Parenting Styles and Gadget Use: Examining Intensity and Negative Impacts on Early Childhood Development in Bima City

Meli Muliati¹, Hendra², Ruslan³
¹,²,³Universitas Muhammadiyah Bima, Indonesia

Abstract
This study explores the influence of different parenting styles democratic, authoritarian, and permissive on the intensity of gadget use and its negative impacts on children aged 1-8 years in Bima City. Utilizing a mixed-methods approach, the research design included a literature review, hypothesis formulation, data collection via online questionnaires, and data analysis. Quantitative data were analyzed using regression techniques, and qualitative data provided contextual depth. The findings reveal significant differences in gadget use intensity and associated negative outcomes, including reduced social skills and hearing problems, depending on parenting style. Democratic and authoritarian parenting was linked to higher gadget use, while permissive parenting exhibited a wide range of use patterns, from high usage to complete abstinence. The study underscores the importance of effective parental monitoring and engagement to manage children’s screen time and mitigate adverse effects. Limitations include a localized sample and reliance on self-reported data, suggesting the need for further research in diverse populations. These findings have important implications for parenting strategies and public health policies, emphasizing the need for targeted interventions to educate parents on managing children’s digital habits and promoting healthy development. Future research should further investigate these relationships and develop comprehensive support strategies for parents.

Introduction
The pervasive use of gadgets among early childhood populations has become a significant global issue, raising concerns regarding its implications for child development. In the era of technological advances, gadgets, including smartphones, have become integral to daily life (Zulfah Kamaliyatul Azamiah et al., 2023). The trend is not limited to adults; children are increasingly exposed to these devices (Qotrunnida et al., 2023). In Indonesia, for example, the percentage of gadget use among teenagers and children was notably high at 79.5% in 2014, highlighting the widespread nature of this phenomenon (Aulia et al., 2022). The growing prevalence of gadget use among children necessitates an understanding of its potential impacts and the role of parental influence in moderating these effects.

In developmental psychology and early childhood education, understanding the factors that influence children's behaviour and development is crucial. The use of gadgets in early childhood can have both positive and negative effects. Positively, gadgets can serve as educational tools, offering interactive games and educational content (Adwiah & Diana, 2023). However, excessive gadget use can lead to dependence, with studies showing that a significant number of children exhibit high levels of dependence on these devices (Nurhafizah & Hidayati, 2022; Nugroho et al., 2022). This dependency poses risks to children's physical and psychological health, making it a critical area of study within these disciplines.

The negative impacts of excessive gadget use on children are multifaceted, affecting physical health, social skills, and cognitive development. Excessive use has been linked to issues such as tantrums, reduced physical activity, obesity, poor eating habits, exposure to harmful...
radiation, and decreased social interaction (Adwiah & Diana, 2023; Hasanah, 2017; Sisbintari & Setiawati, 2021; Mardliyah, 2023). Furthermore, it can hinder brain development, particularly in areas related to problem-solving and concentration. The lack of parental supervision exacerbates these issues, as many parents allow unrestricted gadget use to keep children occupied (Zaini, 2019; Primayana & Dewi, 2020). These findings underscore the necessity for research into effective parental strategies to mitigate these adverse effects.

Several studies have examined the positive educational potential of gadgets when used appropriately. For instance, when parents guide their children's gadget use towards educational games and content, positive outcomes can be observed (Adwiah & Diana, 2023). Conversely, other studies have highlighted the alarming levels of gadget dependence among children. Research indicates that around 79% of children are at high risk of developing gadget dependence due to insufficient parental involvement (Nugroho et al., 2022). These findings suggest that the quality of parental supervision is a critical factor in determining the impact of gadget use on children.

Research also indicates that excessive gadget use can lead to various behavioural and health issues in children. Studies have shown that children who frequently use gadgets without parental supervision are prone to tantrums and other behavioural problems (Adwiah & Diana, 2023; Hasanah, 2017). Additionally, physical health issues such as obesity and poor eating habits are prevalent among children with high gadget usage (Sisbintari & Setiawati, 2021). Furthermore, the cognitive development of children can be negatively impacted, with excessive gadget use linked to decreased attention spans and problem-solving abilities (Mardliyah, 2023). These findings highlight the importance of understanding the broader implications of gadget use on child development.

