THE CORRELATION OF PARENTING STYLE WITH COGNITIVE DEVELOPMENT IN CHILDREN WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER

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Abstract

Background: Child development is a very important phase, in which children learn various skills as future generations. One of the disorders that can impede child development process is Attention Deficit Hyperactivity Disorder (ADHD). Children with ADHD have problems with cognitive abilities, of which about 20-60% of them have learning disorders. The efforts to support cognitive development in children with ADHD is by approaching the child's environment through parenting style.

Objective: This study aimed to determine the correlation of parenting style with cognitive development in the children with ADHD in SLB Negeri 1 Denpasar, Bali, Indonesia.

Methods: This study used a correlational design with cross sectional approach. The sample size of 30 respondents were selected using a purposive sampling technique. Data were collected using parenting style questionnaire (PSQ) and average value of odd semester report of 2016/2017 academic year.

Results: It was found that most parents with democratic parenting style were 19 people (63.3%), authoritarian style were 7 people (23.3%), and permissive style were 4 people (13.3%). The result of the contingency coefficient test obtained p-value of 0.039 (p <0.05) and correlation value of 0.501, which indicated that there was a high correlation between parenting style with cognitive development in children with ADHD.

Conclusion: It is suggested that parents of ADHD children should be able to provide good parenting style for their children, especially for the cognitive development.

Keywords: parenting style; cognitive development; ADHD; children

INTRODUCTION

Child development is a very important phase that children learn various skills in the future. Disorders that can inhibit the process of child development are behavioral disorders that generally occur in early childhood and school age, one of which is Attention Deficit Hyperactivity Disorder (ADHD) (Hidayati, 2009). ADHD is a condition that there is a sedentary pattern such as inattention accompanied by hyperactivity and impulsivity in a person (Hidayati, 2009). Three subtypes of children with ADHD are ADD/ Attention Deficit Disorder, hyperactive-impulsive type, and mixed type (Chrisna F, 2014).

Based on data from National Health Interview Survey (NHIS) in 2011-2013, the children having ADHD in the United States were 2.7% at 4-5 year age category, 9.5% at 6-11 year age category, 11.8% at the age of 12-17 years (Pastor, Reuben, Duran, & Hawkins, 2015). The prevalence of ADHD 2009 in Indonesia in school-aged children has increased to 26.2% (Saputro, 2009). The prevalence of
ADHD children in Denpasar Bali is 108 children (Pratiwi, 2014). During 2012, the number of ADHD patients who visited the clinic in Sanglah Hospital as many as 63 people, and children at the Center for Children Therapy and Special Needs School Pradnyagama Denpasar reached 150 children (Wihartono & Sutarni, 2006).

Childhood problems with ADHD are mostly in their cognitive abilities and adaptive behaviors (Mahabbbati A, 2013), approximately 20-60% of ADHD children have learning disorders (Mahabbbati A, 2013). Based on literature, ADHD childhood relationships with learning disorders are very understandable when the child loses his concentration and attention, which make the child cannot absorb the material as a whole (Chrisna F, 2014). In hyperactive-impulsive students, moving trends, and uncontrollable behavior also impede the learning process (Rief, 2008).

The main problem in children with ADHD is cognitive development. Efforts to support and influence cognitive development in children with ADHD is to approach the environment of children through parental care (Salimar, Hastuti, & Latifah, 2011). Every parent has a different parenting style with each other. The development of the child toward positive or negative is the impact of the main environment of the parents. Every parent has a more dominant tendency in parenting style (Anisah, 2017).

Parenting styles consist of three types, including authoritarian, democratic, and permissive. Authoritarian parenting is a parenting style that requires the child to follow the parent's instructions. Democratic parenting is a parenting style that shows strict supervision of the child's behavior, but also responsiveness, more creative children, smooth communication, not low self-esteem, and a big heart. Permissive parenting is a parenting style that educates children freely (Teviana & Yusiana, 2012).

A previous study concluded that there was a correlation of parenting style with the children development (Fatimah, 2012). Similar with another study revealed that there was a correlation of parenting style with the personal social development of toddlers. Democratic parenting style in this study refers to the educational capacity of children supported by the level of parental education, and personal social development at the age of toddler tends to be abnormal because it is caused by parenting style that do not support to explore the ability of their child (Nurhidayati, 2013).

The results of a preliminary study conducted at SLB Negeri 1 Denpasar on February 7, 2017 obtained children with mixed type (ADHD) as many as 18 children and Attention Deficit Disorder (ADD) as many as 20 children. Six people (15.8%) aged 7-11 years, and 32 people (84.2%) aged 11-22 years.

