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DHA CONSUMPTION DURING PREGNANCY WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) IN CHILDREN IN YOGYAKARTA INCLUSIVE SCHOOL

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Background: Attention deficit disorders and hyperactivity disorder (ADHD) is a psychiatric disorder or behavioral disorders the most widely encountered, either at school or at home. This disorder is one disorder that is often found on children's behavioral disorders. During this past year the disorder, ADHD a problem that got a lot of concerns and a major concern among medical or general public. This study aims to look at the relationship between the consumption of DHA during pregnancy with Attention Deficit Hyperactivity Disorder (ADHD) in children in elementary school Inclusion in Yogyakarta. *Method*: this research using survey research with cross-sectional design. *Population*: mother who has need special children. *Sample*: this research using total sampling, which is the mother who has 23 children in special need. Measuring instrument research with questionnaires and data analysis using a chi - square test. *Results*: showed the significance of p-values 0.432 ($p > 0.05$) on the children in need special. The risk of ADHD happening on the children in need special 0,35. *Conclusion*: of this research is the consumption of DHA during pregnancy no significant relationship with the occurrence of ADHD in elementary school inclusion, this study can't separate from risk of bias and the subject in small number.

Keywords: consumption of DHA, Attention Deficit Hyperactivity Disorder (ADHD)

1. INTRODUCTION

Attention deficit disorders and hyperactivity disorder (ADHD) is a psychiatric disorder or behavioral disorder most often found, either at school or at home. This disorder is a common disorder in child behavioral disorders. In recent years ADHD to be a problem that gets a lot of attention and a major concern among the medical or general public (Saputro, 2005).

Bradley & Golden (Jeffrey, Nevid, et al, 2005) says the same thing, that ADHD is a psychological problem most prevalent lately, about 3-10% in the United States, 3-7% in Germany, 5 -10% in Canada and New Zealand, in Indonesia the number of events still have not found an exact figure, though it looks pretty much abnormality occurs and is often found in children of preschool and school age (Judarwanto, W, 2006).

Meanwhile, according to Saputro (2005) in Indonesia, the population of primary school children is 16.3% of the total population is 25.85 million children. Based on these data the additional estimated new cases of ADHD as many as 9000 cases. Most parents or teachers still consider children with the disorder as children "naughty" or "lazy". In fact, children with the disorder if it does not get the proper help, will have difficulty learning, poor learning achievement,

school failure, disturbing behavior, attitudes seem difficult to be accepted by their environment and even tend to be preferred by parents or teachers.

ADHD affects approximately 8-10% of school-age children. Boys are more likely to develop the disorder than girls (Anonymous, 2013). Prevalence (depending on the definition and assessment tool): From 0.1% to 5%, the majority of research groups in the 2% to 3%. Sex ratio: 6 to 9 men to 1 woman. Familial or genetic patterns still required a lot of research. Allegedly incidence is higher in first-degree relatives. Attention very sensitive to malfunctioning of the central nervous system (CNS) as well as environmental stress (Setio, 1997).

Theoretically, it is known that some of the other causes of ADHD are heredity, exposure to environmental toxins, drug abuse and a mother who smoked (Anonymous, 2013). There is also the thought that ADHD is caused by some food substances such as salicylates and preservatives have the potential to form a hyperactive behavior in children, mothers who consume alcohol, exposed to X-rays during pregnancy diet of children, as well as parenting (Aulia, 2010).

2. RESEARCH METHODOLOGY

This study uses an analytical research with survey research methods, namely a study conducted without any intervention on the subject of research (society). The method used by the cross-piece design (cross-sectional) is research to study the dynamics of the correlation between these factors with effects, with the approach, observation or the collection of data at a time at a time (point time approach).

The population in this study were mothers who have children with special needs in Elementary School Inclusion Ibu Pawiyatan Yogyakarta. In this study, the sampling is done by total sampling method for the special need children. Retrieval of data subjects is done by taking the total number of mothers who have children with special needs in the schools selected.

Data collection tool used is a questionnaire in the form of written questions to uncover the characteristics of respondents and the category of ADHD in children who filled immediately after receiving an explanation and the respondent agreed. The collection of data for determining the type of ADHD children obtained through the diagnosis established by researchers based questionnaire ADHD-Child Behavior adapted from DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition), and have been tested for validity and reliability (Cronbach's Alpha value = 0.857) in 10 parents / caregivers children with ADHD are different. ADHD Child Behavior Questionnaire-containing criteria for each type given to mothers / caregivers of children with ADHD to be filled based on the symptoms that are owned by children who demonstrated for 6 months tramstop. Data analysis was performed using SPSS 17.0 computer with the device. Univariate analysis to analyze the proportion or percentage of the frequency distribution of two variables. Analysis of the results of statistical tests (chi-square test) to determine the relationship between the two variables is meaningful or not meaningful.

