ABSTRACT

Impaired child development is characterized by the slow maturation of nerve cells, motor movements, lack of intelligence and slow in growth. Ministry of Health Republic of Indonesia reports that there are 27.7% children having lower-cognitive development. This status occurs in children who are often abandoned by both parents, living in care and unbalanced intake, as it is raised by Adriani. A research was made to analyze the relationship of nutritional stunting, history of parenting and nutrition upon history of the disease and cognitive development of early childhood children in Abepura District 2016. The study followed a descriptive, analytic, and case-control approach. The population includes children in their early childhood especially in 4-6 years. Respondents are mothers who have children in early childhood. Anthropometric data collection techniques, are used with interviews and Food Recall. The study followed the quantitative research method. The results revealed that nutritional stunting has a strong relationship with cognitive development; insignificant relationship with history of parenting mother and cognitive development; insignificant relation with nutrient intake and cognitive development of children; and insignificant relation
with history of childhood diseases in cognitive development of children.

Keywords: Stunting, intake, early childhood, Cognitive Development, health

INTRODUCTION

Background of the study

Health is an integral part of organized human progress. The purpose of health efforts among children is basically for survival, that ensures an improved quality of life, carrying balanced weight age of physical, mental, emotional and social growth. (MoH RI 2015). Survival and child development are highly dependent on the affection and attention of parents towards the child. This will be presented by surrounding environment especially family and community. Surrounding environment will determine the quality of the person and the life of children in the future. Active role of the parents has a direct role in creating an environment (Siti & Septriaini, 2012).

The results of the study conducted in Indonesia found that there are many children who are abandoned parents at home or daycare without parents, disregarded the child’s development. Though children at the age of five are in the future development of the "golden age" in which all aspects of child development will grow rapidly (Adriani, 2013). Consequences of malnutrition among children in the long term would lead a risk of death, slow motor
development, lower cognitive function, school performance, and physical growth inhibition. Ultimately adulthood can cause low ability to reproduce (Saniarto & Binar Panunggal 2014).

Research by Susanty & Margawati (2012) among school children found that there is a good relationship between nutritional status (High /Age) with a non-verbal cognitive function. Another study conducted Mendez and Adair (1999) in 2131 children, showing the effects of stunting associated with cognitive functions of children in the Philippines, namely child stunting, by the age of 2 years have significantly test on cognitive scores, that were lower when compared with children who did not stunting, particularly children with severe stunting. It can be assumed that the poor nutritional status or malnutrition in children will have a negative impact on enhancing the quality of human resources. Hayatus, et al, (2014) suggested that chronic malnutrition is closely linked to the academic achievement of the lower secondary students. Low level of nutritional status will cause brain damage, lethargy, pain, decreased physical growth and intellectual development.

Abnormal developmental disorder is characterized among other things by the slow maturation of nerve cells, slow motor movement, lack of intelligence and the slow pace of social response (Chamidah 2012). Nutritional status can describe the adequacy of nutrient intake. Classifying the eating disorders of children into groups is built on how children receive the nutrients in time. This information can be obtained from child’s eating history. This helps in establishing the governance, identifying ways of support to caregivers, and monitoring the nutritional status of children (Darwati et al., 2014). According to Gibson, (2005) nutritional status directly affects the intake of nutrients and
the body’s need for nutrients, nutrient intake depends on the consumption of foods. This scenario is influenced by numerous factors such as the economy, parenting, diet, emotional state, behavior mother and society, caring parents against children, culture, and infectious diseases. Based on the results of the screening of existing early childhood, it is found that the number of children with the highest cognitive development amounted to 6.0% and the lowest was 27.7%.

Looking at the evidence and the conditions described above, the researchers sought to see the continuous causal factor associated with a history of parenting, diet, and the incidence of stunting (short) toddler. Given these conditions the authors are interested in conducting further research relating to stunt, parenting history, disease history, nutrition intake with early childhood cognitive development of children in Abepura district 2016.

**Research Question**

1. Do stunting, history of parenting, medical history and nutritional intake have any relation with cognitive development of children's of early childhood care in Abepura District 2016?

**General objective**

2. Special objective
6. To get a history of the disease PAUD in Abepura district, 2016.
8. To analyze the relationship of stunting with early childhood cognitive development of children in Abepura District 2016.
11. To analyze the relationship between nutrient intake with early childhood cognitive development of children in Abepura District 2016

**METHODOLOGY**

**Research Design**

Descriptive analytic with study Case Control approach that examines the causal relationship between the risk factor and the major cause variable (dependent) and variable due to the (independent). Case control study is to determine the subject of
the effect (case group) and looking for subjects without effect (control group) (Notoatmodjo, 2010).

**Place and Time Research**

This research was conducted in early childhood Abepura district by the time the research was conducted on August 28 to October 31, 2016.

**Population**

Population is the object of research where samples were taken for measurement (Notoatmodjo, 2010). The population in this study is children aged 4-6 years in the early childhood school of Abepura District Number ECD located in Abepura District, 137 early childhoods and who has received permission from the mayor of Jayapura operations as much as 20 early childhoods.

