Indonesian Journal for Health Sciences
Vol. 6, No. 2, September 2022, pp. 24-35
ISSN 2549-2721 (Print), ISSN 2549-2748 (Online)

SPECIAL NEEDS CHILDREN NUTRITIONAL STATUS WITH GROSS MOTOR DELAY AGE 0-6 YEARS: AN OVERVIEW

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Article History:
Submitted: 07/01/2022
Accepted: 24/07/2022
Published: 16/09/2022

Keywords:
Autism spectrum disorder;
ASD;
Physical comorbidities

ABSTRAK

Abstract:
Malnutrition and disability are major global health problems. Malnutrition can cause to a variety of disabilities, and disability can contribute to malnutrition. This study aims to overview of special needs children nutritional status with gross motor delay age 0-6 years in the Regional Psychiatric Hospital of Sungai Bangkong. The design of this study was a cross-sectional descriptive study on 54 children with special needs in Psychiatric Hospital Sungai Bangkong Pontianak. The results showed that special needs children nutritional status in Down Syndrome is normal (63,7%), severely wasted (9,1%), wasted (27,3%). Cerebral Palsy obtained (50,0%) normal, wasted (33,3%), severely wasted (16,7%). Gross motor delay is (63,0%) normal, (14,8%) wasted, (3,7%) severely wasted, (11,1%) are possible risk of overweight, (3,7%) overweight, (3,7%) obesity. ADHD have normal nutritional status (100%). PDD NOS have wasted (33,3%), normal (33,3%), overweight (33,3%). This shows conclusion that red flag, risk factor of children before, during, after birth and maternal risk will influence nutritional status and gross motor development.

***Abstrak*:**
Malnutrisi dan disabilitas adalah masalah kesehatan global utama. Malnutrisi dapat menyebabkan atau berkontribusi pada beragam disabilitas dan sebaliknya, disabilitas dapat berkontribusi pada malnutrisi. Tujuan penelitian ini adalah untuk mengetahui gambaran status gizi anak usia 0-6 tahun dengan gangguan motorik kasar di RSJ Sungai Bangkong. Penelitian ini bersifat deskriptif cross sectional pada 54 anak berkebutuhan khusus di RSJ Sungai Bangkong. Hasil penelitian ini pada gambaran status gizi anak berkebutuhan khusus Down Syndrome adalah normal (63,7%) gizi buruk (9,1%), dan gizi kurang (27,3%). Cerebral Palsy didapat (50,0%) normal, gizi kurang (33,3%), gizi buruk (16,7%). Motorik kasar terlambat (63,0%) normal, (14,8%) gizi kurang, (3,7%) gizi buruk, (11,1%) beresiko gizi lebih, (3,7%) overweight dan (3,7%) obesitas. Status gizi anak GPPH normal (100%). Status gizi anak PDD NOS gizi buruk (33,3%), normal (33,3%), overweight (33,3%). Hal ini menunjukkan kesimpulan bahwa red flag, factor resiko anak sebelum, saat, setelah melahirkan dan resiko kehamilan mempengaruhi status gizi dan perkembangan motorik kasar.

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How to Cite:
S. Anniza, R. Andriani, P.E. Vinny, "Special Needs Children Nutritional Status With Gross Motor Delay Age 0-6 Years: An Overview", Indonesia. J. Heal. Sci., vol. 6, no. 2, pp. 24-35, 2022.

INTRODUCTION

Nutritional status is the health status of the balance between nutritional needs and intake. In 2013, Indonesia had serious health problems where the prevalence of underweight in children under five was still 12,1%. Among the 33 provinces, there are 16 provinces that are in the serious category, and 4 provinces are included in the critical category, one of which is West Kalimantan[1]. Based on the 2015 Nutrition Status Monitoring (PSG) data, Pontianak City has a prevalence of malnutrition, approximately 22,7%[2].

Children with special needs are children who require special treatment in connection with developmental disorders and abnormalities experienced by the child. Children with special needs are grouped according to their abnormalities, one of which is physical or motor abnormalities [3]. According to the United Nations Emergency Children's Fund (UNICEF) in 2011, data on the high incidence of growth and development disorders in children under five, especially motor development disorders, was 27,5% or as many as 3 million children. Toddlers in Indonesia, around 16% reported to have developmental disorders in the form of brain development disorders, hearing problems and motor disorders[4].

