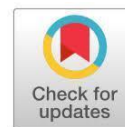


## Relationship Types Of Parenting Styles In Providing Smartphone With The Risk Of Attention Deficit And Hyperactivity Disorder In Preschool Children



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### ABSTRACT

Attention deficit and hyperactivity disorder (ADHD) is a childhood disorder characterized by inattention, hyperactivity, and impulsivity, particularly in children under seven years old. Addition to electronic media, such as smartphones, is one of the causes. The way parents provide smartphones to their children can have an effect on the impact of smartphone use. The purpose of this study is to investigate the impact of parenting styles and the risk of attention deficit and hyperactivity disorder in preschool children. This study employs an observational analytic methodology with a cross-sectional approach. The data was analyzed using univariate and bivariate methods, as well as the chi-square test. Conforming to the results, democratic parenting was the most common kind of parenting in children who did not have ADHD, with 38 respondents (92.7%), and authoritarian parenting was the least common, with 17 respondents (89.5%). Meanwhile, for children at risk of ADHD democratic parenting is the most common parenting style, with 3 respondents (7.3%), while authoritarian parenting is the least common, with 2 respondents (10.5%). The chi-square correlation test revealed no connection between the styles of parenting in providing smartphones and the risk of attention deficit and hyperactivity disorder in preschool children ( $p\text{-value } 0.676 > 0.05$ ). The appropriate parenting style in handing smartphones to children from both parents and the closest people is very significant because it is related to the bad influence that children gain from using smartphones.

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### INTRODUCTION

Attention Deficit and Hyperactivity Disorder (ADHD) is a behavioral disorder in children, particularly those under the age of seven, that is linked to psychiatric disorders<sup>1</sup>.



This condition is distinguished by inattention, hyperactivity, and impulsivity<sup>2</sup>. If ADHD is not treated appropriately early on, it can have an influence on adulthood.

The most recent data on the prevalence of ADHD is not yet available. According to research in Egypt, ADHD affected 19.7% of 600 children, including 286 boys and 314 girls ranging in age from 5 to 12 years<sup>3</sup>. CDC data stated that in 2016, up to 6.1 million children aged 2-17 years suffer from ADHD, accounting for around 9.4% of the US population<sup>4</sup>. According to study conducted in many Indonesian towns, the prevalence of ADHD in Padang is 8%, Manado is 11.5%, and Semarang is 19.6%<sup>2</sup>.

ADHD is caused by a variety of circumstances. Genetic and environmental factors influence the occurrence of ADHD<sup>5</sup>. Based on one study, children who had ADHD siblings had a 5-7 times larger risk of developing ADHD than children who did not have ADHD siblings<sup>1</sup>. Meanwhile, one of the factors that influence the prevalence of ADHD in children is contact with electronic media such as smartphones<sup>6</sup>.

Smartphones are electronic stuff that can function as small computers and connect to the internet<sup>7</sup>. The use of smartphones among children is rising at the moment. The COVID-19 epidemic has also increased children's smartphone usage due to improvements in virtual learning approaches. The fact from BPS (2020) data, as many as 29% of Indonesia's early kids use cellular phones, with specifics for newborn less than one year old at 3.5%, under-five children aged 1-4 years at 25.9%, and preschoolers aged 5-6 years at 47.7%.

The use of smartphones in children actually has a positive impact if used correctly and for the appropriate duration. As stated by the American Academy of Pediatrics, smartphone use in children aged 2 to 5 years should be limited to one hour each day<sup>8</sup>. The good influence that can be delivered is to encourage children to actively learn, to enhance creativity, and to pique children's interest in their learning<sup>8</sup>.

On the other hand, frequent smartphone use in children can have a variety of harmful consequences, including developmental delays and learning difficulties<sup>9</sup>. Furthermore, smartphone use in children can raise the danger of acquiring ADHD symptoms<sup>10</sup>.

Parents must accompany and supervise their children while they use smartphones. According to the book *Psychology of Child and Adolescent Development*, the high use of smartphones in children is linked by parenting styles<sup>11</sup>. Hurlock classifies parenting styles into three categories: authoritarian, democratic, and permissive<sup>12</sup>. Appropriate parenting can influence the duration and use of smartphones, which determines how serious the negative impact is for the children.

