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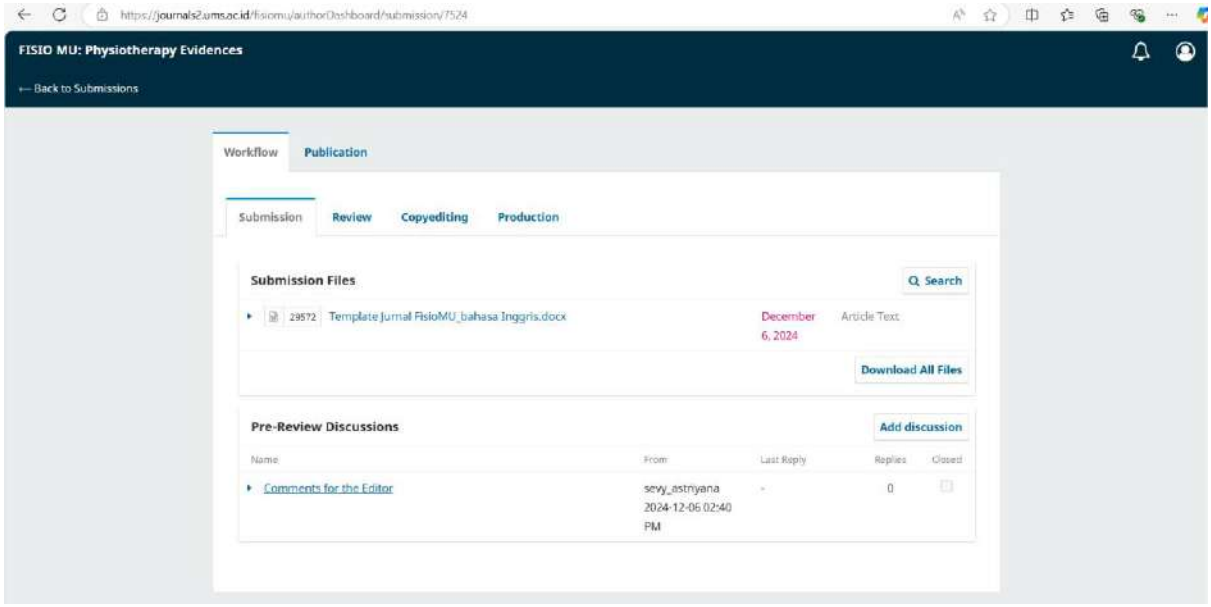
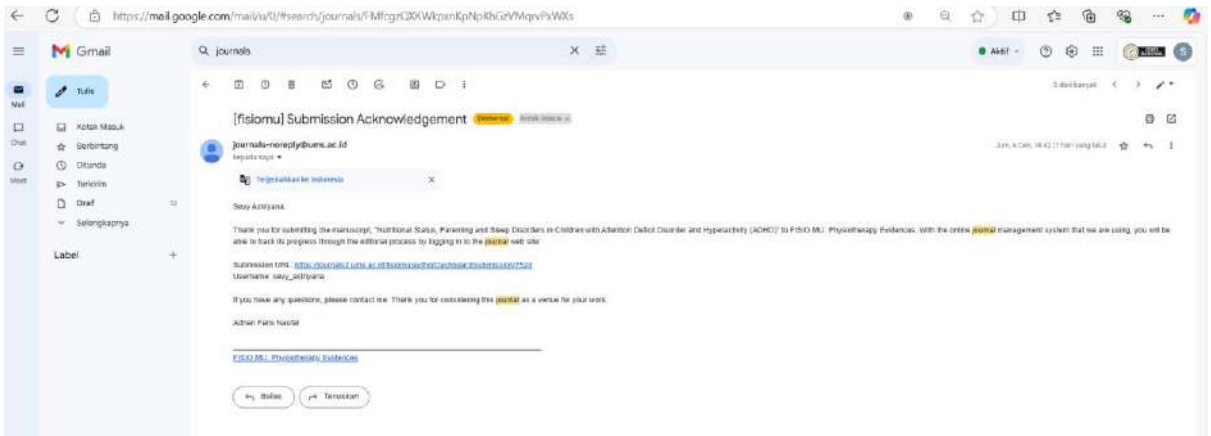
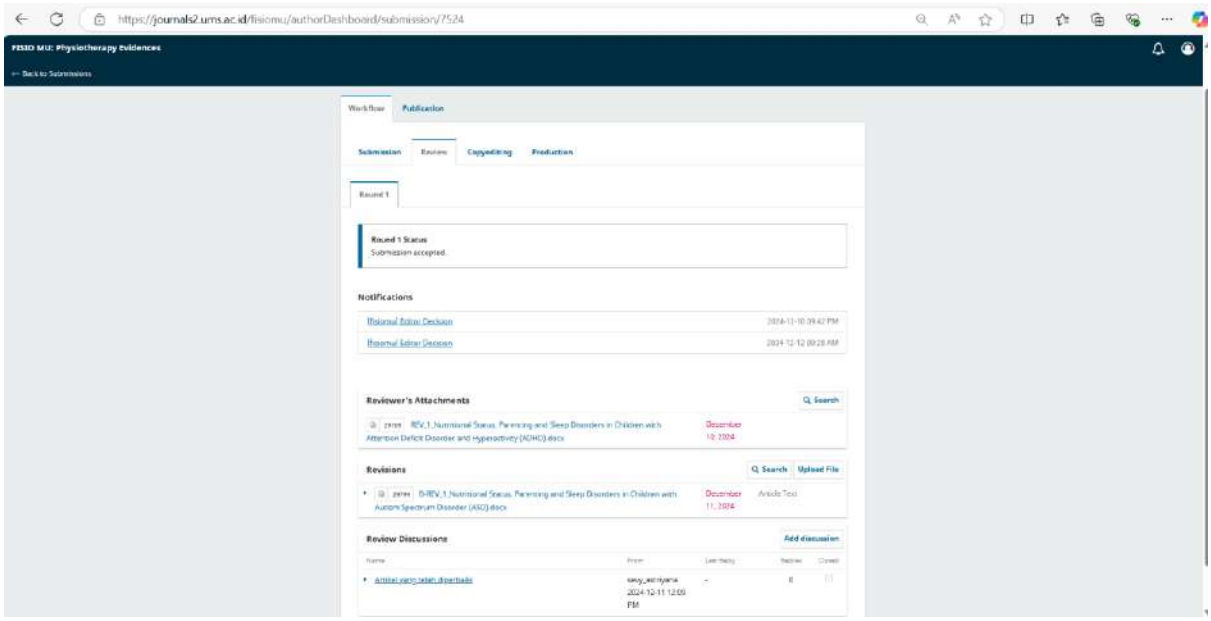
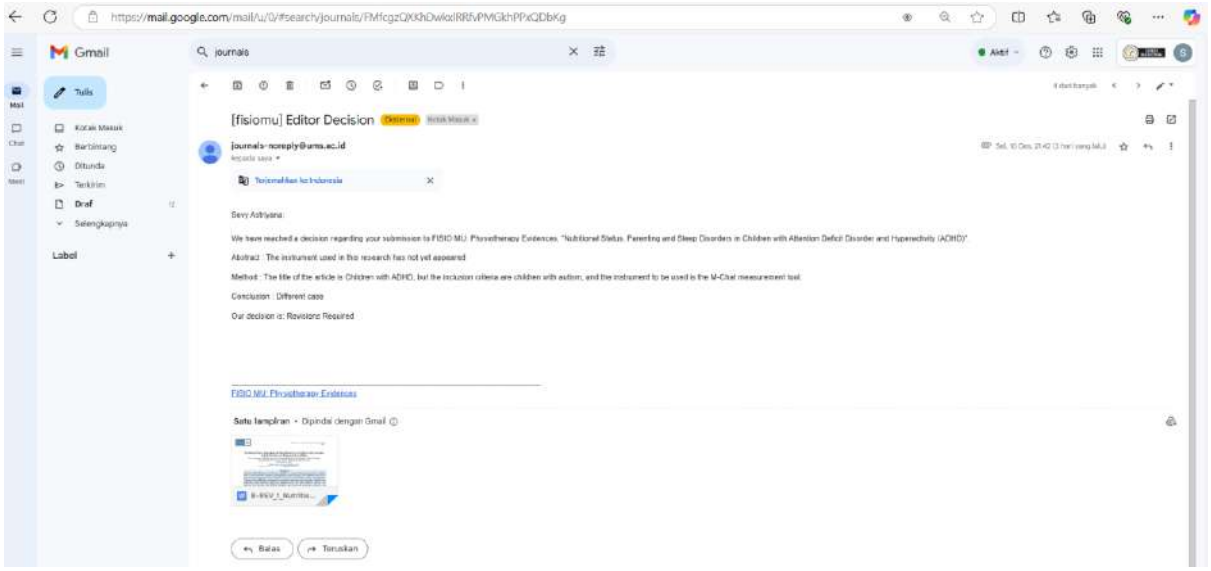