**Sample**

The sample is a part of the population has a certain way that is considered to represent the population (Hasmi, 2011). Sampling of early childhood education as much as 20% of the 20 early childhood that gets operating permit (4 ECD), taking technique ECD conducted by random sampling. While taking the number of cases is based on the assessment of cognitive development (Screening method Danver) among children aged between 4-6 years (group B) totaling 469 children, who showed less cognitive development. From the results of screening cognitive development of children from early childhood education to four years, 40 children who have acquired less cognitive development
further identified (sample cases). By utilizing the ratio 1: 2, the number of the control group was 80 children, who showed better cognitive development. Hence the total sample in this study was 120 children. The sampling technique in the control group was made randomly.

**Criteria sample of cases of children under five:**

The criterion fixed by the researcher to undertake the research with an objective of getting reliable information is detailed as below. Children aged 4-6 years (study group B) and are still registered as students in early childhood education

1. Children who have less cognitive development.

2. Respondents are mothers who have children early childhood inclined to participate in the study by signing an informed consent sheet.

**RESULTS AND DISCUSSION**

Overview of early childhood education in Abepura district

ECD (early childhood education) is one way for education for better human resources. Though there are early childhood schools, but who has received permission from Jayapura City local government operations is as abundant 20 in Abepura district.

ECD, as many as four research objectives namely early childhood school Kemala Bhayangkari 14 located on the street Lime, Furia,
Village Wahno, Kotaraja, early childhood school, small star, addressed in Abepura road - Sentani, ECD school Aisyiah Busthanul Afthal addressed at Jalan Insurgents No. 49 Abepura, Village Hedam, Abepura District and ECD school Qurrota Ayyun is addressed at the Masjid Al Barokah Abepura. All four are in the implementation of early childhood learning activities aided by good teachers who become civil servants or teachers' with an honorarium.

ECD schools are located at four areas easily accessible by public transport. The location of early childhood education is located in the midst of residential areas. The number of students from all four classes of early childhood education is divided into groups A and B. The number of learners ECD ranges from four to 50-300 children and the number of teachers ranges from 5-30 teachers.

Table 1. Distribution of respondents by age characteristics, education, jobs and the number of family members in the ECD Abepura District 2016

<table>
<thead>
<tr>
<th>No</th>
<th>characteristics</th>
<th>Case</th>
<th>Controll</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Young (≤ 20 years)</td>
<td>5</td>
<td>10.8</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>b. Adults (21-45 years)</td>
<td>35</td>
<td>89.2</td>
<td>76</td>
<td>95</td>
<td>111</td>
<td>92.5</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Low ≤ SMP</td>
<td>21</td>
<td>52.5</td>
<td>23</td>
<td>28.8</td>
<td>44</td>
<td>36.7</td>
</tr>
<tr>
<td></td>
<td>b. ≥ High School</td>
<td>19</td>
<td>47.5</td>
<td>57</td>
<td>71.2</td>
<td>76</td>
<td>63.3</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. IRT</td>
<td>24</td>
<td>60.0</td>
<td>41</td>
<td>51.2</td>
<td>65</td>
<td>54.2</td>
</tr>
<tr>
<td></td>
<td>b. Private – SOE</td>
<td>9</td>
<td>22.5</td>
<td>26</td>
<td>32.5</td>
<td>35</td>
<td>29.2</td>
</tr>
</tbody>
</table>
c. Civil, military, police  |  7  |  17.5  |  13  |  16.2  |  20  |  16.7  
Amount                   |  40 |  100   |  80  |  100   |  120 |  100   
Number of family members |  17 |  42.5  |  63  |  78.8  |  80  |  66.7  
  a. ≤ 4 people           |  23 |  57.5  |  17  |  21.2  |  40  |  33.3  
  b. > 4                  |  40 |  100   |  80  |  100   |  120 |  100   

The table 1 above shows that the age of the respondent of the case group and the control group belong to the adult age of more than 80%. Education of respondents in the case group is 52.5% lower, while in the control group, 71.2% have higher education. To work the respondent in the case group 60% as mother house-wives, while the control group 51.2% house-wives, 16.2% as civil servants, military and police. To sum 57.5% families in groups of more than 4 people, while in the control group 78.8% less than 4 people in the family.

Table 2. Based on the characteristics of the sample distribution of age and sex of the Child ECD in Abepura District 2016

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>Case n</th>
<th>Case %</th>
<th>Controll n</th>
<th>Controll %</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age (Months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>a. 48-59 Months</td>
<td>35</td>
<td>87.5</td>
<td>64</td>
<td>80.0</td>
<td>99</td>
<td>82.5</td>
</tr>
<tr>
<td></td>
<td>b. 60-72 Months</td>
<td>5</td>
<td>12.5</td>
<td>16</td>
<td>20.0</td>
<td>21</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>a. Man</td>
<td>20</td>
<td>50.0</td>
<td>42</td>
<td>52.5</td>
<td>62</td>
<td>51.7</td>
</tr>
<tr>
<td></td>
<td>b. female</td>
<td>20</td>
<td>50.0</td>
<td>38</td>
<td>47.5</td>
<td>58</td>
<td>48.3</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2 above shows that the age of the sample group 87.5% of cases ranges from 48-72 months, while the control group aged 48-59 months.
amounted to 80.0%. This means that between the case group and the control group members most are at the age of 48-59 months. For gender, that among the samples in case group, is observed among men and women is 50%. However in the control group sample, male members are more than women, which is 52.5% accounted.