All of the several publications point to a connection between parental practices and smartphone addiction in young children in preschool and primary school. According to Suherman's (2021) research, preschoolers who experience an authoritative parenting style are less likely to develop a technology addiction. According to Lee's (2015) research, children who had mothers who used their phones more frequently were more likely to get addicted to them. According to Budiarti (2022), primary school pupils who have excellent parenting practices experience less smartphone addiction. According to Hong (2021), middle school students' use of smartphones for specific purposes—such as social networking services and music/videos—has a beneficial impact on their risk of smartphone addiction. Overall, these results show how important parenting styles are when it comes to children's smartphone addiction; however, no studies have compared democratic, authoritarian, and permissive parenting styles in terms of their ability to prevent or lower the risk of smartphone addiction in young children attending preschool and school.

Following a preliminary study conducted by researchers at RA Al-Azhar Wlingi via a brief conversation with the Head of the Foundation when offline learning was brought out

after previously being online, some students experienced attention deficit and hyperactivity disorder such as difficulty concentrating and being unable to stay still while learning. After distributing the google-form regarding the usage of smartphones in children, 58 of the 65 respondents who completed it claimed that their children use smartphones, and 9 of them have personal smartphones. Giving smartphones to preschool children can have unintended consequences due to a lack of parental awareness about effective parenting. The goal of this study was to examine the relationship between parenting styles and the risk of attention deficit and hyperactivity disorder in preschool children.

## METHOD

This study uses an observational analytic design with a cross-sectional approach. The subjects in this study were preschool children aged 7 years at RA Al-Azhar Wlingi at 2022. The sample size was calculated using the Lemeshow formula to get 60 children. The sampling of this study used a proportionate random sampling technique from a total population of 171 children, where the researchers took representatives of each class as a sample. Samples were taken from classes A1, A2, A3, A4, A5, A6, B1, B2, B3, and B4 with each class taken 6 children as samples chosen at random with each child having the same opportunity to become sample. Respondents in this study were parents, homeroom teachers, and children who matched the inclusion requirements, particularly children who used smartphones, parents and homeroom teachers of preschool children aged 7 years at RA AL-Azhar Wlingi, and parents and homeroom teachers who were prepared to participate. Children with ADHD risk factors (family history of ADHD, low birth weight, early birth, seizures, head trauma, maternal alcohol/cigarette usage during pregnancy) were excluded.

To collect primary data for this study, a questionnaire instrument was distributed via Google Forms to preschool parents and homeroom teachers. Parents of preschool children completed questionnaires on parenting styles when it came to giving smartphones, and the validity and reliability tests were performed using the Pearson correlation bivariate analysis test, which generated a significant value of 0,05 and reliability  $> r$  table 0,254 yielding results  $0,413 > 0,254$ , indicating that the reliability has been proven. While the Attention Deficit and Hyperactivity Disorders (ADHD) questionnaire employs the ADHD Early Detection (Abbreviated Conners Rating Scale) from the SDIDTK book, which is filled out by the preschool children's homeroom teacher<sup>13</sup>. ACRS has been validated with a cut-off score of 13, sensitivity of 90.1%, and specificity of 93.94%<sup>10</sup>. Data analysis was performed using univariate analysis with frequency distribution and bivariate analysis with the chi-square test  $\alpha = 0.05$ . This research has passed the ethical test conducted by the Health Research Ethics Commission, Faculty of Medicine, Airlangga University.

## RESULTS

### Characteristics of Respondents

Data collection was carried out in May-June 2022 at RA Al-Azhar Wlingi. This study included 60 participants who met the inclusion and exclusion criteria. In the Table 1, the majority of respondents are under the age of six years old, with 28 respondents (46,7%) being female. There were 33 respondents (55%). Regarding parent characteristics, it is known that the majority of respondents' parents are between the ages of 26 and 35 (58,3%). The parents of those who completed online questionnaires were primarily female, with 53 respondents (88,3%). The most current educational history of parents is high school and bachelor, with 23 responses (38,3%), and 41,7% of parents are housewives.