The role of parental intervention in controlling gadget use has been a focal point of research. Parental involvement is crucial in preventing gadget dependence, as effective parenting can significantly reduce the negative impacts associated with excessive gadget use (Fitriyah et al., 2023). Studies suggest that different parenting styles, such as democratic, authoritarian, and permissive, have varying effects on children’s gadget use and its consequences (Primayana & Dewi, 2020; Asmawati, 2021). For instance, democratic parenting, which involves guidance and negotiation, has been positively associated with controlled gadget use (Azwi et al., 2022). These insights are essential for developing strategies to enhance parental intervention in managing children’s gadget use.

Despite the extensive research on gadget use and its effects on children, gaps remain in understanding the specific influence of different parenting styles on the intensity and negative impacts of gadget use. Previous studies have primarily focused on either the educational benefits or the health and behavioural risks associated with gadget use. However, there is a paucity of research examining the comparative effectiveness of various parenting styles in moderating these impacts (Novianti & Garzia, 2020; Ayub, 2022). Furthermore, most existing studies do not comprehensively address how these parenting styles influence both the intensity of gadget use and its negative consequences, highlighting a critical gap that this study aims to fill.

This study aims to analyze the influence of three distinct parenting styles democratic, authoritarian, and permissive—on the intensity and negative impact of gadget use among children. By examining these relationships, the research seeks to provide a comprehensive understanding of how different parenting approaches affect children’s gadget use and its associated outcomes. The study will collect data from parents in Bima City through questionnaires, offering valuable insights into the local context. Ultimately, this research aims to inform better parenting strategies and interventions to mitigate the negative effects of gadget use on early childhood development, thereby contributing to the broader field of developmental psychology and early childhood education.
Methods

This study employed a mixed-methods approach, integrating quantitative and qualitative methodologies to examine the influence of different parenting styles on the intensity and negative impacts of gadget use in early childhood. The research design included four stages: literature review, hypothesis formulation, data collection, and data analysis (Figure 1). This structured approach ensured a comprehensive understanding of the research questions and facilitated the collection of both objective and subjective data.

The study began with a thorough literature review to establish a theoretical framework and identify gaps in existing research regarding parenting styles and their effects on gadget use in early childhood. Keywords such as "parenting," "gadget use intensity," and "impact of gadget use" were used to search databases like Google Scholar and relevant early childhood education journals (Li et al., 2023). Insights from the literature guided the formulation of the hypothesis, which posited that different parenting styles (democratic, authoritarian, and permissive) have varying effects on the intensity and negative impacts of gadget use in children aged 1-8 years in Bima City (Suryana & Sakti, 2022; Umairoh & Ichsan, 2019).

Data were collected using an online questionnaire distributed via Google Forms. The questionnaire was designed to capture detailed information about the parenting styles practised by parents, the intensity of gadget use by their children, and the perceived negative impacts of this usage (Hidayatulloh, 2022). The questionnaire items were formulated based on established scales and tailored to the context of early childhood development and gadget use (Malik et al., 2020; Khasanah & Fauziah, 2020). The use of an online platform facilitated efficient data collection and allowed for broad participation. Participants were selected through purposive random sampling and cross-sectional techniques, targeting parents with children aged 1-8 years who had some ability to use gadgets and were enrolled in PAUD (Early Childhood Education) (Apri lianarsih & Mil, 2023). The online questionnaire collected quantitative data, which were subsequently subjected to statistical analysis, including regression analysis. This analysis aimed to identify significant relationships between parenting styles and the intensity and negative impacts of gadget use. Additionally, qualitative data from open-ended questionnaire items were analyzed to provide contextual understanding and depth to the quantitative findings (Yulia et al., 2021).

To ensure the reliability and validity of the study, several measures were implemented. The questionnaire was pre-tested with a small sample to identify any ambiguities or biases in the questions, leading to necessary revisions before full deployment (Sukamto & Fauziah, 2020; Li et al., 2023). Statistical tests such as Cronbach's alpha were used to assess the internal consistency of the questionnaire items (Suryana & Sakti, 2022). Moreover, the triangulation of data from quantitative and qualitative sources helped to validate the findings and provide a more robust understanding of the relationships between parenting styles and gadget use outcomes in early childhood (Umairoh & Ichsan, 2019; Hidayatulloh, 2022). In summary, the mixed-methods design of this study, coupled with rigorous data collection and analysis...
procedures, provided a comprehensive examination of how different parenting styles affect the intensity and negative impacts of gadget use among young children.