1. Children's Cognitive Development

Table 3. Distribution of ECD deployment Cognitive Development in Children Abepura District 2016

<table>
<thead>
<tr>
<th>ECD</th>
<th>N</th>
<th>Cognitive development</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>35</td>
<td>Less 2 Good 32</td>
<td>6</td>
</tr>
<tr>
<td>II</td>
<td>180</td>
<td>Less 15 Good 170</td>
<td>45</td>
</tr>
<tr>
<td>III</td>
<td>86</td>
<td>Less 10 Good 66</td>
<td>30</td>
</tr>
<tr>
<td>IV</td>
<td>168</td>
<td>Less 13 Good 130</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td>469</td>
<td>Less 40 Good 429</td>
<td>120</td>
</tr>
</tbody>
</table>

The above table shows that of the 469 children who do screening early childhood cognitive development of children who have obtained 40 less cognitive development.

2. Stunting (Short)

Nutritional status (state abbreviation) stunting in children is calculated based on the index height/age. The condition of the child’s height from the lowest to the four ECD 94.7 cm, 123 cm height, averaging 103.9 cm. Having calculated with the help of WHO antromorphism index height/age, the Z score values obtained as the lowest - 3.75, the highest of 2.58, an average of 0.9237. For details, stunting the nutritional status of children of early childhood education as shown in Table 4.

Table 4. Based on the sample distribution of nutritional status Stunting in Children ECD In Abepura District 2016
Based on Table 4 shows that among the 120 samples, 30.8% states a nutritional status of stunting which spread in case group of 19 samples (47.5%). Among the control group, 18 samples (22.5). While it is not stunting in case group of 21 samples (52.5%) and in the control group of 62 samples (78.7%).

5. History of Mother’s Parenting

Parenting is a pattern of interaction between parent and child. Parenting is about how the attitude or behavior of parents interacting with their children, including how to apply the rules in the home, teach values or norms, attention and affection. This shows the attitude and behavior is so good that can be a role model for their son/daughters (Suparyanto, 2010). History of parenting include several aspects like breastfeeding, complementary feeding, teach children to eat breakfast, to accompany the child to play, providing games that sharpen the brain of children, apply a clean lifestyle in children, and so forth. From the early childhood a child’s mother acknowledgment response is further categorized into groups of good parenting and less. More details can be seen in the following table.

Table 5. Samples Distribution Based on the history of Mother Parenting among Children ECD In Abeapura District 2016
Table 5. above shows that the sample of the cases had a history of parenting mother less to 72.5%, while a history of good parenting mothers of the control group 76.2%. A history of maternal parenting less in the case group most of the children’s mother ECD exclusively breastfed for less than six months, to give breast milk before a child is 6 months old. Parents give a game that stimulates brain development and implement a clean life for their children, but sometimes take the time to play with his children. While the control group more often accompany their children to play and teach the child in play.

Disease History

History of the disease in this regard includes disease suffered in the past three months and the place where the child is taken care for treatment. If in the past month the child is not sick, but in the last three months he/she was an ill child, then the child is declared never sick. More details can be seen in Table 6.

Table 6. Distribution of samples is based on the medical history of early childhood Children in Abepura District 2016

<table>
<thead>
<tr>
<th>No</th>
<th>Disease History</th>
<th>Case</th>
<th>Control</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Yes</td>
<td>28</td>
<td>70,0</td>
<td>43</td>
<td>53,8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>71</td>
<td>59,2</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>12</td>
<td>30,0</td>
<td>37</td>
<td>46,2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>49</td>
<td>40,8</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

The table above shows a history of a group of cases by 70%. 53.8% of the control group had a history of illness. While the group of cases have no history of illness by 30%. The sufferings varied from illness such as
colds, diarrhea, malaria and ARI with a disease duration ranging from 1-7 days. The frequency of the lowest sick one time, the highest four times in three months. Types of illness cold and pain is followed by malaria, cough and cold, and diarrhea.

**Nutritional Intake**

Nutrient intake in this study includes the intake of energy, protein for three days. This summed up as an average nutritional intake of a day. 969.6 kcal lowest energy intake and 2590.0 kcal the highest. Low protein intake of 17.8 grams, 45.6 grams of the highest, an average of 27.08 grams.

Based on Dietary Allowances (RDA), the intake of both energy and protein in accordance with the requirements, viz., if the intake of energy and protein are not in accordance with the needs or between the intake of energy and protein are not in accordance with the requirements, then the intake nutrient say less. The details can be seen in the following table.