Nutrition is one of the things that can affect a child's development, one of which is gross motor skills. Although poor nutrition can be a cause of disability, it can also be a consequence. Associated physical disorders such as Cerebral Palsy can interfere with the mechanism of food consumption; certain conditions, such as cystic fibrosis, can interfere with nutritional intake; and some infants and children with disabilities may require special diets or caloric intake to maintain a healthy weight [5]. Children with Cerebral Palsy have a risk of poor nutritional status which only gets 76% of the total energy intake from the recommended food intake and more than 57% of children experience a total energy intake of less than 80% so that they experience more severe disabilities and have a z-score and lower Gross Motor Function Classification System (GMFCS) [6]. The nutritional status of Down Syndrome children shows that in the past nutritional history, as many as 70% of respondents experienced long-term malnutrition, indicating that growth in children with suspected Down Syndrome is slower than normal children[7]. Based on the results of research on gross motor development in toddlers aged 1 - 5 years in Lubuk Muda Village, Bengkalis Regency, it was found that children with abnormal nutritional status with inappropriate gross motor development were 85%, while toddlers with abnormal nutritional status but appropriate gross motor development were 15%[8]. Dyah and Ina's research shows that in the past nutritional history, as many as 70% of respondents experienced severe malnutrition long so that it shows that growth in children with suspected Down Syndrome slower than normal children. Meanwhile, in Inna and Rona's research, shows that 92,2% of respondents have normal nutritional status, 7% are undernourished less, and 0,1% are malnourished[9].

Based on the description above, the researcher wants to find out the overview of the nutritional status of children with special needs with delayed gross motor development aged 0-6 at the Regional Psychiatric Hospital of Sungai Bangkong, Pontianak City.

RESEARCH METHOD

The type of research design is descriptive method with a cross sectional approach to obtain an overview of the nutritional status of children with special needs with delayed gross motor development aged 0-6. This research was conducted on pediatric patients with special needs who are undergoing therapy at the outpatient clinic for children with special needs and physiotherapy at the Regional Psychiatric Hospital of Sungai

Bangkong, Pontianak City. The data used are primary data from anthropometric results taken using height measuring instruments and weight scales at the Mental Hospital of Sungai Bangkong from patient collection in September 2018 – January 2019.

RESULTS AND ANALYSIS

The data taken included the information about the delayed gross motor development, nutritional status, physical examination and child development, history of pregnancy and childbirth, risk factors for children and mothers.

Table 1.
Distribution of Delayed Gross Motor Development

Motor Development Delays Based on Red Flag	N	%
Red Flag 4 months	2	3,7
Red Flag 6 months	3	5,6
Red Flag 9 months	1	1,9
Red Flag 12 months	6	11,1
Red Flag 18 months	10	18,5
Red Flag 24 months	18	33,3
Red Flag 36 months	10	18,5
Red Flag 48 months	3	5,6
Red Flag 60 months	1	1,9
	54	**100**

Based on the research results, it was found that the delay in gross motor development based on red flags was the most red flags aged 24 months, namely 18 people (33,3%) then red flags 18 and 36 months, namely 10 people (18,5%), 12 months red flags were 6 people (11,1%), red flag 6 and 48 months, namely 3 people (5,6%), red flag 4 months, namely 2 people (3,7%), and red flag 9 and 60 months, namely 1 person (1,9%).