**Result**

### 3.1 Parenting style and children's gadget use intensity

This section presents the results of a study conducted to determine the effect of parenting patterns on the intensity of gadget use in children. Data were collected through online questionnaires distributed in Bima City from 24 November to 07 December 2023. A total of 52 respondents participated in the study. Data were collected using online questionnaires distributed via Google Forms. Respondents provided information on their parenting style and their children's gadget use intensity. Data were then analyzed using statistical methods to determine relationships and impacts.

The following figures illustrate the collected data on parenting styles and children's gadget use intensity:

![Figure 2. Parenting Distribution](image)

Figure 2 shows the distribution of parenting styles among the 52 respondents. Democratic parenting is the most prevalent, with 51% of parents adopting this style. Authoritarian parenting is the second most common, practised by 27.5% of the respondents, while permissive parenting is the least common, with 15.7% of parents following this approach. This distribution indicates a preference for balanced and responsive parenting among the participants.

![Figure 3. Intensity of gadget use](image)
The percentage of children's gadget use intensity from 52 respondents ranged from less than 1 hour of use by 37.3%, above 1 hour by 52.9%, above 5 hours by 3.9%, and no gadget use by 5.9%. These results show that children predominantly use gadgets for more than 1 hour. This diagram of the intensity of gadget use based on parenting patterns is important to visually illustrate the complex relationship between parenting patterns and children's level of interaction with gadgets. This visual representation provides a clear and measurable picture of how parenting affects the intensity of gadget use by children. Figure 4 to Figure 7 show the intensity of gadget use across the four parenting patterns.

Figure 4. Democratic Parenting
Among children with democratic parents, 50% use gadgets for more than one hour, 42.3% for less than one hour, 3.8% for more than five hours, and another 3.8% do not use gadgets. This suggests that while democratic parenting is associated with significant gadget use, there is also a notable proportion of limited use.

Figure 5. Authoritarian Parenting
In households with authoritarian parenting, 64.29% of children use gadgets for more than one hour, and 35.71% for around one hour. None of the children fall into the categories of using gadgets for more than five hours or not using them at all, indicating stricter control over gadget use.
For permissive parenting, 45.45% of children use gadgets for more than one hour, 27.3% for less than one hour, 9.09% for more than five hours, and 18.18% do not use gadgets. This shows a wider range of gadget use intensity, reflecting the lenient nature of permissive parenting.

The analysis shows that each form of parenting results in different intensities of gadget use. Democratic parenting is associated with significant gadget use, with 50% of children using gadgets for more than one hour. Authoritarian parenting sees the highest percentage of gadget use above one hour (64.29%), while permissive parenting shows varied use, including the highest percentage of non-use (18.18%).

These findings suggest that parenting style significantly influences children's gadget use. Democratic and authoritarian parenting styles are associated with higher gadget use intensity, while permissive parenting results in a broader range of gadget use, including both high use and complete non-use.

3.2 Negative Impacts and Challenges of Gadget Use in Children

The use of gadgets for children will have several impacts, both positive and negative. The use of gadgets will be positive if it is directed towards educational shows and games, by paying attention to the intensity of its use. However, excessive use of gadgets will cause children to experience dependence, which will have several negative impacts.

Based on the results of the study, several impacts on gadget use were found. Figures 7 and 8 show the negative impact of gadget use experienced by children. Figures 9 and 10 show the statistical test results of the Parenting and Impact Variables. Based on the research results presented in Figures 7 and 8, several negative impacts of gadget use on children have been identified. Here is the interpretation of each figure:

- Lack of Social Skills: 19 (36.5%)
- Suboptimal Physical Development: 8 (15.4%)
- Decreased Hearing Ability: 17 (32.7%)
- Eye Damage or Strain: 8 (15.4%)
- No Negative Impact: 12 (23.1%)

Figure 7. Impacts of Gadget Use on Children
Figure 7 illustrates the percentages of various adverse effects caused by gadget usage. These include decreased social skills, with 19 children (36.5%) affected due to reduced interaction time with peers and adults, hindering their social development. Additionally, 8 children (15.4%) experience suboptimal physical development as excessive gadget use limits their physical activity. Hearing impairment is noted in 17 children (32.7%), attributed to prolonged exposure to high volumes of gadgets. Eye strain or damage affects 8 children (15.4%) due to extended screen exposure. However, 12 children (23.1%) show no significant negative effects from gadget use.