Bukti Proses Review





Bukti Catatan Revisi

Nutritional Status, Parenting and Sleep Disorders in Children with Attention Deficit Disorder and Hyperactivity (ADHD)

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Tanggal Submisi …….. ; Tanggal Penerimaan: ……

ABSTRACT

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder of children that is easily distracted, impulsive, and hyperactive that can persist into adulthood which has a risk of balance disorders, sleep disorders with the risk of rebellion, obesity, and language. Children with ADHD have the potential to experience nutritional status disorders. Children who experience sleep disturbance affect the thinking process and affect negative behavior, and behavior like children with ADHD. Parenting helps deal with emotional instability, and compromise on potentially harmful actions in children with ADHD. The purpose of this study is to find out the relationship between nutritional status, parenting style and sleep disturbance in ADHD children. This research method used a descriptive-cross-sectional design with a purposive sampling technique. The results of the study were obtained: 1) poor nutritional status (5%) has sleep disturbance with authoritarian parenting; 2) normal nutritional status (84%) has sleep disturbance (62%) with from parents who apply permissive parenting (50%), democratic (31.25%), authoritarian (18.75%); 3) Excess nutritional status comes from permissive parenting and has sleep disturbances (50%). Conclusions: There was no relation between nutritional status, parenting style and sleep disturbances in children with ADHD.

***Keywords**:* hyperactive, nutrition, family, sleep, development

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INTRODUCTION

Attention and Hyperactivity Disorder (ADHD) is a neurodevelomental disorder of children that persists until adulthood (50%-60%) which is characterized by easy distraction (focus disorder), hyperactivity and impulsivity (Carpena et al., 2020; Moghaddam et al., 2013; Shen et al., 2020). Balance disorders, sleep disorders with a risk of rebellion, obesity, and language are comorbid conditions in ADHD.

Sleep disorders are 5 times more common in children with ADHD and 25-50% of children with ADHD are reported to have sleep disorders (Evi et al., 2021). Several studies have reported that there is a relationship between sleep disorders and ADHD, where sleep disorders can be used as an early sign that a child has ADHD so that

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sleep disorders need to be addressed immediately to provide ADHD treatment (Carpena et al., 2020)(Gosling et al., 2023). Children who experience sleep disorders affect the thinking process and affect negative behaviors, and behaviors like children with ADHD (Evi et al., 2021). Children with ADHD tend to find it difficult to be silent and are encouraged to continue their activities, so they may experience nutritional status disorders.