Table 1. Characteristics of Respondents

| Characteristics of Respondents | Amount (f) | Percentage (%) |
|--------------------------------|------------|----------------|
| <b>Children Age</b>            |            |                |
| 4 years                        | 2          | 3,3            |
| 5 years                        | 20         | 33,3           |
| 6 years                        | 28         | 46,7           |
| 7 years                        | 10         | 16,7           |
| <b>Children Gender</b>         |            |                |
| Female                         | 33         | 55,0           |
| Male                           | 27         | 45,0           |
| <b>Parents Age</b>             |            |                |
| ≤25 years                      | 2          | 3,3            |
| 26-35 years                    | 35         | 58,3           |
| 36-45 years                    | 23         | 38,3           |
| <b>Parents Gender</b>          |            |                |
| Female                         | 53         | 88,3           |
| Male                           | 7          | 11,7           |
| <b>Parents Education</b>       |            |                |
| Unschooler                     | 1          | 1,7            |
| Primary School                 | 1          | 1,7            |
| Middle School                  | 3          | 5,0            |
| High School                    | 23         | 38,3           |
| Diploma                        | 9          | 15,0           |
| Bachelor                       | 23         | 38,3           |
| <b>Parents Occupation</b>      |            |                |
| Housewife                      | 25         | 41,7           |
| Entrepreneur                   | 14         | 23,3           |
| Employee                       | 8          | 13,3           |
| Teacher                        | 5          | 8,3            |
| PNS                            | 7          | 11,7           |
| Veterinarian                   | 1          | 1,7            |
| <b>Total</b>                   | <b>60</b>  | <b>100</b>     |

### Types of Parenting in Giving Smartphone

After analyzing and processing data from the online questionnaire on the type of parenting filled out by the respondent's parents, the results in Table 2 illustrate that the type of parenting style of parents in giving smartphones is democratic parenting at 68,3% and authoritarian parenting at 31,7%.

Table 2. Types of Parenting in Giving Smartphone

| Variable                                       | Amount (f) | Percentage (%) |
|--|------------|----------------|
| <b>Types of Parenting in Giving Smartphone</b> |            |                |
| Authoritarian                                  | 19         | 31,7           |
| Permissive                                     | 0          | 0              |
| Democratic                                     | 41         | 68,3           |
| <b>Total</b>                                   | <b>60</b>  | <b>100</b>     |

### Risk of Attention Deficit and Hyperactivity Disorder in Children

Based on the results of the of the ADHD Early Detection form (Abbreviated Conners Rating Scale) form, which was completed by the respondent's homeroom teacher, the results in Table 3 demonstrate that 5 respondents (8,3%) were at risk of developing ADHD, while the remaining 55 (91,7%) were not.

Table 3. Risk of Attention Deficit and Hyperactivity Disorder

| Variable                  | Amount (f) | Percentage (%) |
|---------------------------|------------|----------------|
| <b>ADHD Risk</b>          |            |                |
| Children without ADHD     | 55         | 91,7           |
| Children at risk for ADHD | 5          | 8,3            |
| <b>Total</b>              | <b>60</b>  | <b>100</b>     |

### Analysis of the Relationship between Types of Parenting in Providing Smartphones with the Risk of Attention Deficit and Hyperactivity Disorders in Children

In Table 4, the relationship between the parenting styles in providing smartphones and the risk of attention deficit and hyperactivity disorder in children who do not have ADHD is the highest type of parenting is democratic parenting in providing smartphones as many as 38 respondents (92,7%) and the lowest is authoritarian parenting style as many as 17 respondents (89,5%). Meanwhile, for children at risk for ADHD, parents with democratic parenting have as many as 3 respondents (7,3%) and parents with authoritarian parenting have as many as 2 respondents (10,5%).

Following the findings of the analysis using the Chi-Square statistical test with the SPSS 26 program,  $p\text{-value} = 0,676 > 0,05$ , indicating that  $H_0$  is accepted and  $H_1$  is rejected. There is no relationship between the type of parenting style used in providing smartphones and the risk of attention deficit and hyperactivity disorder in preschool children at RA Al-Azhar Wlingi.