Motor development is development that is carried out according to the child's age based on milestones. If the child does not meet the developmental milestones, then the child enters the red flag. Children who come to the RSJ for the first time on average are not in accordance with developmental milestones, so that child is included in the red flag. Red flag is the age limit when the child reaches the stage of child development which is worrying if at that age the child has not been able to reach that stage of development. This age limit is used to predict the presence of abnormal-ities in the child, so that we are aware if the child has motor development delays[3]. This is in accordance with the theory that the red flag according to Lipkin, children aged 3,6 months can already roll over from prone to supine, the red flag on rolling over falls at the age of 6-8 months and there are many children with the main complaint that they can not do anything at this age range. 8-36 months. In gross motor delay, lying down is a milestone of 3-6 months of age and the red flag is 9 months and this is in accordance with the results of the study where patients with the main complaint of late lying down were in the age range of 19-38 months. The results of the study on late sitting children were in the age range of 8-38 months where the red flag sitting without being supported was 8-10 months. Children who are late standing are in the age range of 16-69 months where the red flag is 12 months. Children who are late for walking are in the age range of 19-49 months where the red flag for walking is 15-18 months[10]. Research conducted by Chen showed a high sensitivity of parental complaints regarding speech, motor and behavioral development of children in determining child delays. Speech, motor, and behavioral development are clear and more easily detected by parents or caregivers. However, there are some parents who do not have knowledge about normal child development, this may be influenced by the level of parental education[11].

Table 2.
Distribution of Diagnostic Conclusions

Conclusion Diagnosis	N	%
Down Syndrome	11	20,4
Cerebral Palsy	12	22,1
Resistance gross motor development	27	50,0
GPPH	1	1,9
PDD-NOS	3	5,6
	54	**100**

Based on the conclusion of the diagnosis, it was found that the most children with gross motor development barriers were 27 people (50,0%), followed by children with Cerebral Palsy as many as 12 people (22,1%), Down Syndrome 11 children (20,4%), children with PDD-NOS as many as 3 people (5,6%), and children with ADHD as many as 1 person (1,9%).

In this case, delays in gross motor development in children are not only psychosocial factors, either stimulation or motivation to learn, but are also influenced by family factors, namely parents' education and income, parenting patterns, and biological factors from child health care, vulnerability to disease, chronic health conditions, as well as physical factors. Some of the delays in gross motor development in children are caused by lack of stimulation by parents or due to chronic health due to seizures due to high fever experienced by children. This is a risk factor that causes children's gross motor development to be delayed[3].

Table 3.
Distribution of Nutritional Status by Red Flag

Nutritional Status weigt/ height	Red Flag (Months)									
	4	**6**	**9**	**12**	**18**	**24**	**36**	**48**	**60**	**Total**
Malnutrition	0	0	0	0	1	1	2	0	1	5
	0,0%	0,0%	0,0%	0,0%	1,9%	1,9%	3,7%	0,0%	1,9%	9,3%
Malnutrition	0	2	1	2	2	1	3	0	0	11
	0,0%	3,7%	1,9%	3,7%	3,7%	1,9%	5,6%	0,0%	0,0%	20,4%
Normal	2	1	0	4	7	12	5	1	0	32
	3,7%	1,9%	0,0%	7,4%	13,0%	22,2%	9,3%	1,9%	0,0%	59,3%
More Nutritional Risk	0	0	0	0	0	2	0	1	0	3
	0,0%	0,0%	0,0%	0,0%	0,0%	3,7%	0,0%	1,9%	0,0%	5,6%
Overweight	0	0	0	0	0	2	0	0	0	2
	0,0%	0,0%	0,0%	0,0%	0,0%	3,7%	0,0%	0,0%	0,0%	3,7%
Obesity	0	0	0	0	0	0	0	1	0	1
	0.0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	1,9%	0,0%	1,9%
Total	**2**	**3**	**1**	**6**	**10**	**18**	**10**	**3**	**1**	**54**
	3,7%	**5,6%**	**1,9%**	**11,1%**	**18,5%**	**33,3%**	**18,5%**	**5,6%**	**1,9%**	**100%**

Based on the results of the study, most of the children with normal nutritional status were 32 people (59,3%) with motor development delays were in red flag 4 months as many as 2 people (3,7%), red flag 6 months 1 person (1,9%), red flag 12 months 4 people (7,4%), red flag 18 months 7 people (13,0%), red flag 24 months 12 people (22,2%), red flag 36 months 5 people (9,3%), and red flag 48 months 1 person (1,9%). Children with a description of the nutritional status of obesity are at least 1 person (1,9%) who has a delay in gross motor development based on the red flag of 48 months.