Children with ADHD who grow into adolescents have a 1.5 times risk of obestity if they do not undergo treatment, and adolescents with ADHD who receive treatment 1.6 times the risk of becoming underweight compared to normal adolescents (Megapuspita et al., 2017). Attention of parents in monitoring the nutritional status of children with ADHD so as not to affect the process of children's growth and development.

Parenting affects children's mental and development. Children with ADHD need proper attention and parenting to alleviate ADHD in children (Kaunang et al., 2016). Parenting helps deal with emotional instability, and compromise on potentially harmful actions in children with ADHD (Minsih, 2023).

Studies on parenting, nutritional status and sleep disorders are not found much in Indonesia. Proper parenting in children with ADHD can alleviate the symptoms of ADHD, as well as sleep quality and nutritional status need to get attention from parents in order to maximize treatment in children with ADHD. So this study aims to find out the picture of nutritional status, parenting style applied and sleep disorders experienced in children with ADHD.

METHOD

This research is a descriptive-cross-sectional design. This research was carried out at SLB Mitra Ananda Colomadu, Karanganyar, Central Java. The sample of this study was selected using the purposive sampling method with the following criteria: 1) children with autism diagnosis; 2) children aged 7-12 years; 3) controlled autism conditions and no tantrums; 4) Mild Autism condition, no self-harm. To determine the condition of the respondents, the M-CHAT Screening questionnaire for autism was used which consisted of 23 questions. Sleep disorders were measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire, the implementation of parenting was measured by the Parenting Styles and

Commented [AL2]: Di judul dengan kasus ADHD, namun kriteria inklusi adalah anak ADHD. Mohon menyesuaikan dengan responden yang diukur

Dimensions Questionnaire (PSDQ)and classified into Democracy Style (DS), Authoritarian Style (AS) and Permissive Style. Body heigh and weight measurements to determine the nutritional status of respondents. Data analysis technique using Pearson's Chi Square test.

RESULT

Data collection was carried out at SLB Mitra Ananda which is located in Colomadu, Karanganyar Regency, Central Java. The total number of respondents who met the criteria was 19 people with the distribution as follows:

Table 1 Respondent Distribution

	Frequency	Percentage
Sex		
Male	18	95%
Female	1	5%
Age		
7 – 8 y.o	7	35%
9-10 y.o	9	45%
11-12 y.o	3	15%
Nutritional Status		
Under	1	5%
Normal	16	84%
Over	2	11%
Sleep Disturbance		
Yes	12	63%
No	7	37%
Parenting Style		
DS	5	26%
AS	4	21%
PS	10	53%

From table 1, it is known that 95% of respondents are male and 5% female consisting of 9-10 years old (45%), 7-8 years old 35% and 11-12 years old 15%. The nutritional status of children is normal at 84%, over 11% and low by 5%. Respondents with sleep disorders were 63% while 37% of respondents did not experience sleep disorders. The most applied parenting style is permissive parenting (53%), followed by democratic parenting (26%), while authoritarian parenting is 21%.

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The data analysis is presented through the table below:

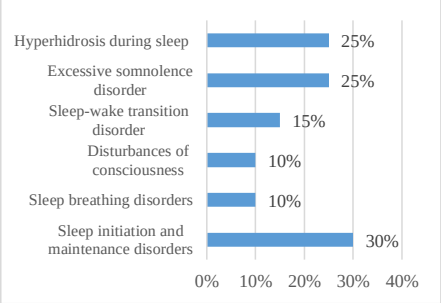

Diagram 1 Characteristics of sleep disorders

The characteristics of sleep disorders that occur in the most respondents are disturbances in initiating and maintaining sleep (30%), hyperhidrosis and excessive somnolence disorders (25%), sleep-to-wake

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transition disorders (15%) and disorders of consciousness and respiratory disorders experienced by 10% of ADHD children respectively.

Table 2 Nutritional Status and Parenting Style

Parenting Style	Nutritional Status			*p value*
	Under	Normal	Over	
DS		5		
AS	1	3		.208
PS		8	2	

The table above illustrates the relationship between nutritional status and parenting. Democratic parenting was applied by parents by 26.31% with normal nutritional status (100%), authoritarian parenting 21% with the distribution of undernutrition status of 25% and normal nutritional status of 75%, while permissive parenting was 52.63% with normal nutritional status of 80% and overnutrition of 20%. Meanwhile, from the data analysis, a significance value of 0.208>0.05 was obtained, which means that there is no relationship between parenting and nutritional status in children with ADHD.

Table 3 Nutritional Status and Sleep Disturbance

Sleep Disturbance	Nutritional Status			*p value*
	Under	Under	Under	
Yes	1	10	1	.587
No		6	1	

The table of relationships between nutritional status and sleep disorders that occur in children with ADHD above shows that 50% of children with excess nutritional status have sleep disorders, while in normal nutritional status 37.5% have sleep disorders and children with undernutrition status do not experience sleep disorders. Meanwhile, from the results of the correlation test analysis seen from the p value of 0.587>0.05, the results were obtained that there was no relationship between nutritional status and sleep disorders in ADHD children.

Table 4 Parenting Style and Sleep Disorders

Sleep Disturbance	Parenting Style			*p value*
	D	A	P	
Yes	3	2	7	.773
No	2	2	3	

The relationship between parenting and sleep disorders is described in table 4. Children who experience sleep disorders with democratic parenting style are 25%, autretive parenting is 16.67% and permissive parenting is 58.33%. Meanwhile, if you look at the p value of 0.773>0.05, there is no relationship between nutritional status and sleep disorders in children with ADHD.