The results of interviews with teachers found that the children with ADHD mostly had learning difficulties because children often did not concentrate in the classroom, and they had unstable emotions and hyperactive which mad them could not follow the lessons optimally. Based on the results of interviews with ten parents of children with ADHD, six parents did the type of democratic parenting that parents always encouraged and supported what children did with consideration, three parents did the authoritarian parenting style that parents always limited their children in doing anything, and one parent had a permissive parenting style, which parents always free their children to do anything without telling them whether it is right or wrong. Based on the above phenomenon, this study aimed to examine the correlation of parenting style with cognitive development in children with ADHD.

METHODS

Study design
This study used a correlational cross-sectional research design. This study emphasizes the measurement or observation time of independent and dependent variable data only once at a time. Both variables are assessed simultaneously at a time, with no follow-up (Nursalam, 2013).
Setting
This study was conducted on 18 to 29 April 2017 at SLB Negeri 1 Denpasar, Bali, Indonesia.

Sample
The population of children with ADHD in SLB Negeri 1 Denpasar was 38 children. Sample size in this study was 30 people. Selected using a purposive sampling method. Purposive sampling was used to determine samples with certain considerations made by the researchers themselves, based on the characteristics or nature of the population that has been known previously (Sugiyono, 2008). Inclusion of the sample were children diagnosed with ADD / ADHD, aged ≥ 11 years with formal operational stage cognitive development, parents of children and children were willing to be respondents by signing informed consent. The exclusion criteria were children with physical disabilities, and parents of children could not read and write.

Instruments
Parenting Style Questionnaire (PSQ) was used to measure parenting style (Robinson, Mandalceo, Olsen, & Hart, 2001). The questionnaire had been tested validated with the validity of the authoritarian of 0.81, the democratic of 0.83, and the permissive of 0.65. The reliability of the questionnaire was 0.76 (Önder & Gülay, 2009). To measure the cognitive development, the documentation of the average value of the odd semester report of the academic year 2016/2017 was used.

Ethical consideration
The study permission was obtained from STIKes Wira Medika PPNI Bali and SLB Negeri 1 Denpasar, Indonesia. We confirmed that each respondent in this study has signed an appropriate informed consent.

Data analysis
Data were analyzed using univariate analysis to present the mean, and contingency coefficient test with 95% confidence level (α = 0.05) to see the correlation between variables.

RESULTS

Condition of research location
SLB Negeri 1 Denpasar is located at Jl. Serma Gede No. 11 Sanglah Denpasar, Dauh Puri Kelod, West Denpasar District, Bali Province, Indonesia established on October 16, 1957. SLB Negeri 1 Denpasar uses one-unit system, with three levels of education system, ranged from Primary School Extraordinary (SDLB), Junior High School Extraordinary (SMPLB) and Senior High School Extraordinary (SMALB).

SLB Negeri 1 Denpasar is led by a principal named Drs. Ngakan Made Dirgayusa, M.Pd and has a number of teachers as many as 25 people. SLB Negeri 1 Denpasar, from the beginning of its foundation (1957), only accepts children with visual impairment, but starting from the year 2007/2008 they receive various types and levels of other children with special needs such as children with autism, ADHD, ADD, hyperactive, slow learning, learning disabilities, emotional disturbance, concentration disorders, cerebral palsy and others. The number of students from SDLB to SMALB was 84 people. This school has daily activities that take place at school. The process of teaching and learning consists of 2 parts: the morning part for students with visual impairment and the afternoon part for children with special needs. Students are required to collect homework in the teachers’ guidance room before the class begins. The provided extracurricular services refer to the personal development needs of the students.

Characteristics of sample
Characteristics of ADHD children
Of thirty respondents with ADHD children in SLB Negeri 1 Denpasar as shown in the table 1, 26 people (86.7%) were males. The majority of the children aged 11-12 years.

Characteristics of parents
Table 2 shows that most of parents had senior high school (63.3%) as their educational background, and working as private workers (33.3%). Of thirty parents with ADHD children, 21 people (70%) had two children.
Table 1 Characteristics of respondents by gender and age of ADHD Children

| Characteristics of ADHD children | Gender | f | %  |
|----------------------------------|--------|---|----|
| Male                             | 26     |   | 86.7 |
| Female                           | 4      |   | 13.3 |
| Age (years)                      | f      | % |
| 11                               | 5      | 16.7 |
| 12                               | 5      | 16.7 |
| 13                               | 4      | 13.3 |
| 14                               | 3      | 10  |
| 15                               | 4      | 13.3 |
| 16                               | 3      | 10  |
| 17                               | 2      | 6.7 |
| 18                               | 2      | 6.7 |
| 19                               | 2      | 6.7 |