Table 4. Analysis of the Relationship between Types of Parenting in Providing Smartphones with the Risk of Attention Deficit and Hyperactivity Disorders in Children

| Types of Parenting Style | Risk of Attention Deficit and Hyperactivity Disorders in Children |             |                           |                 | Total     |            |
|--------------------------|---|-------------|---------------------------|-----------------|-----------|------------|
|                          | Children without ADHD   |             | Children at risk for ADHD |                 |           |            |
|                          | F   | %           | f                         | %               | f         | %          |
| Authoritarian            | 17  | 89,5        | 2                         | 10,5            | 19        | 100        |
| Permissive               | 0   | 0           | 0                         | 0               | 0         | 0          |
| Democratic               | 38  | 92,7        | 3                         | 7,3             | 41        | 100        |
| <b>Total</b>             | <b>55</b>   | <b>91,7</b> | <b>5</b>                  | <b>8,3</b>      | <b>60</b> | <b>100</b> |
| α = 0,05                 |   |             |                           | p value = 0,676 |           |            |

$\alpha = 0,05$

$p\text{ value} = 0,676$

### DISCUSSION

In line with the study's findings, most of the parenting styles at RA Al-Azhar Wlingi were democratic. This is demonstrated by the percentage of research findings, which suggest that up to 68,3%, or 41 of 60 respondents, exhibit democratic parenting style. In this study, 31,7% or 19 of the 60 respondents demonstrated authoritarian parenting, and



permissive parenting style were not held by the respondent's parents. This is consistent with Rahmat (2018) research on effective parenting in the digital age <sup>14</sup>. Depending on the findings of his research, democratic parenting is effective for children. This parenting style teaches children to be critical in coping with and recognizing the positive and bad consequences of using smartphones, while without restricting children's access to technology (smartphones). Parents who practice democratic parenting raise children who are happy on the inside, adaptable, and able to form relationships with others.

Furthermore, parents who practice democratic parenting have effective supervision and control over their children, reducing the likelihood of smartphone misuse <sup>11</sup>. This is not the case if the child is raised by permissive or authoritarian parents. Children will be granted freedom without supervision by careless parents, especially when it comes to smartphone use, causing them to lose control and expose themselves to dangers. Children with authoritarian parents tend to feel stressed and rebel because of control, and children must accept their parents' demands. The more children are forbidden from using smartphones, the more curious the children become when they are introduced to smartphones.

The three parenting styles of authoritarian, permissive, and democratic are required in training children by the setting and conditions of the child's behavior <sup>15</sup>. This is due to the fact that as a parent, usually might employ not just one type of parenting, but also a combination of different parenting styles. In order to educate and raise children in the digital age, parents must be aware of their child's growth <sup>16</sup>. The authoritarian parenting style is used with children depending on the occasion and conditions. Permissive parenting allows parents to provide their children with freedom in a constructive way. As a result, the three of parenting styles, authoritarian, permissive, and democratic, collaborate to reduce the detrimental impact of smartphone use on children.

Excessive smartphone use in children has been linked to an increase in the prevalence of ADHD. There is a pretty high association (coefficient contingency = 0.423) between smartphone use and the risk of ADHD in children <sup>17</sup>. Several factors, including the respondent's age and gender, can influence Attention Deficit and Hyperactivity Disorder in preschool children. By the study's findings, children who are at risk for ADHD are between the ages of 5 and 6 years old, with the majority of respondents being between the ages of 6 years old is 3 respondents (60%) and a small number being between the ages of 5 and 6 years old is 2 respondents (40%). The findings of this study agree with the research that indicates the majority of children at risk of developing ADHD are under the age of five <sup>10</sup>. ADHD is common in children aged 3-17 years, with a frequency of 2-7.9% in preschool children aged 7 years <sup>10</sup>. The younger a child is when he or she begins using a smartphone (5-6 years), the greater the risk of ADHD. This is because preschool age (5-6 years) is the optimum era for rapid brain growth.

Based on the gender of the respondents, it is known that 5 of them (100%), that is males are at risk of ADHD. This is consistent with the findings, which discovered that the majority of children at risk for ADHD were males <sup>10</sup>. The cause could be genetic systems related to sex, with males being more aggressive than females. Furthermore, the prevalence of ADHD is 7:3 higher in males than in females, which is connected with behavioral and cognitive styles in children. Males are more energetic than females and have lesser self-control abilities <sup>5</sup>.

In this study, it was shown that in children who did not have ADHD, the highest kind of parenting style was democratic parenting, which had 38 respondents (92,7%) and the lowest was authoritarian parenting, which had 17 respondents (89,5%). Meanwhile, for children at risk for ADHD, parents with democratic parenting have as many as 3 respondents (7,3%) and parents with authoritarian parenting have as many as 2 respondents (10,5%). At RA Al-Azhar Wlingi, it was discovered that there was no

connection between the kind of parenting style in providing smartphones and the risk of Attention Deficit and Hyperactivity Disorder in preschool children ( $p\text{-value } 0,676 > 0,05$ ).