In this study, children who experienced ADHD consisted of 95% male, and 5% female. Sex has a correlation with the incidence of ADHD in children with a ratio of 3:1 incidence in males to females in childhood and in adults the ratio is close to 1:1 caused by less obvious ADHD symptoms in females (da Silva et al., 2020)(De Rossi et

al., 2022). Boys are easily detected because they show externalizing behavior compared to girls (De Rossi et al., 2022).

The age of the child affects the process of healing/treating ADHD, where older children will show improvement to ADHD symptoms (Chew, 2022). In addition, age affects the risk of ADHD, where children who attend school earlier than school age are more likely to be detected by ADHD due to the maturity factor (Fleming et al., 2022).

Parenting is influenced by the level of parental knowledge, including in feeding children. Parents with sufficient knowledge will affect the fulfillment of nutrition in children (Anggari & Yunita, 2020). In addition to affecting nutrition, parenting is also an external factor in children's growth and development. Parental education affects the parenting style that will be used in parenting. Parents of children with ADHD are more authoritarian and less permissive in parenting when compared to parents of normal children (Moghaddam et al., 2013).

Nutritional status is a condition of balance between nutritional intake and nutritional needs. Nutritional status is influenced by physical activity, sleep duration and diet applied by parents through parenting (Satriya Putra et al., 2022)(Deviantony, 2024). In table 2, it is known that children with authoritarian parents have undernourished status (25%), and normal (75%). Parents with authoritarian parenting tend to have a lower risk of children experiencing malnutrition compared to permissive parenting (Fatkuriyah & Sukowati, 2022)(Lestari & Putri, 2024).

In the results of the statistical test, it was found that there was no relationship between sleep disorders and nutritional status (p value 0.857 > 0.05), but when viewed from the results of the distribution analysis of table 3, it was found that children with sleep disorders were children with under- and excessive nutritional status. Sleep disorders experienced by children affect children's appetite, and children who experience sleep disorders have a risk of obesity (Satriya Putra et al., 2022). Adolescents who experience food crises are reported to have sleep disturbances due to insufficient nutritional needs (Wang, 2021).

The relationship between sleep disturbances and parenting was not proven (p value 0.773>0.05). Habits of sleep routines,

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the presence of parents are things that affect the quality of sleep in children with ADHD, parents with ADHD can also affect sleep disorders that occur in children. Parents with low sleep quality will be followed by sleep disorders in children, so family-based interventions need to be provided in the treatment of ADHD (Sciberras et al., 2017)(Joseph, 2023).

CONCLUSION

In optimizing the growth and development of children with ADHD, attention is needed in various factors. Parenting, nutritional status and sleep quality are some of the factors that need to be considered and treated children with ADHD. From the results of the study, there was no significant relationship between nutritional status and parenting, there was no relationship between nutritional status and sleep disorders and there was no relationship between parenting and sleep disorders. However, these three things need to get attention for parents in accompanying their children's growth and development. Parents with good knowledge will influence parenting styles, including in arranging diets, especially food composition and scheduling of children's rest time so that they get good nutritional status and good sleep quality.

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Commented [AL4]: Mohon menyesuaikan dengan kasus yang telah di tuliskan pada kriteria inklusi, yaitu anak dengan autisme

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Bukti perbaikan hasil Review

Nutritional Status, Parenting and Sleep Disorders in Children with Autism Spectrum Disorder (ASD)

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ABSTRACT

Autism Spectrum Disorder (ASD) is a neurological disorder characterized by social communication disorders, repetitive behaviors that affect cognition. Children with ASD have the potential to experience nutritional status disorders. Children who experience sleep disorders affect the thinking process and affect negative behavior, and behaviors like children with ASD. Parenting helps deal with emotional instability, and compromise on potentially harmful actions in children with ASD. The purpose of this study is to determine the relationship between nutritional status, parenting style and sleep disorders in children with ASD. This research method is a descriptive-cross-sectional design with purposive sampling techniques. M-CHAT Screening questionnaire used to diagnose autism. Sleep disorders were measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire, the implementation of parenting was measured by the Parenting Styles and Dimensions Questionnaire (PSDQ) and height and weight measurements to determine nutritional status. The results of the study were obtained: 1) poor nutritional status (5%) has sleep disturbance with authoritarian parenting; 2) normal nutritional status (84%) has sleep disturbance (62%) with from parents who apply permissive parenting (50%), democratic (31.25%), authoritarian (18.75%); 3) Excess nutritional status comes from permissive parenting and has sleep disturbances (50%). Conclusions: There was no relation between nutritional status, parenting style and sleep disturbances in children with ADHD.

***Keywords**: autism, development, hyperactive, nutrition, parenting, sleep disturbance*

INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurological disorder characterized by social communication disorders, repetitive behaviors that affect cognition (Kassim A. B. M. & Mohamed N. H., 2019; Matmusaeva et al., 2024; Zeng, 2024). The prevalence of autism in Indonesia is estimated at 2.4 million and increases by 500 cases per year (Fathmawati et al., 2023).

Children with ASD have sleep disturbances of 50-80%(Mazzone et al., 2018). Sleep disorders increase the risk of behavioral disorders. Children with ASD experience more insomnia and adversely affect children's behavior, causing stress, mood swings or fatigue (Bernardi et al.,

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2023). Children who experience sleep disorders affect the thinking process and affect negative behaviors, and behaviors like children with attention disorders and hyperactivity (Evi et al., 2021). Children with ASD tend to find it difficult to be silent and are encouraged to continue their activities, so they may experience nutritional status disorders.