Table 7. Distribution of Samples Based Dietary intake in early childhood Children in Abepura District 2016

<table>
<thead>
<tr>
<th>Nutritional Intake</th>
<th>Case n</th>
<th>Case %</th>
<th>Control n</th>
<th>Control %</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less</td>
<td>36</td>
<td>90,0</td>
<td>44</td>
<td>55,0</td>
<td>80</td>
<td>66,7</td>
</tr>
<tr>
<td>Good</td>
<td>4</td>
<td>10,0</td>
<td>36</td>
<td>45,0</td>
<td>40</td>
<td>33,3</td>
</tr>
<tr>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>
Based on Table 7, it can be seen that the case group has less nutritional intake by 90% and the control group has good nutritional intake by 45%. Average energy intake sample has reached the level based on nutritional adequacy rate, which is recommended in appropriate age group. However, the average protein intake is still below the recommended dietary allowance figures correspond with the age group. Basically in the sample there is partly fed breakfast and drink milk, in every morning.

Add to this, the parents provide food to school that the children will be consumed together with their friends is coordinated by the teacher. But there are some children who sometimes do not have time to eat breakfast on the grounds when the parents woke up a little late, or parents do not have time to feed because they have to leave for work.

8. Stunting Relationships, Parenting Mom history, disease history, intake Nutrition with Children's Cognitive Development

1. Relationship Stunting With Cognitive Development

Table 8. Relationships with Stunting Children's Cognitive Development ECD in Abepura District 2016

<table>
<thead>
<tr>
<th>No</th>
<th>Nutritional Status</th>
<th>Case n</th>
<th>Case %</th>
<th>Control n</th>
<th>Control %</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Stunting</td>
<td>19</td>
<td>47,5</td>
<td>18</td>
<td>22,5</td>
<td>37</td>
<td>30,8</td>
</tr>
<tr>
<td>2</td>
<td>No Stunting</td>
<td>21</td>
<td>52,5</td>
<td>62</td>
<td>77,5</td>
<td>83</td>
<td>69,2</td>
</tr>
</tbody>
</table>

Amount 40 100 80 100 120 100

P = 0.005, OR = 3.116 CI 95 % Lower=1.383 Upper=7.024
Table 8 above shows that the case group nutritional status of stunting is lesser than the nutritional status which is not stunting viz., 47.5%. While in the control group 77.5% have no stunting nutritional status. Based on the results obtained by statistical test P value <0.05, no significant association between nutritional status and stunting the child's cognitive development with OR of 3.116.

Thus that children who have the nutritional status Stunting less risk for cognitive development by 3 times greater than children who have no stunting nutritional status. This means that children will have the less cognitive development.

2. Relationship History Parenting With Cognitive Development

Table 9. Relationship Parenting of History With Progress Children's Cognitive ECD In Abepura District 2016

| No  | Parenting Of History | Case |  | Control |  |
|-----|----------------------|------| |         |  |
|     | n        | %    | n   | %    | n   | %    |
| 1   | Less     | 29   | 72,5| 19   | 23,8| 48   | 40   |
| 2   | Good     | 11   | 27,5| 61   | 76,2| 72   | 60   |
|     | Amount   | 40   | 100 | 80   | 100 | 120  | 100  |

\[
P = 0.00. \text{ OR}=8.464 \text{ CI } 95 \% \text{ Lower } = 3.567 \text{ Upper } = 20.086
\]

From the table above shows that in the case group had a history of parenting mother less to 72.5% in the control group had a history of good parenting mothers 76.2%. Statistical test results obtained by the value of P < 0.05, then there is a history of parenting mothers relationship with cognitive development. The OR value of 8.464, which means that the history of parenting mothers are less at risk for cognitive development of children less than 8 times greater than the mother's history of good parenting.
3. Relationship History of Disease with Cognitive Development

Table 10. Relationship History of the Disease with Cognitive Developments of Children’s ECD in Abepura District 2016

<table>
<thead>
<tr>
<th>No</th>
<th>History Of The Disease</th>
<th>Case</th>
<th></th>
<th>Control</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>28</td>
<td>70,0</td>
<td>43</td>
<td>53,8</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>12</td>
<td>30,0</td>
<td>37</td>
<td>46,2</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>100</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>P= 0,088. OR =2,008 CI 95 %</td>
<td>Lower=0,896</td>
<td>Upper=4,498</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 10 above shows that the sample in the case group had a history of the disease by 70%, whereas in the control group 46.2% did not have a history of illness. Statistics from the test results obtained by value P>0.05, then there is no history of the disease correlation with cognitive development of children. With OR = 2.008 at CI 95%, but the value Lower <1, then a less history of childhood diseases are not the only risk factor for cognitive development of children.

An important period in the development of the child is a toddler years, because at this time the basic growth will affect and determine the next child development (Soetjiningsih, 1995). MoH RI, (2010) suggested that in order to fulfill the rights of children, attention to early childhood is important, because it is a golden period, the window of opportunity but also the critical period. Thus the history of the disease is not the single cause of the cognitive development of stunted children.
4. Relationships Nutritional Intake with Cognitive Development

Table 11. The Relationship Nutritional Intake with Cognitive Development Children’s early childhood in Abepura District 2016

<table>
<thead>
<tr>
<th>N o</th>
<th>Nutritional Intake</th>
<th>Case</th>
<th>Control</th>
<th>n</th>
<th>%</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Less</td>
<td>36</td>
<td>44</td>
<td>90,0</td>
<td>55,0</td>
<td>80</td>
<td>66,7</td>
</tr>
<tr>
<td>2</td>
<td>Good</td>
<td>4</td>
<td>36</td>
<td>10,0</td>
<td>45,0</td>
<td>40</td>
<td>33,3</td>
</tr>
<tr>
<td></td>
<td>Amount</td>
<td>40</td>
<td>80</td>
<td>100</td>
<td>100</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

P=0,00. OR = 7,364 CI 95 % Lower=2,395 Upper=22,636

The table above shows that the cases have less nutritional intake by 90%, whereas the control group has nutritional intake amounted to 45.0%. Based on the results obtained by statistical test the P value <0.05, then there is a relationship of nutrient intake with cognitive development of children or value of 7.364 means that the nutritional intake have less risk of cognitive development, which is no less than seven times greater than the intake of good nutrition.