Table 2 Characteristics of respondents based on educational background, occupation, and number of children

| Characteristics of parents | Education | f | %  |
|----------------------------|-----------|---|----|
| SD (Elementary school)     | -         |   | -  |
| SMP (Junior high school)   | 2         |   | 6.7 |
| SMA (Senior high school)   | 19        |   | 63.3 |
| D3 (Diploma 3)             | 6         |   | 20  |
| S1 (Bachelor degree)       | 3         |   | 10  |
| Occupation                 | f         | % |
| PNS (Government employee)  | 2         |   | 6.7 |
| Private Worker             | 10        |   | 33.3 |
| Entrepreneur               | 9         |   | 30  |
| Housewife                  | 9         |   | 30  |
| Number of Children         | f         | % |
| <2                         | -         |   | -  |
| 2                          | 21        |   | 70  |
| >2                         | 9         |   | 30  |

Parenting style and cognitive development in children with ADHD

Parenting style

Parenting style of parents in this study was divided into three types, namely: authoritarian, democratic, and permissive. Table 3 shows that majority of parents had democratic parenting style (63.3%), followed by authoritarian style (23.3%) and permissive style (13.3%).

Table 3 Parenting style of ADHD children in SLB Negeri 1 Denpasar

| Parenting style | f | % |
|-----------------|---|---|
| Authoritarian   | 7 | 23.3 |
| Democratic      | 19| 63.3|
| Permissive      | 4 | 13.3|
| **Total**       | 30| 100|

Cognitive development in children with ADHD

Of thirty respondents of ADHD children as shown in the table 4, the average value of the odd semester report of the academic year 2016/2017 with B +, B, and B- value was equal, with 10 people (33.3%) in each value. The correlation of parenting style with cognitive development in children ADHD at SLB Negeri 1 Denpasar as shown in the Table 5 was analyzed by contingency coefficient test with 95% confidence level (α = 0.05), and
the result showed p-value = 0.039 (p <0.05), which indicated that there was a correlation between parenting style with cognitive development in children with ADHD. The magnitude of the correlation of the contingency coefficient test result was 0.501, which there was a high correlation between the two variables.

**Table 4** The average value of the odd semester report of the academic year 2016/2017

| Average Value | f  | %  |
|---------------|----|----|
| B+            | 10 | 33.3|
| B             | 10 | 33.3|
| B-            | 10 | 33.3|
| Total         | 30 | 100 |

**Table 5** Cross-tabulation distribution of parenting style and the average value of the odd semester report of the academic year 2016/2017 at SLB Negeri 1 Denpasar

| Parenting Style | Average Student Report Score | Amount | Value |
|-----------------|------------------------------|--------|-------|
|                 | B+  | B   | B-   | f  | %  | f  | %  | f  | %  | p value = 0.039 (p<0.05) |
| Authoritarian   | 2   | 6.7 | 0    | 0  | 0  | 5  | 16.7| 7  | 23.3|
| Democratic      | 8   | 26.7| 8    | 26.7| 3  | 10.0| 19 | 63.3|
| Permissive      | 0   | 0   | 0    | 2   | 6.7| 2   | 6.7| 4  | 13.3|
| Total           | 10  | 33.3| 10   | 33.3| 10 | 33.3| 30 | 100 |

**DISCUSSION**

Factors influencing the parenting style in this study include socioeconomics, educational background, and number of children. The results showed that most parents applied democratic parenting style, as considered having more time with their children (the housewife), and most parents with permissive parenting style were parents who worked as private workers. Parents with high school educational background tend to adopt democratic parenting, and parents under senior high school background tend to have authoritarian and permissive parenting style. The majority of parents had 2 children and tended to apply democratic parenting, and there were some parents who had more than 2 children apply authoritarian and permissive parenting style.

Based on the results of cross tabulation on 30 respondents with the results of contingency coefficient test results showed that the value of p = 0.039 (p <0.05), indicated that there was a correlation between parenting style with cognitive development in children with ADHD at SLB Negeri 1 Denpasar. The magnitude of the correlation of the contingency coefficient test results was 0.501, which there was a high correlation between the two variables.