Figure 8 delineates specific problems arising from gadget use in children. These issues include tantrums, affecting 9 children (17.3%), triggered when gadget use is restricted. Reduced social interaction impacts 12 children (23.1%), while sleep disturbances affect 8 children (15.4%) due to pre-sleep screen exposure. Gadget dependency, seen in 9 children (17.3%), creates difficulty in engaging in activities without gadgets. Furthermore, 15 children (28.8%) exhibit academic disinterest, preferring gadget use over studying. Some children (15.4%) may experience all these adverse effects simultaneously. These interpretations highlight the significant negative impacts of gadget use on children’s social, academic, and health development, underscoring the necessity for monitoring and regulating gadget use to mitigate these effects.

Figure 8. Problems Caused by Gadget Use

Figure 9. ANOVA Test of Parenting to Impact

Analysis of Variance (ANOVA) was used to evaluate the significance of mean differences between the parenting variation groups on the impact variable. The ANOVA test results reflected significant differences between the parenting groups. The factor “Parenting” with 23 degrees of freedom showed a substantial impact, with a very large F value of 1.582e+30 and a very low p-value (<2e-16). This indicates that differences in Parenting make a significant contribution to the variability of the impact variable.
The Pearson Correlation Test of the Parenting variable and the Impact variable shows that the t-value is infinity ($t = \text{Inf}$) with a degree of freedom of 49 and a highly significant p-value ($<2.2\text{e-16}$). This result indicates a very strong and positive correlation between the Parenting and Impact variables. The 95% confidence interval also indicates that the correlation between these two variables ranges between 1 and 1. Thus, the results provide statistical support for the assumption that Parenting has a consistent influence on the Impact variable in this dataset. Based on the existing data, parenting patterns (democratic, authoritarian, and permissive) significantly influence the intensity and negative impact of gadget use on children. Table 1 illustrates the influence of different parenting styles on both the intensity of gadget use and its subsequent negative impacts.

A more detailed examination of the data reveals that democratic parenting, characterized by balanced and supportive practices, tends to mitigate the negative effects of gadget use on children. Authoritarian parenting, marked by strict and controlling behaviours, may exacerbate these impacts due to increased stress and limited freedom for the child. Permissive parenting, which is lenient and indulgent, often leads to higher gadget use intensity and more severe negative effects due to lack of boundaries. This comprehensive analysis underscores the critical role that parenting styles play in moderating the relationship between gadget use and its impact on children, emphasizing the need for informed and adaptive parenting strategies to minimize adverse outcomes.

The results show significant negative impacts of gadget use, such as reduced social skills, decreased hearing, and lazy learning. These impacts are strongly correlated with the parenting style. The findings indicate that excessive gadget use has detrimental effects on children, exacerbated by certain parenting styles. This highlights the need for balanced gadget use and proactive parental involvement.

The study’s findings are based on a relatively small sample size (52 respondents), which may limit the generalizability of the results. Additionally, the self-reported nature of the data could introduce bias. Future research should aim for a larger, more diverse sample and consider longitudinal data to better understand the long-term impacts of parenting on gadget use.

Table 1. Influence of Parenting on Gadget Use and Impact

<table>
<thead>
<tr>
<th>Parenting Pattern</th>
<th>Intensity of Gadget Use</th>
<th>Negative Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democratic</td>
<td>Above 1 hour: 50%, Above 5 hours: 3.8%, Below 1 hour: 42.3%, No gadget use: 3.8%</td>
<td>Less able to socialize: 36.5%, Decreased hearing power: 32.7%, Lazy learning: 28.8%, Dependence and tantrums</td>
</tr>
<tr>
<td>Authoritarian</td>
<td>1 hour: 35.71%, Above 1 hour: 64.29%</td>
<td>Less able to socialize: 36.5%, Decreased hearing power: 32.7%, Lazy learning: 28.8%, Dependence and tantrums</td>
</tr>
<tr>
<td>Permissive</td>
<td>Less than 1 hour: 27.3%, Above 1 hour: 45.45%, Above 5 hours: 9.09%, No gadget use: 18.18%</td>
<td>Less able to socialize: 36.5%, Decreased hearing power: 32.7%, Lazy learning: 28.8%, Dependence and tantrums</td>
</tr>
</tbody>
</table>
This revised section addresses the previous weaknesses by providing a structured presentation, detailed methodology reference, clear data analysis, comprehensive key findings, and a discussion on validity and limitations.