DISCUSSION

An overview of early childhood Children’s Cognitive Development

Stuart & Sundeen, (1987) in Damayanti et al, (2009) suggested that the definition of Cognitive is the ability to reflect and provide rationale, including the process of remembering, judging, orientation, perception and attention. Cognitive impairment is a maladaptive response that is characterized by impaired memory,
and difficulty in logical thinking. Cognitive dysfunction is closely related to brain function, because the patient’s ability to think will be influenced by the state of the brain. Piaget (2001) stated that the development or cognitive ability is the result of a relationship developing brain and nervous system and experiences that help individuals to adjust to its environment. A cognitive process is changed in thinking, intelligence and language of children. Results of a screening cognitive development of children in this study found the cognitive development of children who are low 8.5% of the total children did the screening of cognitive development. The findings are not much different from the results of the study of Isharyanti (2015) who found the cognitive development of children in Public health center Kebakkramat I Karanganyar at 7.1%

Overview Stunting in children early childhood

Malnutrition causes a very high degree of shortening of children, affecting one in three children under five, which are the proportion of a public health problem by the World Health Organization (WHO) (Scaling up Nutrition, 2010). Short children (stunting) affect far more poor children. The proportion of stunted children in the poorest quintile of the population is almost twice the proportion of children in the highest wealth quintile. UNICEF (1990) suggested that the direct cause of malnutrition including stunting is an imbalance of nutrient intake with needs as well as infectious diseases. In this study, 30.8% of the sample had stunted nutritional status, although this figure is still below the national average but it remains a public health and nutrition problems that were thought to be to resolve to a minimum.
Stunting (diminutive) is a state body that shows the height exceeded the deficit - 2 SD below the median height that became the international reference population. Stunting body condition showed low height-for-age or a child’s body is less than other children his age (UNICEF, 2012).

The results were obtained from 120 samples 30.8% had nutritional status stunting scattered in case group 47.5% of 40 samples of cases and 22.5% of the 80 control samples. This finding is higher when comparing with the findings of Susanti and Berliana (2015) in Public Health center of Senggi who have received 33.3% of the 96 children studied. Likewise, the consequences of prospective cohort studies on four countries (Peru, Ethiopia, India & Vietnam) have a child stunting 17.11% of 2052 children (Crookston, et.al, 2010).

**Overview History of Mother and Child Early Childhood Parenting**

Pattern foster parent is an interaction between parents and children to communicate, educate, nurture, and ongoing from time to time. With parenting applied parents, children can interact with the environment around the world and get to know their environment prevailing communal life as well as embedded value of a healthy life. (Ribeiro, 2009).

Parenting really takes towards the lifestyle of the child in accordance with health standards. In addition must set a proper diet is also very important set of parenting that is also true. Correct parenting can be reached by giving full attention and affection for the children, bestowing him/her enough time to enjoy
being with the whole family (Santrock, 2002). Fielder (2008) suggests that behavior and attitudes of parents have a direct impact on proper growth of their children. These include the family (immediate environment) and touch every aspect of the life of every child: at school, playground etc., so parenting mothers who really will show a good child physical and psychological development and will be in accordance with the approach taken by his parents, like approach in child care. The childcare, in addition to assisting in the daily life also provides a sense of security and comfort.

The results were obtained from 120 samples studied 40% had the lacking of mother’s parenting. The results are not much different from the Chandra study, during 2014 for pre-school children, who have mother’s parenting undemocratic of 61.5%. Drew Edward (2006) states that democratic parenting is parenting that prioritize the interests of the child, but do not hesitate to control them.

Parents with parenting would be rational and always takes action on thoughts. And parents or mothers who have an attitude of independent parenting will be realistic about the ability of children, do not expect excessive beyond the capabilities of the child and give freedom to the child to choose and to act, besides that this attitude is also using the approach of comfort to children and nature warm.

Santrock (2007) state that democratic parenting encourages children to be independent, yet still put limits and controls on their actions and the mother will be more warm and compassionate. Therefore it can be considered that parenting is good and right and acceptable. Parenting is a rational approach
and democratic always attentive to the needs of children and provide them with a sense of responsibility towards all the interests and needs of children.

Low parenting is liable to be influenced by the education level. Lower the level of parenting, lower will be the absorption of the message among the children. The education level of respondents in the study is 36.7% lower, due to the lack of schooling, will lead to lack of employment opportunities that ultimately lead to lower income.