Children with ASD are at risk of experiencing malnutrition, both low and excessive levels due to abnormal eating behaviors related to energy, protein, omega 3 and essential vitamins, so that nutrition is a great concern in the treatment of ASD in children(Kittana et al., 2023). Children with ASD have a higher risk of malnutrition (342.5%) than normal children (275.9%), and have a higher body mass index that is associated with nutrition and weight (Marí-Bauset et al., 2015). So in this case, it requires the attention of parents in monitoring the nutritional status of children with ASD so as not to affect the child's growth and development process.

Parenting has a moderate correlation with behavior in children with ASD, authoritarian parenting is preferred by parents with children with ASD but parenting that forces the child, will increase the risk of behavioral disorders in children (Lin et al., 2023; Thanapalan et al., 2021). Permissive parenting does not affect ASD, but it will cause difficulties in handling behavior, as well as structured authoritarian parenting that lacks emotional support that can increase anxiety and aggression in children(Lin et al., 2023; Zhou & Yi, 2014).

Studies on parenting, nutritional status and sleep disorders are less found in Indonesia. Proper parenting in children with ASD can alleviate the symptoms of behavioral disorders, as well as sleep quality and nutritional status need to get attention from parents in order to maximize treatment in children with ASD. So this study aims to find out the picture of nutritional status, parenting style applied and sleep disorders experienced in children with ASD.

METHOD

This research is a descriptive-cross-sectional design. This research was carried out at SLB Mitra Ananda Colomadu, Karanganyar, Central Java. This research passed the ethical clearance procedure by the Health Research Ethics Commission of Sekolah Tinggi Ilmu Kesehatan Nasional No: 141/EC/KEPK/X/2024. The sample of this study was selected using the purposive sampling method with the following criteria: 1) children with autism diagnosis; 2) children

aged 7-12 years; 3) controlled autism conditions and no tantrums; 4) Mild Autism condition, no self-harm. To determine the condition of the respondents, the M-CHAT Screening questionnaire for autism was used which consisted of 23 questions. Sleep disorders were measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire, the implementation of parenting was measured by the Parenting Styles and Dimensions Questionnaire (PSDQ)and classified into Democracy Style (DS), Authoritarian Style (AS) and Permissive Style. Body heigh and weight measurements to determine the nutritional status of respondents. Data analysis technique using Pearson's Chi Square test.

RESULT

Data collection was carried out at SLB Mitra Ananda which is located in Colomadu, Karanganyar Regency, Central Java. The total number of respondents who met the criteria was 19 people with the distribution as follows:

Table 1 Respondent Distribution

	Frequency	Percentage
Sex		
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Female	1	5%
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Nutritional Status		
Under	1	5%
Normal	16	84%
Over	2	11%
Sleep Disturbance		
Yes	12	63%
No	7	37%
Parenting Style		
DS	5	26%
AS	4	21%
PS	10	53%

Table 1 showed that 95% of respondents are male and 5% female consisting of 9-10 years old (45%), 7-8 years old 35% and 11-12 years old 15%. The nutritional status of children is normal at 84%, over 11% and low by 5%. Respondents with sleep disorders were 63% while 37% of respondents did not experience sleep disorders. The most applied parenting style is permissive parenting (53%), followed by democratic parenting (26%), while authoritarian parenting is 21%.

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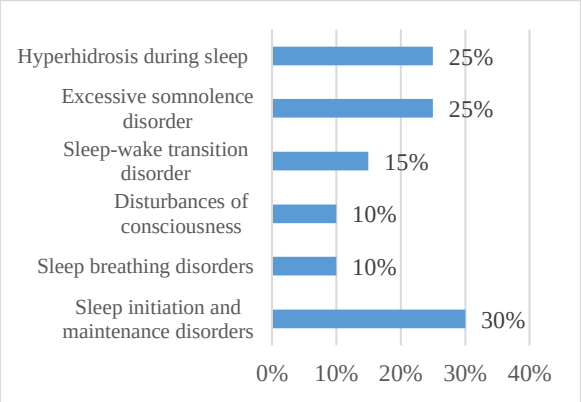

Diagram 1 Characteristics of sleep disorders

The characteristics of sleep disorders that occur in the most respondents are disturbances in initiating and maintaining sleep (30%), hyperhidrosis and excessive somnolence disorders (25%), sleep-to-wake transition disorders (15%) and disorders of consciousness and respiratory disorders experienced by 10% of ASD children respectively.

The data analysis is presented through the table below:

Table 2 Nutritional Status and Parenting Style

Parenting Style	Nutritional Status			*p value*
	Under	Normal	Over	
DS		5		
AS	1	3		.208
PS		8	2	

The table above illustrates the relationship between nutritional status and parenting. Democratic parenting was applied by parents by 26.31% with normal nutritional status (100%), authoritarian parenting 21% with the distribution of undernutrition status of 25% and normal nutritional status of 75%, while permissive parenting was 52.63% with normal nutritional status of 80% and overnutrition of 20%. Meanwhile, from the data analysis, a significance value of 0.208>0.05 was obtained, which means that there is no relationship between parenting and nutritional status in children with ASD.

Table 3 Nutritional Status and Sleep Disturbance

Sleep Disturbance	Nutritional Status			*p value*
	Under	Under	Under	
Yes	1	10	1	.587
No		6	1	

The table of relationships between nutritional status and sleep disorders that occur in children with ASD above shows that 50% of children with excess nutritional status have sleep disorders, while in normal nutritional status 37.5% have sleep disorders and children with undernutrition status do not experience sleep disorders. Meanwhile, from the results of the correlation test analysis seen from the p value of 0.587>0.05, the results were obtained that there was no relationship between nutritional status and sleep disorders in ASD children.

