness levels (Baumrind, 1971; Steinberg, 2001). The lack of closeness and warmth during parenting manifests in the caregiver's strict and harsh character (Alloy et al., 2006; van Voorhees et al., 2008). Hard and firm attitudes are manifested in behavioral control over children's rules and behavior (Kuppens & Ceulemans, 2019). Children are expected to obey the rules and orders of the caregiver (Trifan et al., 2014; Kuppens & Ceulemans, 2019). This has also led to punishing children's behavior that is considered oppositional (Durrant et al., 2003; Trifan et al., 2014; Kuppens & Ceulemans, 2019). Punishment can be verbal and physical (Eamon, 2001; Durrant et al., 2003; Trifan et al., 2014; Kuppens & Ceulemans, 2019). Punishment can reduce the closeness between children and caregivers (Eamon, 2001; Sartaj & Aslam, 2010). Closeness is the least perceived aspect of this care (Meteyer & Perry-Jenkins, 2009; Sartaj & Aslam, 2010). The low closeness aspect results from low emotional reward during caregiving (Chaudhuri et al., 2009).

Caregivers do not allow children to understand the purpose of care through communication (Sanavi et al., 2013). So children's behavior that does not meet the parenting goals will be harshly suppressed (Kuppens & Ceulemans, 2019). Harsh parenting can lead to oppositional behavior as an adult (Eamon, 2001; Sartaj & Aslam, 2010). According to King (2016), parenting stress during parenting was high in this parenting pattern. Parenting stress can also increase insomnia and sleep problems in children and caregivers (Clarke & Harvey, 2012).

• Authoritative Parenting

Responsiveness in this parenting pattern is good because it prioritizes parenting with inductive methods (Baumrind, 1971; Steinberg, 2001). Control is tight but makes the child emotionally comfortable (Simons & Conger, 2007; Barber & Xia, 2013). This inductive approach provides space for children to negotiate with caregivers freely. However, there are still limits (Kuppens & Ceulemans, 2019), so the application of rules is more flexible but still to the goals of parenting (Barber & Xia, 2013; Sanavi et al., 2013).

Psychological control, such as control of thoughts and feelings, is carried out through communication (Kuppens & Ceulemans, 2019; Sanavi et al., 2013). This parenting pattern's high level of responsiveness prioritizes children's understanding (Kuppens & Ceulemans, 2019; Sanavi et al., 2013). As a result, children have self-control but remain within reasonable limits by the caregiver's parenting goals (Dorris et al., 2008). Rules are also given equally to all family members so that an expected opinion results in the sense of comfort and closeness between family members (Billows et al., 2009; Sanavi et al., 2013).

- *Permissive Parenting*

The responsiveness of this parenting pattern is the highest of other parenting patterns because the caregiver prioritizes comfort in care (Kimble, 2014). Caregivers with permissive parenting will have low restrictions, pressure on routines, supervision, and encouragement of rules (Kimble, 2014; Shetty et al., 2022). The child's condition is used as a reason for caregivers not to be assertive during caregiving (Estlein, 2016; Kimble, 2014).

Caregivers monitor rather than control children during care (Baumrind & Thompson, 2019; Kuppens & Ceulemans, 2019). Low control is a form of sin avoidance in children (Javadnoori et al., 2015; Kuppens & Ceulemans, 2019). A sense of comfort is primarily developed in this parenting pattern (Couelle, 2014). A sense of comfort is generated by providing emotional validation to children. Emotional validation can be in the form of affection and suppression of negative emotions in children (Kimble, 2014). The direction of communication usually adjusts the purpose of suppressing emotions (Estlein, 2021; Kimble, 2014).

Children with permissive caregivers often have difficulty regulating their behavior and emotions because the caregiver does not limit the child's actions (Kawabata et al., 2011). As a result, children are less able to adjust to other people, making it difficult to feel close to new people (Barber & Harmon, 2002; Barber et al., 2005; Kuppens et al., 2013).

- *Neglectful Parenting*

Caregivers do not set clear boundaries and rules (Williams et al., 2009). This is due to low responsiveness in this parenting pattern (Kimble, 2014). Low responsiveness reflects a denial of the child's condition (Seipp & Johnston, 2005; Podolski, 2001). Caregivers also do not recognize late developmental abilities (Garcia & Gracia, 2009; Kimble, 2014). Support is only provided materially due to low emotional understanding in children (Estlein, 2016; Kuppens & Ceulemans, 2019; Sarwar, 2016). The developmental ability of children in this parenting pattern is the slowest among children with other parenting patterns (Baumrind, 1991; Lamborn et al., 1991; Mandara & Murray, 2002; Shucksmith et al., 1995; Steinberg et al., 1994)

Caregivers need assistance to help children's development and growth (Modesto-Lowe, 2008). Aid is needed because the caregiver cannot fully care for the child (Modesto-Lowe, 2008). After all, aspects of parenting such as communication and closeness in this parenting pattern are low (Estlein, 2016; Mahaptra & Batul, 2016). Communication in this parenting pattern is one-way and indirect (Estlein, 2016). So children tend to grow into individuals with internalization and externalization problems (Dougherty et al., 2013; Williams et al., 2009; Wolfradt et al., 2003).