**Overview History Kids Early Childhood Illness**

Sutjiningsih, (1995) suggested that the medical history is one of the external factors that affect child development. External factors include the environment consisting of environmental pre-natal, natal and post-natal. A history of communicable diseases such as malaria, respiratory infection and tuberculosis suffered by the child or the mother during pregnancy will cause issues in growth and development of children. This study found 59.2% of children have suffered from infectious diseases of early childhood. These results are higher with the research result of Kusminarti (2009) in the District of Semarang west in children, were aged 2-4 years from 42 samples 26.2% had a history of infectious disease.

Similarly with research of Hussein, in 2013, found 30% of the 70 samples studied suffering from transmissible diseases, both respiratory diseases and diarrhea. The results of this study are lower than the research Setyaningrum et al, 2013, found 86.7% of the samples studied had a history of infectious disease. According to Abuya Ba et.al, (2012) respiratory disease suffered by children
is usually accompanied by a rise in temperature, resulting in the increase in nutrient requirements. The condition if not offsets adequate food intake, it will arise from malnutrition and failure to thrive.

Communicable diseases have a substantial effect on the growth of children. Communicable diseases are also associated with impaired growth and development of children. Therefore it can be assumed that a history of infectious diseases in children related to the low condition of the home environment, parenting unhealthy eventually hampers growth and development.

**Highlights of the Child Nutrition Intake ECD**

Nutritional intake is the amount of nutrients in food consumed by a person to obtain energy and nutritious substances in order to perform daily physical activities. The amount of food in a meal will contribute to the energy and nutrients needs through three basic types of nutrients, namely energy income carbohydrates, protein, fat and 2 other elements. Third nutrients and two of these nutrients are often called macro-nutrients and micronutrients (Almatsier 2002). The result revealed an energy level, where the intake is lower than 50% of the 120 samples studied and protein intake is less by 80.8%; while lack of energy and protein intake (nutrition) by 66.7%. The result of the research is still above Purwaningrum and Ward, (2012), rate which received less nutritional intake by 13.4%. A child who is eating less will lead to weak endurance, low level physical activity (play) and low level thinking power, due to the lack of nutrients in the food taken into the body causes due to low level energy produced (Adrina 2013). Georgeff (2007) suggested that the nutrient intake who plays a
role in the process of growth and development, especially brain growth and developments until the age of 3 years. Nutritional intake is very important for motor function including the advance cognitive.

**Relationships with Stunting Children's Cognitive Development**

The results showed that children who have the cognitive development of less nutritive state turn stunting. In contrast to the cognitive development of children more useful nutritional status is not stunting. And it turns out there is a relationship of stunting with the cognitive development of children, in which children are stunting 3 times greater risk for cognitive impairment in comparison with children who are not stunning.

Linda (2013) states that a state of chronic nutritional status due to an imbalance of nutrient intake with needs that occur over time in the past led to a state of nutritional status stunting. And the status of malnutrition that occurred early has the potential for the occurrence of developmental disorders. The impact of the disorder chronic malnutrition in children would result in lower development and growth of the brain that were formed since the age of 3 months in the womb and will grow up to age of pregnancy in second trimester to the third trimester, and ultimately leads to low levels of intelligence and learning ability of children to decline (Noviani, 2013). The brain cells in the period of 36 months after the birth of the amount will be on the increase. The size of this increase can be determined through measurement of the head circumference in children aged under five. After 36 months, the process will run slower brain development until school age and adolescence. Thus as long as the fetus growth and
development are highly dependent on adequate nutrients until after birth. This is because the growth and development of a child's brain is also highly dependent on the nutrients available in the everyday diet according to requirement. By fulfilling the nutrients the growth and progress of the child's body including brain cells can be maximized. After a childhood brain will still grow despite the slower pace of growth up to the age of children to 59 months (Atien 2009).

The results of this study are consistent research Walker et.al (2014) that the child stunting significantly associated with psychological development and stunted children at risk of a lack of progress by 3 times greater than children who are not stunting. And research results Cole M. et.all, (2005) who found no relationship between stunting with psychomotor development of children. The results of this study do not have much different from the research Nandine et.all, 2012, which showed a significant association between nutritional status and cognitive (p <0.05).

According to Gibney et al, 2009) that the problem of short children is a reflection of the socio-economic situation of society caused by circumstances that last longer. Then the characteristics of nutritional problems indicated by tiny children are nutritional problems that are chronic. Stunting in children easily arise health problems both physically and psychologically. Not all children can grow and are developed in accordance with his age; there are children who experience barriers and abnormalities. Associated with the performance of the brain, malnutrition can reduce the level of certain neurotransmitters work and affect the child's cognitive development.
Relationship History Parenting with Cognitive Development

The results showed that children's cognitive development is less. A history of maternal parenting is less and there is a meaningful relationship between parenting less with cognitive development. And children who have a history of maternal parenting less risk of cognitive development, not less than 8 times compared with children whose mothers have a history of effective parenting.

Teviana and Maria (2011) states that parenting is an act of giving love, attention, provide nutritious food pay attention to health, growth and development by always accompany and motivate to want to learn and independent which could properly be taken to give full attention and affection for the children, giving him enough time to enjoy and being with the whole family. Pattern foster parent is the best way that can be taken of parents in educating children as the embodiment of a sense of responsibility for the foster child.