Table 4 Parenting Style and Sleep Disorders

Sleep Disturbance	Parenting Style			*p value*
	D	A	P	
Yes	3	2	7	.773
No	2	2	3	

The relationship between parenting and sleep disorders is described in table 4. Children who experience sleep disorders with democratic parenting style are 25%, autretive parenting is 16.67% and permissive parenting is 58.33%. Meanwhile, if you look at the p value of 0.773>0.05, there is no relationship between nutritional status and sleep disorders in children with ASD.

In this study, children who experienced ASD consisted of 95% male, and 5% female. Sex has a correlation with the incidence of ASD in children with a diagnosis 3 to 4 times more often in males than females influenced by biological factors that affect brain development and neuroanatomical characteristics of ASD (Hernandez, 2023). The age of the child affects the process of cure/treatment of ASD, where the younger the age of treatment, the better the symptoms of ASD and the improvement of the severity of autism, language, adaptive skills after one year in special education (Bezalel et al., 2024).

Parenting is influenced by the level of parental knowledge, including in feeding children. Parents with sufficient knowledge will affect the fulfillment of nutrition in children (Anggari & Yunita, 2020). In addition to affecting nutrition, parenting is also an external factor in children's growth and development. In addition to affecting nutrition, parenting is also an external factor in children's growth and development. Parental education affects the parenting style that will be used in parenting. Parents of children with attention deficit and hyperactivity disorder and ASD are more authoritarian and less permissive in parenting when compared to parents of normal children (Lin et al., 2023; Moghaddam et al., 2013; Thanapalan et al., 2021)..

Nutritional status is a condition of balance between nutritional intake and nutritional needs. Nutritional status is influenced by physical activity, sleep duration and diet applied by parents through parenting (Satriya Putra et al., 2022)(Deviantony, 2024). In table 2, it is known that children with authoritarian parents have undernourished status (25%), and normal (75%). Parents with authoritarian parenting tend to have a lower risk of children experiencing malnutrition compared to permissive parenting (Fatkuriyah & Sukowati, 2022)(Lestari & Putri, 2024).

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In the results of the statistical test, it was found that there was no relationship between sleep disorders and nutritional status (p value 0.857 > 0.05), but when viewed from the results of the distribution analysis of table 3, it was found that children with sleep disorders were children with under- and excessive nutritional status. Sleep disorders experienced by children affect children's appetite, and children who experience sleep disorders have a risk of obesity (Satriya Putra et al., 2022). Adolescents who experience food crises are reported to have sleep disturbances due to insufficient nutritional needs (Wang, 2021).

The relationship between sleep disturbances and parenting was not proven (p value 0.773>0.05). Habits of sleep routines, the presence of parents are things that affect the quality of sleep in children with hyperactivity. Parents with low sleep quality will be followed by sleep disorders in children, so family-based interventions need to be provided in the treatment of hyperactivity(Joseph, 2023; Sciberras et al., 2017).

CONCLUSION

In optimizing the growth and development of children with ASD, attention is needed in various factors. Parenting, nutritional status and sleep quality are some of the factors that need to be considered and treated children with ASD. From the results of the study, there was no significant relationship between nutritional status and parenting, there was no relationship between nutritional status and sleep disorders and there was no relationship between parenting and sleep disorders. However, these three things need to get attention for parents in accompanying their children's growth and development. Parents with good knowledge will influence parenting styles, including in arranging diets, especially food composition and scheduling of children's rest time so that they get good nutritional status and good sleep quality.

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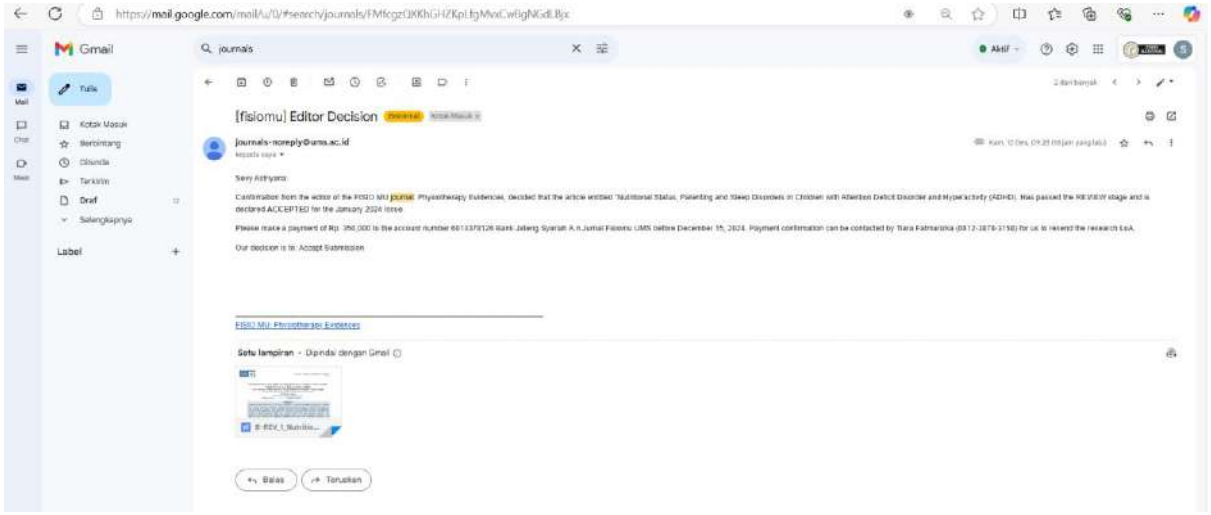