This study contradicts with the Relationship between Gadget Use (Smartphone) and Suspects of Attention Deficit and Hyperactivity Disorder at Al Kautsar Elementary School Bandar Lampung, which discovered a connection between parental supervision when using gadgets (smartphones) and suspected ADHD<sup>2</sup>. This study's disagreement may be influenced by social and environmental aspects of preschool children, such as parenting from both parents and closest family members in giving children smartphones. This is because only one parenting style was known in the study, not both. In fact, both parents, notably father and mother, are required to follow and monitor children in order to limit the influence of using smartphones in parenting, particularly when giving smartphones<sup>18</sup>.

Caring for, raising, and educating children is not simply the responsibility of the mother who gave birth to them. On the other hand, a father has the task of caring for, nurturing, and educating his children<sup>18</sup>. Parents must have diverse perspectives or methods of raising children. One of them is related to the acceptable form of parenting and the suitable length for giving smartphones to children. This difference in perception is driven by preschool children's perspectives on understanding, seeing, and using smartphones<sup>19</sup>.

Perception or response is a person's point of view on anything. This perception can be triggered by a novel or unknown event or entity. A lack of parental awareness about the best form of parenting and the right period of smartphone use can be devastating to children's growth and health. The intensity of smartphone use has a substantial influence on attention deficit disorders and hyperactivity in children<sup>17</sup>. One hour of smartphone use every day can raise the risk of attention deficit and hyperactivity disorder in children. According to research on screen time guidelines for children, the screen time limit for children aged 2-5 years is a maximum of 1 hour per day with careful supervision over the content seen by children<sup>20</sup>. Inconsistent parenting quality and the selection of non-educational content for children who use smartphones can have a negative impact on child development<sup>21</sup>. As a result, both parents play an important role in reducing the negative impact of smartphone use on children, specifically by supervising children's smartphone use, selecting content/applications that are appropriate for children's developmental needs, and enforcing rules regarding the duration of smartphones use<sup>22</sup>.

Environmental influences, particularly the local environment, can influence the development of children in addition to the parenting style of both parents. Family situations are numerous and varied, such as working parents who leave the house, causing parenting practices to be frequently substituted by others, such as babysitters or grandparents. Based on research, grandparents' parenting styles can have both beneficial and negative effects on a child's personality<sup>23</sup>. Grandparenting is a style of parenting in which grandparents allow freedom while simultaneously monitoring and setting clear boundaries for their grandkids.

The type of parenting of grandparents in children is carried out by grandparents' experiences and observations. Grandparents' parenting style is predominantly democratic. Their parenting style tends to show children love by establishing responsibility through coaching, as well as attention in the form of morality and spirituality<sup>24</sup>. This contradicts with research, which discovered two tendencies in grandparents' parenting towards their grandkids, mainly permissive parenting and parenting in the midst of the permissive and authoritarian styles<sup>25</sup>. Mentoring children's smartphone use is actually better done by both parents rather than grandparents. This is due to the age difference between grandparents and children, as well as grandparents' relatively limited knowledge of smartphones, so grandparents tend to allow their children to use smartphones without assistance because grandparents do not understand the proper use of smartphones in children.

From this study, regardless of the sort of parenting used by parents when giving their children smartphones, children are still at risk of getting ADHD. This is due to the fact that numerous additional factors, both genetic and environmental, might increase the risk of ADHD in children. To prevent and limit the detrimental influence of smartphone usage on children, parents must exercise careful supervision and assistance, particularly in the content and duration of smartphone use. Furthermore, it is critical to create a pleasant environment and a healthy lifestyle for children in order to maximize their development and reduce the risk of ADHD in children.

## CONCLUSION

The findings of this study, there is no relationship between the type of parenting style used by parents in supplying smartphones and the possibility of attention deficit and hyperactivity disorder in preschool children at RA Al-Azhar Wlingi. Suggestions for future research are expected to be able to investigate further the type of parenting of both parents and those closest to the child when it comes to giving cellphones. Furthermore, it can increase the risk of attention deficit and hyperactivity disorders in preschool children.

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