There is a difference in the number of children with gross motor impairment, where in normal nutritional status many children experience red flags at the age of 24 months, while in children with poor nutritional status and malnutrition many children experience red flags at 36 months of age. Nutritional status is one of the factors that influence development. Malnutrition that occurs at an early age can cause tissue damage, growth retardation,

decreased synapses, inhibited myelination and decreased development of brain maturity[12]. From the results of this study, most of the children had good or normal nutritional status, this may be related to socioeconomic status. high levels of parental education and high parental education, so that the need for nutrients is met, nutrients that are fulfilled and balanced will affect the nutritional status of children[13]. Underweight nutritional status is in the second position, this is in accordance with Caesar's research where respondents who have thin nutritional status mostly have late gross motor development 64,3%, respondents who have very thin nutritional status all (100%) experience gross motor development delay. The nutrients consumed will affect the nutritional status of children. The period of children under five years is an important period in the growth and development of children because the basic growth that takes place in toddlerhood will influence and determine the next development of children. In growth and development, children need nutrients so that the process of growth and development goes well [14]. Differences in the nutritional status of children have different effects on each child's growth, so that if the balanced nutrition consumed is not fulfilled, the achievement of growth and development of children, especially good gross motor development will be hampered [15].

Table 4.
Distribution of Nutritional Status based on Conclusions of Diagnosis

Nutritional Status BB/TB	Conclusion Diagnosis					Total
	Down Syndrome	Cerebral Palsy	Barriers to Gross Motor Development	GPPH	PDD-NOS	
Malnutrition	1 9,1%	2 16,7%	1 3,7%	0 0,0%	1 33,3%	5 93%
Malnutrition	3 27,3%	4 33,3%	4 14,8%	0 0,0%	0 0,0%	11 20,4%
Normal	7 63,6%	6 50,0%	17 63,0%	1 100%	1 33,3%	32 59,3%
More Nutritional Risk	0 0,0%	0 0,0%	3 11,1%	0 0,0%	0 0,0%	3 5,6%
Overweight	0 0,0%	0 0,0%	1 3,7%	0 0,0%	1 33,3%	2 3,7%
Obesity	0 0,0%	0 0,0%	1 3,7%	0 0,0%	0 0,0%	1 1,9%
Total	**11** **100%**	**12** **100%**	**27** **100%**	**1** **100%**	**3** **100%**	**54** **100%**

The description of the nutritional status of weight/height based on the conclusion of the diagnosis obtained that the most data was the nutritional status of children with Down syndrome, 7 children with normal nutritional status (63,6%), 1 child (9,1%) poor nutritional status, and 3 children (27,3%) undernourished. Children with Cerebral Palsy got 6 children (50%) with normal nutritional status, 4 children (33,3%) with less nutrition, and 2 children (16,7%) with poor nutrition. Children with impaired gross motor development obtained 17 children (63,0%) normal nutrition, 4 children (14,8%) under-nourished, 1 child (3,7%) malnourished, 3 children (11,1%) at risk of overnutrition, 1 child (3,7%) overweight and 1 child (3,7%) was obese.

According to research Felicia [16] in 2012, found the nutritional status of children with cerebral palsy with 27 children as the subject, the results obtained were 88,9% (24 children) with poor

nutritional status and 11,1% (3 children) with poor nutritional status.In addition, these results are in accordance with the theoretical basis, namely in children with cerebral palsy there are motor disturbances that result in feeding disorders, chewing disorders, unable to swallow, reflexes become hyperactive, and inability to control when eating[17]. Children with Down's Syndrome has impaired nutritional status due to eating disorders such as difficulty sucking and chewing from an early age which is influenced by brain damage so that the nutritional status of children tends to be abnormal. Curtin et al stated that the incidence of obesity (30,4%) was higher in autistic children compared to children without autism (20,3%) and overweight (31,9%) occurred in autistic children in America[9], [18].

Table 5.
Distribution of Physical Examination and Child Development (N=54)

Physical examination and development	N	%
Vision		
Normal	46	85,2
Suspect interference	8	14,8
Hearing power		
Normal	50	92,6
Suspect interference	4	7,4
Autism		
Normal	26	48,1
Low risk	3	5,6
Other disorders	25	46,3
GPPH		
Yes	1	1,9
Not	53	98,1

The results of this study showed that most children with normal vision were 46 people (85,2%) and 8 people (14,8%) suspected that there was a disturbance. For hearing itself, the results obtained from this study are as many as 50 people (92,6%) were normal and 4 people (7,4%).