3. RESULTS

Table 1. Frequency Distribution Consumption Maternal DHA supplementation With children in special needs

No	Consumption Maternal DHA supplementation	N	Percentage (%)
1.	Yes	19	82,6
2.	No	4	17,4
	Total	23	100.0

Table 2. Frequency Distribution incidence of ADHD the child in special needed

No	ADHD in the child with special needed	N	Percentage (%)
1.	More than 3 disruption	20	87
2.	2 disruption or less	3	13
	Total	23	100.0

Table 3. Distribution Relationship Risk Factors Cross Table between Mothers of children in special needs with the incidence of ADHD

		ADHD							
		More than 3 disruption		2 disruption or less		Total		p-values	Risk
		N	%	N	%	N	%		
DHA supplemen	1	2	11	17	89	19	83		
	2	1	25	3	75	4	17	0,435	0,35
Total		16	70	7	30	23	100		
Genetic	1	0	0	1	100	1	4		
	2	3	14	19	86	22	96	0,692	1,15
Total		16	70	7	30	23	100		
X-Ray	1	1	25	3	75	4	17		
	2	2	11	17	89	19	83	0,435	2,8
Total		16	70	7	30	23	100		
Head trauma	1	0	0	5	100	5	22		
	2	3	17	15	83	18	78	0,328	1,2
Total		16	70	7	30	23	100		

Data Sources: Primary data processed in 2015

4. DISCUSSION

4.1. The consumption of DHA during pregnancy

Mothers who have children with special needs as many as 19 people (85%) are used when pregnant consume DHA supplements. Docosahexaenoic acid (DHA) is a polyunsaturated fatty acid chain length. DHA is an essential fatty forming the brain, the retina of the eye and the heart. DHA is required during the period of rapid brain development (during pregnancy up to 18 months after birth). DHA helps the baby to coordinate between the eye and the hand, develop motor skills and increasing the focus or attention. DHA also helps babies to sleep more soundly. Noteworthy is the ratio of DHA and AA. High levels of DHA in the blood reduces the formation of AA. Some cases have been reported bleeding or hemolysis (rupture of red blood cells). The content of AA-DHA will work better when in synergy with iron in the formation of the brain (Koeletzko, 2007).

4.2. The incidence of ADHD in children

Children with Attention Deficit Hyperactivity Disorder (ADHD) often experience impaired concentration in their daily lives, such as when the learning process. Understanding hyperactivity According to Marlina, (2008) was not able to keep quiet, that behavior has a tendency perform an excessive activity, both verbal motoric. According to Marlina, (2008) ADHD is a behavior that develops imperfectly and occur in children and adults. Behavior is the form of lack of ability in terms of paying attention, impulse control and motor control. Such circumstances become a

problem for children (patients) particularly in the focus on the subjects that will cause difficulty in the classroom.

4.3. Relationship DHA consumption during pregnancy with incidence of ADHD in children

Results showed mothers of children with special needs who consume DHA supplements during pregnancy and this time, their child had ADHD as much as 2 people (11%). Results of data analysis chi-square value of asym. Sig .435 ($p > 0.05$) so that H0 is accepted, which means there is no significant relationship between maternal DHA supplementation during pregnancy on the incidence of ADHD in children. A risk value of 0.35 means that mothers who took DHA supplements 0.35 times more at risk of having a child with ADHD than those who do not consume DHA.

The experts assume that ADHD etiology neurochemical disorder because many patients with ADHD respond to stimulant drugs known as central nervous system (CNS). Other predisposing factors include exposure to toxins, drugs, chronic otitis media, head trauma, perinatal complications, neurological infections, and mental disorders. Genetic inheritance is unknown (Muscari, 2005).

The etiologic factor of several studies indicates a disturbance of blood perfusion in certain areas in hyperactive children, namely in the area striatum, an orbital-prefrontal, orbital-limbic brain regions, especially the right-hand side (Aulia, 2010).

The toxic factor can be caused by several food substances such as salicylates and preservatives have the potential to form a hyperactive behavior in children, because the lead levels of lead in the blood serum of children will increase. In addition, mothers who smoke and consume alcohol, exposed to X-rays during pregnancy, childbirth can also candidates hyperactive children (Aulia, 2010).

Genetic factors of several studies found a high correlation of the hyperactivity that occurs in families with hyperactive children. Approximately 25-35% of the parents and brother of his childhood will decrease hyperactivity in children. It is also seen in twins (Aulia, 2010).

Results of the study are not consistent with the theory put forward Baihaqi and Sugiarmin (2006) there are three factors that influence ADHD, namely:

a. Genetic factors

Some findings indicate the role of specific genes in the dopamine system in ADHD is interesting and in line with the model states that decreased dopaminergic activity is very influential in eliciting behavioral symptoms of ADHD-symptoms.

b. Factor Neurological

This factor was not affecting directly affect or relate to ADHD symptoms, while the conditions are: (a) events after birth; (b) the content of lead poisoning; (c) Impaired language and learning; (d) The decline in the ability of children with ADHD on neuropsychological tests associated with prefrontal lobe function.

c. Factor diet, allergies, substance tin

A popular view in the 70s and 80s, that the additives in food cause hyperactivity and inattentive. The additives may be additional flavorings, preservatives, and sugar which are used mothers.

Limitations of this study are during data collection, a questionnaire was distributed to students to be filled by his mother. Questionnaires taken home and then returned again the next day after completion answered, do not rule out the possibility of respondents dishonest. This raises the Bayes on research. The data collection with questionnaires is subjective so highly dependent on the accuracy of data on the honesty of respondents. The sample in a small number is making it less representative. Researchers did not examine closely the results of medical records or therapies that have been obtained by children with special needs during this period.

5. CONCLUSIONS

Overall, results of data analysis chi-square test mothers who have children in special needs who consume DHA supplements while pregnant p-values 0.435 ($p > 0.05$) so that hipotesis null is accepted, which means there is no significant relationship between maternal DHA supplementation during pregnancy as the incidence of ADHD in children. Based on the above conclusion can be given suggestions as follows:

For the Principal and the teachers in Elementary School Ibu Pawiyatan Tamansiswa, the results could be an input for accompanying teachers who help students with special needs in order to match the types of interference experienced by a given treatment or assistance that is expected to lead students to remain active and can follow the learning activities well.

For further research, should be in continuing research to uncover the factors that affect the incidence of ADHD apart from factors DHA supplements with the emphasis on variable and use better methods to dig deeper information to obtain a more comprehensive research.

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