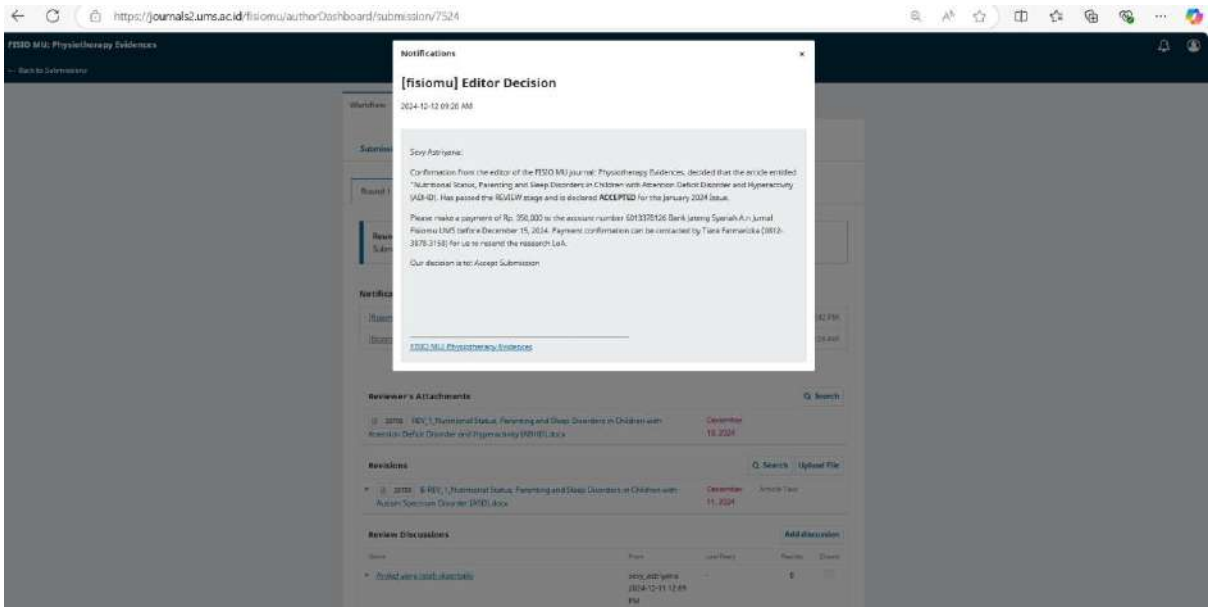

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B-REV_1_Nutritional Status, Parenting and Sleep Disorders in Children with Autism Spectrum Disorder (ASD)

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Nutritional Status, Parenting and Sleep Disorders in Children with Autism Spectrum Disorder (ASD)

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ABSTRACT

Autism Spectrum Disorder (ASD) is a neurological disorder characterized by social communication disorders, repetitive behaviors that affect cognition. Children with ASD have the potential to experience nutritional status disorders. Children who experience sleep disorders affect the thinking process and affect negative behavior, and behaviors like children with ASD. Parenting helps deal with emotional instability, and compromise on potentially harmful actions in children with ASD. The purpose of this study is to determine the relationship between nutritional status, parenting style and sleep disorders in children with ASD. This research method is a descriptive-cross-sectional design with purposive sampling techniques. M-CHAT Screening questionnaire used to diagnose autism. Sleep disorders were measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire, the implementation of parenting was measured by the Parenting Styles and Dimensions Questionnaire (PSDQ) and height and weight measurements to determine nutritional status. The results of the study were obtained: 1) poor nutritional status (5%) has sleep disturbance with authoritarian parenting; 2) normal nutritional status (84%) has sleep disturbance (62%) with from parents who apply permissive parenting (50%), democratic (31.25%), authoritarian (18.75%); 3) Excess nutritional status comes from permissive parenting and has sleep disturbances (50%). Conclusions: There was no relation between nutritional status, parenting style and sleep disturbances in children with ADHD.

***Keywords**: autism, development, hyperactive, nutrition, parenting, sleep disturbance*

INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurological disorder characterized by social communication disorders, repetitive behaviors that affect cognition (Kassim A. B. M. & Mohamed N. H., 2019; Matmusaeva et al., 2024; Zeng, 2024). The prevalence of autism in Indonesia is estimated at 2.4 million and increases by 500 cases per year (Fathmawati et al., 2023).

Children with ASD have sleep disturbances of 50-80%(Mazzone et al., 2018). Sleep disorders increase the risk of behavioral disorders. Children with ASD experience more insomnia and adversely affect children's behavior, causing stress, mood swings or fatigue (Bernardi et al.,

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2023). Children who experience sleep disorders affect the thinking process and affect negative behaviors, and behaviors like children with attention disorders and hyperactivity (Evi et al., 2021). Children with ASD tend to find it difficult to be silent and are encouraged to continue their activities, so they may experience nutritional status disorders.

Children with ASD are at risk of experiencing malnutrition, both low and excessive levels due to abnormal eating behaviors related to energy, protein, omega 3 and essential vitamins, so that nutrition is a great concern in the treatment of ASD in children(Kittana et al., 2023). Children with ASD have a higher risk of malnutrition (342.5%) than normal children (275.9%), and have a higher body mass index that is associated with nutrition and weight (Marí-Bauset et al., 2015). So in this case, it requires the attention of parents in monitoring the nutritional status of children with ASD so as not to affect the child's growth and development process.

Parenting has a moderate correlation with behavior in children with ASD, authoritarian parenting is preferred by parents with children with ASD but parenting that forces the child, will increase the risk of behavioral disorders in children (Lin et al., 2023; Thanapalan et al., 2021). Permissive parenting does not affect ASD, but it will cause difficulties in handling behavior, as well as structured authoritarian parenting that lacks emotional support that can increase anxiety and aggression in children(Lin et al., 2023; Zhou & Yi, 2014).