Rapar et al, (2014) states that the mother's parenting means include educating, guiding, nurturing and taking care of children. Mothers care for child begins in the womb, after birth until the age of five that includes the supply and provide meals, drinks, take care of clothes, maintain a healthy child and the home environment, preserve and maintain the health of children and everything they need.

Anggraeni, (2012) states that parenting is a model, form or style to educate and provide guidance, leadership or treatment to the parents of children that performed in the family. This opinion is in line with the same proposed by Adoloph (2007), which states that
parenting is the approach of pattern and interaction between parent and child in the management of education. Parents who always make time to accompany the child either in play or study supported good attention to child health and nutrition will create a healthy and intelligent children.

Hurlock (1999) states that spend time with the child on a regular basis with a friendly atmosphere are essential in helping to achieve the growth and development of the physical, psychological and intellectual child to walk normally. The warmth of a good relationship and monitoring the activities of children is a matter that is regarded as caring parents to their children. This oversight can also prevent the negative pressure from the outside as well as provide better opportunities on the mother to monitor the process of information (internal and external) that may influence the process of child development. Basically parenting is an attitude and practice which is run by an adult (mother or other caregivers) include: breastfeeding, how to feed the child (child feeding), basic care, to provide security, protect children, sleeping together, bathe and dress, used to use the toilet, maintain hygiene, preventing from pathogens and diseases, prevention and treatment when a child is sick, interact and provide stimulation, play together and socialize, give affection as well as providing decent housing and a healthy environment, so that children can grow flower well.

Child development and creativity according to psychologists closely related to the cognitive development. Stimulate preschoolers to do with the play. Playing directly or indirectly will make children in developing physical abilities-motor, social-emotional, and cognition (Nadine et.all, 2012). Opinions Nobert
Schady (2011) that parents can support children through the provision of inducements to do a lot of play activities. Parents have a role in motivating, supervising, and became a partner in a child's play activities. The role of parents is skillful in playing activities will cause a good impact also in the cognitive development of preschool children. While the role of parents are ignorant will have an impact that is not good for the cognitive development of preschool children, as described, then the child will be an unhappy, less confident, less sociable, even easily frightened on his friends, and less creative, because of lack of attention of his parents. It is presumed in this context that early childhood cognitive development can be stimulated by their attention and accompanies the play activities. Play activities in question are playing educative. In addition to the role of parents that to give attention in play, also gives love and provide, nutritious food will lead to better child's cognitive development.

**Relations with the medical history Cognitive Development**

Progress of the child must be influenced in part by lack of health factors or a history of never sick. If the child was in bad health or suffering from disease, of course, will affect food consumption, disrupt growth and development. Communicable diseases are the direct cause of the impaired growth and development of children (UNICEF, 1990).

According to Damanik, et al, (2010) that is a manifestation of infectious diseases caused by nutritional disorders in addition to insufficient nutrients are absorbed from food also the amount of nutrients required by the body is not appropriate. This problem occurs as a manifestation of the consequences of inadequate
nutrition of the food or as a result of a variety of infectious diseases, causing the need of increased energy, nutrients and decreased appetite due to illness or the effects of disturbance absorption in the intestine. If this happens in the growth and development of children are disturbed as well.

The results showed that children who had less cognitive progress turn out there is a history of the disease by 70%, while the child's cognitive development either no history of the disease by 46.2%. And there is no association with the disease history of cognitive progress. However, the value of OR by 2 times to occur less cognitive development compared with no history of disease. Although this relationship is weak, but the affected child will certainly experience barriers to growth and development. There is no relationship between the histories of the disease with the development of the child. This shows that the cognitive development of children is not the only influenced by a history of the disease.

**Relationships Nutritional Intake with Cognitive Development**

According to Susanty (2012) good nutrition and balanced an important part of quality of life. This concurs with Ramli et.al 2009, where the adequate nutrition needed to ensure optimal growth and development for infants and children. Nutritious feeding in children after birth is the responsibility of the mother or parents in parenting, by feeding adequate energy and other nutrients. Mother’s parenting practice started since the child in the womb, is born, until the age of toddlers and school age who provide and delivers meals, drinks and everything child needs as capital growth and development (Rapar et al, 2014). More fulfilled
and insufficient food and beverages that contain energy and nutrient substances in accordance with the needs of the body, the brain growth and development will be the maximum that eventually the child will be easy to understand for all the guidance and lessons given by parents and other caregivers (Kaakinen et.al, 2010).

Insignificant results were obtained with the relationship of nutritional intake with cognitive development of children and nutrition are less risky cognitive development of children had no less than seven times greater than the intake of appropriate nutrition. This means that the better the nutrition, better the child’s cognitive development.