➤ *Sleep Pattern Problems in ADHD Children*

- *Sleep Pattern Problems*

According to Meltzer (2010), adequate sleep in children is essential for growth and development, family well-being,

and sleep quality. Sleep problems can be influenced by quality and quantity problems (Kohyama, 2021). Children experience sleepiness-related latency problems, such as sleep onset and hyperactivity problems (Konofal et al., 2010). ADHD children often have Sleep Onset Latency (SOL) related to low sleep latency and duration (Stein et al., 2012). Sleep duration in ADHD children is shorter than in other children (Gau, 2009). Sleep duration can also change due to activity and environmental conditions (España, 2011). The lowest sleep duration was found in authoritative parenting (Schatz et al., 2015). The efficiency issue is related to the intensity of waking children during sleep because it is related to their ability to sleep (Baglioni et al., 2010; Soehner et al., 2012). In ADHD children, efficiency can be impaired due to the environment and medication (Scarpelli, 2019). As a result, children will wake up quickly during sleep and find it difficult to fall back asleep (Schatz et al., 2015).

Sleep-onset insomnia is when children have difficulty sleeping because they are accustomed to certain habits; for example, children are usually immediately calmed when crying (Chung, 2015). Practices will help speed up children's sleep, so children will have difficulty sleeping if habits are not applied (Thorpy, 2012). Limit-setting insomnia is when the caregiver does not support the sleep routine (Owens & Mindell, 2011; Owens & Moore, 2017). As a result, the sleep schedule is delayed and later than it should be (Owens & Mindell, 2011; Owens & Moore, 2017). Sleep duration randomly decreases and increases depending on the sleep continuity of the child with limit-setting insomnia (Owens & Mindell, 2011; Owens & Moore, 2017). Children with low routine settings will resist sleeping and sleep onset delay, affecting sleep duration, daytime sleepiness, and parasomnias (Mick et al., 2000).

A proper sleep problem is a sleep disorder where children do not sleep appropriately (Ueda et al., 2020). As a result, children often wake up during sleep related to the deep NREM sleep phase and sleep latency (Ueda et al., 2020). Proper sleep is also associated with children who sleep in a moving place or a different room than usual (Owens, 2005). Sleep deprivation makes children experience a lack of quantity and quality of sleep because they do not have enough time to sleep, for example, due to Restless Legs Syndrome (RLS), Periodic Limb Movements in Sleep (PLMS), or the effects of drugs and unsupportive environments (Morash-Conway et al., 2017; Srifueungfung et al., 2020; DelRosso et al., 2021). Parenting is associated with sleep problems (Mehta, 2019). Responsive parenting can help conditions that disrupt children's sleep with calming efforts (Mindell & Williamson, 2018).

- *Causes of Sleep Pattern Problems*

Sleep Onset Latency (SOL) and sleep-onset insomnia can be caused by psychiatric comorbidities or pre-sleep environment (Ramtekkar, 2015). High hyperactivity can be the main reason children cannot settle down even at bedtime (Smith et al., 2014; Meltzer & Mindell, 2007). High hyperactivity at night causes children to experience delayed bedtime (Smith et al., 2014). Sleep duration is also affected by children's hyperactivity (Krystal, 2008; Espana, 2011).

In addition to hyperactivity, circadian rhythms also affect ADHD children's sleep problems (Bathory, 2017). Children with a fixed schedule will more easily adjust to bedtime (Stein et al., 2012). Conversely, children with irregular sleep schedules will experience problems with sleep onset (Shetty et al., 2022; Staples et al., 2015). Changeable sleep schedules are most commonly found in permissive and neglectful parenting (Sciberras et al., 2020; 2022). Sleep schedules in permissive parenting change according to the child's activities and circumstances (Noble, 2012). In neglectful parenting, the sleep schedule is uncertain due to the care not entirely provided by the caregiver (Noble, 2012).

• Clinical Implications

Based on the study's results, it can be seen how the effect of applying parenting patterns on the sleeping patterns of ADHD children qualitatively. Therefore, clinical implications for occupational therapists based on the results of this study are to be able to provide education and interventions to caregivers related to sleep patterns based on the parenting patterns applied. In addition, for caregivers, this research can be used as a reference to reduce sleep pattern problems, specifically in each parenting pattern applied by caregivers and parents.

V. CONCLUSION

External and internal factors influence ADHD children's sleep ability. One of the external factors is parenting related to habits and sleep patterns. At the same time, sleep patterns in ADHD children are influenced by the child's condition, sleep habits, and the environment before bed. Caregiver parenting patterns affect sleeping habits.

Sleep patterns in authoritarian parenting patterns have a very related way between nap time and nighttime sleep. Sleep patterns in traditional parenting patterns are the best due to stable parenting and good emotional regulation of children. Sleep patterns in permissive parenting tend to change according to the child's schedule and activities due to low restrictions on sleep time from the caregiver. Sleep patterns in neglectful parenting were poor, and many sleep problems were found, especially in sleep latency and efficiency, due to low emotional security before bedtime.

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