Children who are suspected of having hearing loss, in terms of delayed motor development, especially children with cerebral palsy experience visual impairment and hearing loss caused by disorders of the nervous system in the brain, so that the eyes look crossed or strabismus where the eyes do not look in line because there are differences in eye muscles and left, causing symptoms of double vision, or the eye can not see. It can also occur with a child's hearing where a child with CP can be impaired[19]. In children with DS, there are visual disturbances due to changes in the lens and cornea that cause the eyes to often become slanted with the central angle forming epicanthal folds (80%), white brush field spots around the circle around the iris (60%), medial epicanthal folds, kerato-conus, strabismus, cataract (2%), and retinal detachment [20].

Based on the results of the study, most of the normal children are 26 children (48,1%) included normal criteria and had no autistic symptoms, followed by 25 children (46,3%) with other disorders, and 3 children (5,6%) had low risk of autism. In children with autism symptoms, delay Gross motor development is partly due to the fact that gross motor skills emerge and develop while playing, learning, and interacting with or without playmates. So that limitations in motor skills performed by toddlers can create a cycle in which poor motor skills can hinder social interaction, and poor social interactions can limit motor skill development[21]. In this study, most of the children did not suffer from attention deficit disorder and hyperactivity disorder (GPPH), as many as 53 people (98,1%) and 1 person (1,9%) had the possibility of having ADHD. fine motor and visual motor, so that it is in accordance with research where there is only 1 child who has ADHD[22].

Table 6.
Distribution of Pregnancy and Childbirth History (N=54)

Distribution of pregnancy and childbirth history	N	%
LBW		
Yes	12	22,2
No	42	77,8
Premature		
Yes	12	22,2
No	42	77,8
Immunization		
Not immunized	3	5,6
Incomplete	18	33,3
Complete	33	61,1
Pregnancy complications		
Yes	11	20,4
No	43	79,6

The results of the study for children with low birth weight (LBW), it was found as many as 42 people (22,2%) were not LBW and 12 children (77,8%) had LBW.

Low birth weight is an indication that the nutrients that are circulated into the body are not optimal so that the development of some parts is not optimal [23]. A total of 42 children (77,8%) were patients who were not premature or at term and 12 (22,2%) were premature infants. The results of this study are in line with previous studies which state that infants with a history of premature or low birth weight are at risk of experiencing disturbances in cognitive development and motor development[24]. In this study, most of the children had no history of maternal complications, namely 43 people (79,6%) and 11 people (20,4%) children with a history of maternal complications during pregnancy. Complications that occur during pregnancy will affect the development of the baby in the womb and is one of the factors that affect child development. Mothers who have a history of pregnancy complications have a 5.587 times risk of experiencing childbirth complications compared to mothers who do not have a history of pregnancy complications [25]. Based on the results of the study, total of 33 children (61,1%) had complete immunization and 18 children (33,3%) did not complete immunization, and 3 children (5,6%) did not immunize. In a study conducted by Whinnie, basic immunisation status also affects nutritional status (weight/height). The proportion of under-five children who were underweight or very thin was more found in children under five with incomplete basic immunization status than in complete basic immunization status so that children under five with incomplete basic immunization status were more at risk of being thin and very thin [26]. Case-control study in Bangladesh, also found that children with incomplete immunizations were twice as likely to experience stunting, underweight and undernourished compared to children who were fully immunized. In this study, many patients had incomplete immunizations due to underweight children. In Abedi and Srivastava's study [27] it was found that children aged 1-5 years who had complete immunization status showed better nutritional status than those who were not fully immunized. Research by Langkamp et al in the United States in 2001 found that infants with LBW were at risk for delayed immunization compared to infants with normal weight [28].

The most common risk factor in children found in respondents was children with seizures as much as 14 children (4,2%), followed by breathing hyperbilirubinemia (26,5%), asphyxia (23,5%), breathing disorder syndrome (14,7%), and entered ICU/NICU (11,8%).