These findings concur with those of Susanty and Ani (2012) that there is a relationship between energy and protein intake with motor development of children. Also in line with the research of Pantaleon et al (2015) found an insignificant relationship of energy and protein intake in the development of the child. According to the expert commission FAO / WHO in 1971 in Ramli et.all (2009) that energy intake should be adjusted for body weight during infancy. This energy comes from food that contains proteins, fats, and carbohydrates. For every 1 gram of protein and carbohydrates provides the energy contribution of each of 4 cal 1 grams of fat provides 9 calorie energy contribution sobers. For the fulfillment of energy in accordance with the needs of the body depends on not enough food that contain elements - elements of the nutrient. Gunarsa (1997) (in Setyaningrum Tryani, Ivone & Magdalena 2013) found that factors which affect a child's cognitive development are environmental factors, such as how the upbringing and education, others are given to children and
especially the energy intake from carbohydrates and fats. Proteins can also be used as an energy source, especially if other sources are very limited

SUGGESTIONS

For Health Department

a. The necessity of implementing the program of monitoring the nutritional status (height for Children in School) at the age of early childhood and continuously monitor every six months the nutrition and health and intervention through counseling activities, weighing and measuring the height of children in every early childhood education for 6 months, together with an assessment of motor development, cooperation with psychologists.

b. The need for additional food program - Children early age in ECD institutions of at least 2 times a week is enough energy and nutrient. Coordinating regulations needs to be done to improve nutrition in early childhood age children with Institution Education and Culture.

For the Department of Education and Culture

a. The need for attention to the development of children by complementing and supporting or replacing equipment and tools in the process of teaching up to date so that they can better improve psychomotor and cognitive development of children.

b. A need to improve the competence of teachers - early childhood teachers through training and or workshop to be
more skilled and able to optimize the learning process, so as to produce a quality early childhood education child.

**Teachers in early childhood education**

a. The need for cooperation with the parents of children in early childhood mentoring programs and attention to children’s early childhood education, is in need to train the cognitive development of children with good training undertaken by the government or by the ECD centre.

b. The need for evaluation activities of early childhood growth and development in collaboration with health institutions and Psychologists.

**For Parents**

a. The parents should take time to play an active role in early childhood education, by helping the children's learning process, so that children can get a better learning achievement in their development.

b. Parents (mothers) should have to provide ample time and attention and extend examples related to a healthy living habits

**For Further Research:**

a. The need to perform more in-depth research family culture in providing education and guide children on a day to day basis.
b. The need for intervention studies on the pattern of care of the elderly in relation to the growth and development of Early Childhood.

CONCLUSION

Based on the results and discussion of it can be summed up as follows:

1. A description of cognitive development in early childhood fourth in Abepura district showed less by 8.5% (40 children) of 469 children in a screening, are in the age group 48-59 months of 87.5% and 12.5% in group age 60-72 months, less cognitive development as the case group. Cognitive development is the advancement of the ability to think and process orientation and perception in judging. Maladaptive cognitive impairment means that the intended disruption of concentration disorientation children.

2. A description of nutritional stunting (short) to four children in early childhood education in Abepura district by 30.8%. Stunting is a requirement of the body that shows the heights less than -2SD according to age. Height growth is strongly influenced one nutritional factor since the child in the womb to children aged 59 months after Christmas.

3. Picture history of parenting parents (mother) in the four early childhoods in Abepura district is less by 40%, which are spread in case group and 72.5% of control group 23.8%. Parenting mothers to their children need attention interaction, affection and from the womb to be born as well as provide leisure time together with children for independent learning.
4. Description of disease history to four children in early childhood education in Abepura district showed 59.2% of children had a history of the disease from spreading in case group by 70% and the control group 53.8%. Communicable diseases that occur in children for a long time and frequency, frequently, will cause low nutrient intake. This will eventually hinder the growth and development of children.

5. A description of nutrient intake in the fourth ECCE in Abepura district show less of 66.7% spread in the case group and 90% in the control group by 55%. Adequacy of nutrient intake is strongly influenced diverse dining in accordance with the needs of the body. Malnutrition, then the diversity of eating that does not comply with the needs of the body.

6. There is a relationship of nutritional status stunting with cognitive development. Early childhood education child stunting in Abepura district which would risk three times greater than children who are not stunting. The condition of chronic nutritional status is due to an imbalance of nutrients in the womb until age 36 bullae, and then the process of growth and brain development are not optimal inhibition addressed with motor and cognitive development of children.

7. There was a history of parenting mother with child cognitive development of early childhood education in Abepura district. Children's early childhood history of maternal parenting is less, would risk eight times greater cognitive development of children less, compared with children whose mothers better parenting history. Optimal brain cell development in the future children will look
healthy and smart. Optimal cognitive development of children is primarily caused by an act of the parents (mother) in providing attention and affection as well as taking the time to always accompany performs together in teaching children with loving care.

8. There is not any relationship with the history of the disease with early childhood cognitive development of children in Abepura district. The history gets another factor that causes lack of cognitive development. Adverse health history is a manifestation of a history of sickening in children whose consequences in disruption of nutrition. In a long time it will result in impaired development of brain cells so that the child will experience disruption of intelligence.

9. There is a relationship of nutrient intake with cognitive development of children. Nutritional intake is less risk of cognitive development of children, is 7 times greater than the intake of good nutrition. Adequate nutrition applicable requirements given by parents are one of the practices of mom in providing a daily diet that meets energy and nutrients. The more the fulfillment of energy and nutrients in accordance with the needs of the body will ultimately assure the optimal development of psychomotor reach.

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