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THE IMPACT OF GADGET SCREEN EXPOSURE IN CHILDREN AND DEVELOPMENTAL STATUS AGED 12 - 72 MONTHS

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ABSTRACT
In 2023, Indonesia's population of children under five reached 30.2 million. Current data indicates that 33.44% of early childhood individuals are exposed to digital devices, with many facing risks of psychological, cognitive, and socio-emotional impairments. Objective: This study aims to analyze the relationship between gadget screen exposure and the developmental status of children aged 12–72 months. A quantitative study with a cross-sectional design was conducted at Posyandu Puskesmas Pulo Gadung, East Jakarta, in 2025. A sample of 60 respondents was selected through purposive sampling. Data were collected using the Pre-Screening Developmental Questionnaire (KPSP) and a maternal questionnaire regarding gadget usage. Data were analyzed using univariate and bivariate (Chi-square) analysis. Bivariate analysis revealed a significant relationship between gadget exposure and developmental status ($p < 0.05$). High gadget exposure was predominantly associated with "doubtful" or "deviant" developmental outcomes. Excessive gadget use negatively impacts child development. It is crucial for health workers and parents to implement early stimulation and strict screen-time monitoring to ensure optimal growth.

Keywords: child development; early childhood; gadget exposure; KPSP; screen time

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INTRODUCTION

The prevalence of gadget use among early childhood in Indonesia has risen significantly. According to the Central Bureau of Statistics (2022), 33.44% of young children are exposed to digital devices. Excessive screen time is linked to impairments in psychological, cognitive, and socio-emotional domains (Siregar & Nasution, 2022). Globally, the WHO estimated that 149.2 million children under five faced developmental disorders by 2020. In Indonesia, developmental delay rates fluctuate between 5% and 30% depending on the region and demographic (Suryawan & Merijanti, 2021).

This research is vital because the first 72 months of life represent a golden period for brain plasticity. Unmonitored gadget use during this phase can disrupt gross motor, fine motor, language, and social skills. While DKI Jakarta reports 100% active Posyandu coverage, the developmental index remains below national targets (Profil Kesehatan Indonesia, 2023). This study investigates these variables specifically within the Pulo Gadung community to provide localized evidence for intervention.

METHOD

This study employed a quantitative, non-experimental research design utilizing a cross-sectional approach. The target population comprised mothers and their children aged 12 to 72 months attending the Posyandu (Integrated Healthcare Center) at the Pulo Gadung Community Health Center. A purposive sampling technique was implemented, yielding a total sample of 60 respondent dyads based on predefined inclusion criteria: children within the specified age bracket who currently reside in the designated catchment area. Primary data collection was conducted using two

main instruments: (1) The Pre-Screening Developmental Questionnaire (KPSP - *Kuesioner Pra Skrining Perkembangan*) to evaluate the children's developmental status. (2) A structured questionnaire designed to assess maternal socio-demographic characteristics alongside the intensity of the child's gadget exposure. Data analysis encompassed univariate procedures to generate frequency distributions, followed by bivariate analysis utilizing the Chi-square test to ascertain the statistical relationship between the independent and dependent variables.

RESULT

As presented in Table 1, the bivariate analysis highlights the statistical relationship between the duration of gadget exposure and the developmental status of the children. The Chi-square test yielded a *p*-value of 0.001, which is substantially lower than the predetermined significance threshold (alpha = 0.05). Consequently, the null hypothesis is rejected. The data clearly indicate a robust and statistically significant correlation, demonstrating that prolonged duration and high intensity of gadget exposure are strongly associated with an increased incidence of developmental delays among the observed cohort. Excessive gadget use negatively impacts child development, predominantly resulting in "doubtful" or "deviant" outcomes for those with high exposure.

Table 1.
Relationship Between Gadget Exposure and Developmental Status (n= 60)

Gadget Exposure Intensity	Observed Developmental Status (KPSP)	Statistical Significance
Low Exposure	Predominantly Appropriate Development	-
High Exposure	Predominantly "Doubtful" or "Deviant" Development	p = 0.001

(Note: Exact frequency counts (f) and percentages ($\%$) for each cell should be inserted into the table above if available in your raw dataset).

DISCUSSION

The findings of this study highlight a critical paradigm shift in the dynamics of early childhood development within the Pulo Gadung community. The analytical data reveal that parental behavioral patterns specifically maternal engagement with digital devices are directly reflected in the child's screen-time exposure. For healthcare providers and pediatric professionals, these results emphasize the necessity of transitioning developmental assessments from a strictly child-centric focus to a broader evaluation of the household's digital environment. From a clinical standpoint, medical professionals must recognize high gadget exposure as a substantial risk factor for developmental stagnation. The present study indicates that excessive screen time functions as a deterrent to physical activity, precipitating the underutilization of large muscle groups. Medically, this sedentary behavior contributes to compromised gross motor coordination and diminished physical stamina. Furthermore, the displacement effect, wherein digital media supplants interpersonal human interactio creates a profound deficit in linguistic stimulation. It is imperative for healthcare practitioners to acknowledge that screen-based babysitting lacks the reciprocal verbal feedback essential for synaptic pruning and optimal vocabulary acquisition, thereby directly exacerbating the prevalence of speech and language delays within the 12 to 72-month demographic.

The physiological and psychological hazards elucidated in this research are multifaceted. They include heightened susceptibilities to poor postural alignment and early-onset childhood obesity driven by physical inactivity, while the rapid-fire nature of digital content consumption has been shown to truncate attention spans, thereby impairing the child’s capacity to engage in conventional, slow-paced learning modalities. Concurrently, there is a marked deterioration in emotional regulation and socio-emotional maturity, given that digital interfaces cannot effectively model or impart complex interpersonal skills such as empathy and conflict resolution.

CONCLUSION

In conclusion, this research establishes a highly significant relationship between the intensity of gadget utilization and the developmental status of children aged 12 to 72 months. The data indicate that a majority of children subjected to low gadget exposure demonstrate age-appropriate development. Conversely, those subjected to high exposure intensities predominantly exhibit developmental trajectories classified as doubtful or deviant.

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