Table 7.
Distribution of Child Risk Factors

Risk Factors for Infants and Children	Conclusion Diagnosis				Total
	Down Syndrome	Cerebral Palsy	Gross Motor Impairment	PDD NOS	
Risk Factors Before Childbirth					
Breech	0	1	2	0	3
	0,0%	2,9%	5,9%	0,0%	8,8%
Twin Death	0	1	1	0	2
	0,0%	2,9%	2,9%	0,0%	5,9%
Legs wrapped in umbilical cord	0	0	0	1	1
	0,0%	0,0%	0,0%	2,9%	2,9%
Risk Factors During Childbirth					
Hyperbilirubinemia	4	1	4	0	9
	11,8%	2,9%	11,8%	0,0%	26,5%
Seizures	0	4	9	1	14
	0,0%	11,8%	26,5%	2,9%	41,2%
Asphyxia	0	4	4	0	8
	0,0%	11,8%	11,8%	0,0%	23,5%
Cyanosis	0	1	2	0	3
	0,0%	2,9%	5,9%	0,0%	8,8%
Risk Factors After Childbirth					
Breathing Disorders	0	1	4	0	5
Syndrome	0,0%	2,9%	11,8%	0,0%	14,7%
Hydrocephalus	0	0	3	0	3
	0,0%	0,0%	8,8%	0,0%	8,8%
Trauma	0	2	1	0	3
	0,0%	5,9%	2,9%	0,0%	8,8%
Bleeding on the Head	0	1	0	0	1
	0,0%	2,9%	0,0%	0,0%	2,9%
Edema After Birth	0	0	1	0	1
	0,0%	0,0%	2,9%	0,0%	2,9%
Sepsis	1	1	0	0	2
	2,9%	2,9%	0,0%	0,0%	5,9%
Bronchopneumonia	0	0	1	0	1
	0,0%	0,0%	2,9%	0,0%	2,9%
Enter ICU/NICU	0	1	3	0	4
	0,0%	2,9%	8,8%	0,0%	11,8%
Antibiotic Therapy	0	0	2	0	2
	0,0%	0,0%	5.,9%	0,0%	5,9%
Assistive Delivery	0	1	0	0	1
	0,0%	2,9%	0,0%	0,0%	2,9%
Leaky Heart	1	1	0	0	2
	2,9%	2,9%	0,0%	0,0%	5,9%
Cranium Disorders	0	1	0	0	1
	0,0%	2,9%	0,0%	0,0%	2,9%
Don't Consume Breast Milk	1	0	0	0	1
	2,9%	0,0%	0,0%	0,0%	2,9%
Total	**5**	**9**	**19**	**1**	**34**
	14,7%	**26,5%**	**55,9%**	**2,9%**	**100%**

In this study, children who experienced seizures were children diagnosed with CP and children who did experience impaired gross motor development due to seizures due to high fever. In the study of Karen et al, there was a relationship between epileptic seizures and the type of cerebral palsy. This study showed that patients with cerebral palsy with a diagnosis of quadriplegia were highly correlated with epilepsy[29]. Then followed by children who had a history of

hyperbilirubinemia as many as 9 children (26,5%) where there are 4 children with Down syndrome, 4 children with gross motor development, and 1 child with cerebral palsy. In newborns who have jaundice and high bilirubin levels can be at risk of hyperbilirubinemia and cause severe motor damage and cause cerebral palsy [30].

Children who have a history of asphyxia as many as 7 children (23,5%). Neonatal asphyxia is related to child development. Children with asphyxia are at risk of 2,11 times greater suspect development than children who do not experience asphyxia, the birth of a baby with asphyxia at the time of delivery increases the risk of developing poor toddlers 7,8 times higher than those with good development[31]. There are risk factors for birth canal trauma as many as 3 people (8,8%) in children with Cerebral Palsy where complications of childbirth in infants such as head trauma and asphyxia can cause brain tissue damage[32].