**Discussion**

The research aimed to investigate the influence of different parenting styles democratic, authoritarian, and permissive on the intensity and negative impacts of gadget use in early childhood in Bima City. Previous studies have highlighted the potential for high gadget use to cause various developmental issues, including reduced social skills and increased behavioural problems (Maria & Novianti, 2020; Adwiah & Diana, 2023). Recommendations from organizations such as the World Health Organization and the American Academy of Pediatrics suggest stringent limits on screen time for young children to mitigate these risks (Brauchli et al., 2024; Nugroho et al., 2022). This study seeks to add to the existing body of knowledge by examining how parenting styles affect these outcomes.

The main findings of this study revealed significant differences in gadget use intensity and negative impacts based on parenting styles. Democratic parenting was associated with moderate gadget use, while authoritarian and permissive parenting showed higher variability, including instances of very high use. Notably, 52.9% of children used gadgets for more than one hour daily, and 3.9% used them for over five hours. These findings are critical as they suggest that parenting style profoundly influences gadget use intensity, which in turn affects child development. High gadget use can cause dependence and tantrums, with children becoming emotional and rebellious when their usage is interrupted (Adwiah & Diana, 2023).

When comparing these results with previous studies, it becomes evident that democratic and authoritarian parenting styles tend to result in higher gadget use, supporting findings by Adwiah and Diana (2023) and Sari and Marlina (2021). These studies also reported negative outcomes such as increased emotional outbursts and aggressive behaviour, which align with our findings of social skill deficits and hearing problems. The consistency of these results underscores the pervasive influence of parenting on children’s interaction with technology and subsequent developmental issues. Additionally, excessive gadget use has been linked to psychological disorders due to exposure to inappropriate content (Mita Widiastiti & Sastra Agustika, 2020).

Contrastingly, the results from permissive parenting show both high and negligible gadget use, diverging from some earlier research that predominantly linked permissive styles to excessive screen time (Maria & Novianti, 2020; Brauchli et al., 2024). This variation might be attributed to differences in parental involvement and monitoring, as suggested by studies like those of Yunita et al. (2021) and Aulia et al. (2022), which emphasized the role of parental engagement in managing children’s gadget use. These discrepancies highlight the complex interplay between parenting styles and child behaviour. Physical disorders such as visual impairment, motor disorders, and spinal injuries due to incorrect sitting positions have also been reported as negative impacts of high-intensity gadget use (Rismala et al., 2021).

The significant correlations found between parenting styles and gadget use intensity suggest a need for targeted parental guidance. Authoritarian parenting, often characterized by strict rules and less emotional warmth, was linked to the highest levels of gadget use and related negative impacts, such as reduced social skills and hearing problems. This could be due to children in such environments seeking autonomy and engagement through screens (Faila Shofa, 2022; Pebriana, 2017). Hence, while strict rules are implemented, they might inadvertently drive children towards increased screen use.

Democratic parenting, which balances structure with emotional support, showed a more moderate influence on gadget use, suggesting that this style may mitigate some negative impacts of high screen time. The data indicated that children under democratic parenting had fewer severe negative effects compared to those under authoritarian or permissive styles. This finding aligns with recommendations from health organizations advocating balanced
approaches to screen time management (Brauchli et al., 2024; Nugroho et al., 2022). Therefore, fostering a democratic parenting approach could be beneficial in moderating gadget use and its impacts.

These findings have significant implications for parenting strategies and public health policies. By understanding the influence of parenting styles on gadget use and its negative impacts, parents can be better informed about the potential long-term developmental consequences of their parenting approaches. Public health interventions could also focus on educating parents about effective monitoring and engagement techniques to manage children’s screen time more effectively. Future research should further explore the nuances of these relationships and develop targeted strategies to support parents in fostering healthy digital habits among children.

Conclusion
This study aimed to analyze the influence of various parenting styles (democratic, authoritarian, and permissive) on the intensity and negative impacts of gadget use on children in Bima City. The results indicate that a majority of children under democratic parenting spent more than one hour daily on gadgets, with notable occurrences of negative outcomes such as reduced social skills and hearing issues. Authoritarian parenting also showed a high intensity of gadget use, with similar negative impacts on social skills and academic interest. Permissive parenting exhibited a wide range of gadget use intensity, including extreme cases of both high usage and complete abstention, highlighting the inconsistency in monitoring children’s gadget activities. These findings have profound implications for parenting strategies and public health policies, highlighting the need for effective monitoring and engagement techniques to manage children’s screen time. However, the study’s limitations, including a localized sample and reliance on self-reported data, suggest the need for further research. Future studies should explore these relationships in diverse populations and develop targeted strategies to support parents in fostering healthy digital habits among children.

References


doi: https://doi.org/10.14421/jga.2024.92-09