Children who were being cared for by democratic parenting and good cognitive development could be seen from the average value of report, which tend to get B and B+ (26.7%). Democratic parenting style provided by parents can make the child's development in a better direction to make children able to make decisions well, and can do creativity in accordance with what they want, but still under the supervision of parents, confident and oriented to achievement. This is in line with the opinion of a previous study who said that the cognitive development of children would be good if parents apply the democratic parenting style. The more democratic of the parents, the better cognitive development of children will be (Septiawati, 2016).
The democratic parenting will produce good cognitive development, because parents in the process of parenting will be full of patience, always stimulate the cognitive development of children to be able to initiate and oriented to achievement, always encourage their children to be independent, and always provide supervision of their child (Astuti & Untari, 2016). ADHD children with the most democratic type of parenting had good cognitive development but there were three ADHD children with less optimal cognitive development.

ADHD children with the democratic parenting style got B-values was 3 people (10%). Less optimal cognitive development in children who were being cared by democratic parenting style could be caused by children who disagreed with parents during the upbringing process, so that children could not accept the advice and guidance provided by parents. We have the same opinion with previous study who said that the emotions of children who are less stable would cause disputes when parents are trying to guide children (Suteja, 2017).

Children who were cared by authoritarian parenting with cognitive development were seen from the average grades with B+ values amounted to 2 people (6.7%), but most children with B- values amounted to 5 people (16.7%). Cognitive development with authoritarian parenting style tends to be less than optimal; this was due to the actions of parents who more impose the will of their children. The style of parenting will form a child who is more obedient to the command so that children who are able to adjust to the type of parenting by the parents will excel in the class and get a good value. Children with authoritarian parenting will be largely cowardly, lacking initiative, and lack of curiosity, so their cognitive development was less than optimal.

Authoritarian parenting will cause children to be less initiative, afraid of doing wrong, being obedient, and not being responsible (AR, Madyaningrum, & Subekti). This parenting style is often a conflict between parents and their children, whereas children in this case are in need of good social relationships. In a family like this, the child will feel his interests and hobbies are not cared for and considered unimportant. When children want to seek the attention of their parents or establish themselves, then authoritarian figures will be met, sometimes sanctions will be obtained by children. The demands of parents who are too high will burden the child and cause despair, low self-esteem, which make the child is not motivated to excel. ADHD children with authoritarian parenting do not all have poor cognitive development, whereas in this study there were ADHD children with B+ values.

Two children of ADHD (6.7%) with the authoritarian parenting got B+ values because this type of parenting can form a child to be obedient and afraid of their parents to create disciplined, polite, diligent, and obedient children. Discipline behavior in children will lead children to diligently doing homework provided by the teacher, the child will be diligent study, and never ditch. Parents will punish the child if the child breaks the rules and does not follow orders. Authoritarian parenting with punishment will create a deterrent effect on children so that children behave according to what is desired by their parents (Rostiana, Wilodat, & Alya, 2015).

Children who were cared by permissive parenting style with cognitive development were seen from the average grades, where B and B values were 2 (6.7%), respectively. The cognitive development of children with permissive parenting style tends to be less than optimal because parents allow and release children in the learning process, thus forming children who are spoiled, lazy, unable to control themselves, and there is no motivation to perform. According to previous research, permissive parents will give their children an opportunity to do something unsupervised and provide little guidance to their children (Rostiana et al., 2015). Children with permissive parenting cannot control themselves and are not motivated to perform. Children will feel they do not have to go to school and excel because parents never force them to study. Children will be free to do anything like fighting in school, ditching, not listening to the teacher, not paying attention to the lessons learned at school, and not doing homework. Attention to parents of children is
very little so that cognitive development in children with permissive parenting style was not optimal.

Permissive parenting style does not always form a less optimal cognitive development, seen from two children (6.7%) with good cognitive development who have the value of B. Children who are able to offset parents with permissive type will be free to create in accordance with his desire so that the child will be creative. We agrees with a study who said that if the child is able to manage all his thoughts, attitudes and actions well, the possibilities of freedom given by parents could be used to develop his creativity and talents, so he becomes an adult individual, initiative, and creative (Suteja, 2017).

We argue that parenting is the main environment in everyday life of children and an important factor in the process of growth and development of children. Democratic parenting is the best parenting style in shaping the development of the child towards a positive direction, especially in improving the child's cognitive development. The more democratic parenting style, the optimal cognitive development of children with ADHD will be.

CONCLUSION

There was a high correlation between parenting style with cognitive development in children with ADHD (Attention Deficit Hyperactivity Disorder), therefore this study can be used as health education to society, child nurse, and health field to increase efforts in reducing the risk of delaying cognitive development in ADHD children, as well as it can be used as basic data to increase knowledge to carry out further research related to the correlation of parenting style to other developments such as language, social, and motoric development in children with ADHD (Attention Deficit Hyperactivity Disorder).

Declaration of Conflicting Interest
None declared.

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Author Contribution
All authors contributed equally in this study.

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