Table 11.
Distribution of Maternal Risk Factors

Risk Factors for mother	Conclusion Diagnosis				Total
	Down Syndrome	Cerebral Palsy	Gross Motor Impairment	PDD NOS	
Spots When Pregnant	0 0,0%	0 0,0%	2 10,0%	0 0,0%	2 10,0%
High fever	1 5,0%	0 0,0%	1 5,0%	0 0,0%	2 10,0%
Red Spot Fever	1 5,0%	0 0,0%	1 5,0%	0 0,0%	2 10,0%
Pregnancy Trauma	0 0,0%	3 15,0%	1 5,0%	0 0,0%	4 20,0%
Infection in Mother	0 0,0%	0 0,0%	1 5,0%	0 0,0%	1 5,0%
Green amniotic fluid	0 0,0%	1 5,0%	1 5,0%	0 0,0%	2 10,0%
Torch	1 5,0%	1 5,0%	1 5,0%	0 0,0%	3 15,0%
Low blood pressure	0 0,0%	0 0,0%	2 10,0%	0 0,0%	2 10,0%
Hypertension and Pre-eclampsia	0 0,0%	1 5,0%	1 5,0%	1 5,0%	3 15,0%
Miscarriage History	0 0,0%	0 0,0%	2 10,0%	0 0,0%	2 10,0%
Hyperemesis Gravida	0 0,0%	1 5,0%	1 5,0%	0 0,0%	2 10,0%
Pelvic Head Disproportion	1 5,0%	0 0,0%	1 5,0%	0 0,0%	2 10,0%
Enter ICU	0 0,0%	0 0,0%	1 5,0%	0 0,0%	1 5,0%
ETC	0 0,0%	0 0,0%	3 15,0%	0 0,0%	4 20,0%
Total	**3** **15,0%**	**5** **25,0%**	**11** **55,0%**	**1** **5,0%**	**20** **100,0%**

There are many risk factors that can occur in the mother, for higher risk is trauma during pregnancy in the mother is 4 people (20,0%), followed by hypertension and eclampsia (15,0%).

In early pregnancy (first trimester), major trauma to the abdomen can occur from a fall with the stomach hitting the ground or the floor, and it can also result from a punch or a direct kick to the

abdomen. Although the occurrence is rare, this kind of trauma can lead to miscarriage (abortion, miscarriage). The main signs are vaginal bleeding, uterine contractions accompanied by the release of pregnancy products Blunt trauma that occurs at an older gestational age can result in uterine rupture, abruptio placentae, premature rupture of membranes, preterm birth, maternal and/or fetal death[33]. In the risk factors for mothers where mothers took ototoxic drugs in the 1st trimester and mothers who experienced TORCH as many as 3 people (15%). The use of contra-ceptive drugs when a woman experiences an unwanted pregnancy, such as a failed abortion attempt, is very likely to have a baby born with defects. Infection in the first and second trimesters by TORCH (Toxoplasma, Rubella, Cytomegalovirus, Herpes simplex) and STDs (Sexually Transmitted Diseases) and other viral diseases can cause fetal abnormalities such as cataracts, muteness, deafness, micro-cephaly, mental retardation and congenital heart defects. There is a risk factor for maternal stress during pregnancy in 1 person (4,5%) where stress experienced by the mother during pregnancy can affect fetal growth and development, including congenital defects and psychiatric disorders [3].

Because there are risk factors such as baby boys with twin deaths as many as 2 people (6,1%), breech births as many as 3 people (8,8%), mothers with hypertension 2 people and pre-eclampsia 3 people (15%), and bleeding in the head 1 person (2,9%) is a risk factor for children who have cerebral palsy, where this risk factor does occur in respondents who are diagnosed with cerebral palsy so that these respondents do experience obstacles to gross motor development[3].

CONCLUSION

Based on the results of the study, data analysis, and discussion in the previous chapter, the researchers drew the following conclusions:

1. Overview of the nutritional status of children with special needs based on gross motor delay Red Flag at Sungai Bangkong Hospital are 59,3% normal (weight for age).
2. A total of 33,3% of children experienced some type of gross motor development delay such as running, jumping, kicking, throwing a ball, and climbing stairs without holding on to Red Flag at the age of 24 months.
3. Regarding the risk factors that affect the delay in gross motor development, 42,4% of children have experienced seizures, 18,2% of mothers have experienced pregnancy trauma. It also shows that risk factor of children before, during, after birth and maternal risk will influence nutritional status and motor development.

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