Studies on parenting, nutritional status and sleep disorders are less found in Indonesia. Proper parenting in children with ASD can alleviate the symptoms of behavioral disorders, as well as sleep quality and nutritional status need to get attention from parents in order to maximize treatment in children with ASD. So this study aims to find out the picture of nutritional status, parenting style applied and sleep disorders experienced in children with ASD.

METHOD

This research is a descriptive-cross-sectional design. This research was carried out at SLB Mitra Ananda Colomadu, Karanganyar, Central Java. This research passed the ethical clearance procedure by the Health Research Ethics Commission of Sekolah Tinggi Ilmu Kesehatan Nasional No: 141/EC/KEPK/X/2024. The sample of this study was selected using the purposive sampling method with the following criteria: 1) children with autism diagnosis; 2) children

aged 7-12 years; 3) controlled autism conditions and no tantrums; 4) Mild Autism condition, no self-harm. To determine the condition of the respondents, the M-CHAT Screening questionnaire for autism was used which consisted of 23 questions. Sleep disorders were measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire, the implementation of parenting was measured by the Parenting Styles and Dimensions Questionnaire (PSDQ)and classified into Democracy Style (DS), Authoritarian Style (AS) and Permissive Style. Body heigh and weight measurements to determine the nutritional status of respondents. Data analysis technique using Pearson's Chi Square test.

RESULT

Data collection was carried out at SLB Mitra Ananda which is located in Colomadu, Karanganyar Regency, Central Java. The total number of respondents who met the criteria was 19 people with the distribution as follows:

Table 1 Respondent Distribution

	Frequency	Percentage
Sex		
Male	18	95%
Female	1	5%
Age		
7 – 8 y.o	7	35%
9-10 y.o	9	45%
11-12 y.o	3	15%
Nutritional Status		
Under	1	5%
Normal	16	84%
Over	2	11%
Sleep Disturbance		
Yes	12	63%
No	7	37%
Parenting Style		
DS	5	26%
AS	4	21%
PS	10	53%

Table 1 showed that 95% of respondents are male and 5% female consisting of 9-10 years old (45%), 7-8 years old 35% and 11-12 years old 15%. The nutritional status of children is normal at 84%, over 11% and low by 5%. Respondents with sleep disorders were 63% while 37% of respondents did not experience sleep disorders. The most applied parenting style is permissive parenting (53%), followed by democratic parenting (26%), while authoritarian parenting is 21%.

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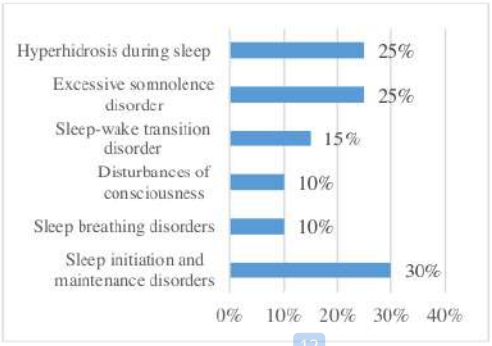

Diagram 1 Characteristics of sleep disorders

The characteristics of sleep disorders that occur in the most respondents are disturbances in initiating and maintaining sleep (30%), hyperhidrosis and excessive somnolence disorders (25%), sleep-to-wake transition disorders (15%) and disorders of consciousness and respiratory disorders experienced by 10% of ASD children respectively.

The data analysis is presented through the table below:

Table 2 Nutritional Status and Parenting Style

Parenting Style	Nutritional Status			*p value*
	Under	Normal	Over	
DS		5		
AS	1	3		.208
PS		8	2	

The table above illustrates the relationship between nutritional status and parenting. Democratic parenting was applied by parents by 26.31% with normal nutritional status (100%), authoritarian parenting 21% with the distribution of undernutrition status of 25% and normal nutritional status of 75%, while permissive parenting was 52.63% with normal nutritional status of 80% and overnutrition of 20%. Meanwhile, from the data analysis, a significance value of 0.208>0.05 was obtained, which means that there is no relationship between parenting and nutritional status in children with ASD.

Table 3 Nutritional Status and Sleep Disturbance

Sleep Disturbance	Nutritional Status			*p value*
	Under	Under	Under	
Yes	1	10	1	.587
No		6	1	

The table of relationships between nutritional status and sleep disorders that occur in children with ASD above shows that 50% of children with excess nutritional status have sleep disorders, while in normal nutritional status 37.5% have sleep disorders and children with undernutrition status do not experience sleep disorders. Meanwhile, from the results of the correlation test analysis seen from the p value of 0.587>0.05, the results were obtained that there was no relationship between nutritional status and sleep disorders in ASD children.

Table 4 Parenting Style and Sleep Disorders

Sleep Disturbance	Parenting Style			*p value*
	D	A	P	
Yes	3	2	7	.773
No	2	2	3	

The relationship between parenting and sleep disorders is described in table 4. Children who experience sleep disorders with democratic parenting style are 25%, autretive parenting is 16.67% and permissive parenting is 58.33%. Meanwhile, if you look at the p value of 0.773>0.05, there is no relationship between nutritional status and sleep disorders in children with ASD.

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CONCLUSION

In optimizing the growth and development of children with ASD, attention is needed in various factors. Parenting, nutritional status and sleep quality are some of the factors that need to be considered and treated children with ASD. From the results of the study, there was no significant relationship between nutritional status and parenting, there was no relationship between nutritional status and sleep disorders and there was no relationship between parenting and sleep disorders. However, these three things need to get attention for parents in accompanying their children's growth and development. Parents with good knowledge will influence parenting styles, including in arranging diets, especially food composition and scheduling of children's rest time so that they get good nutritional status and good sleep quality.

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