

**HUBUNGAN FUNGSI EKSEKUTIF OTAK TERUKUR PASH-BRAINS
DENGAN DURASI *SCREEN TIME* PONSEL PINTAR PADA REMAJA AWAL
SMP NEGERI 115 JAKARTA TAHUN 2025**

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ABSTRAK

Latar Belakang: Durasi *screen time* pada remaja meningkat pesat dan dapat memengaruhi fungsi eksekutif, terutama pada masa perkembangan. Meskipun ponsel pintar merupakan gawai yang paling sering digunakan, penelitian mengenai pengaruh *screen time* ponsel pintar terhadap fungsi eksekutif pada remaja awal masih terbatas. Selain itu, belum ada studi yang menggunakan PASH-BRAINS, instrumen yang menilai fungsi eksekutif konvensional dan transendental secara bersamaan, pada remaja awal. **Tujuan:** Menilai hubungan antara durasi *screen time* ponsel pintar dan fungsi eksekutif terukur PASH-BRAINS pada remaja awal. **Metode:** Studi potong lintang pada 83 siswa kelas VII (usia 12–13 tahun) dilakukan di SMP Negeri 115 Jakarta. Durasi *screen time* diperoleh dari rata-rata penggunaan ponsel pintar selama satu minggu terakhir. Fungsi eksekutif dinilai melalui kuesioner PASH-BRAINS. Analisis univariat digunakan untuk melihat distribusi data dan analisis bivariat untuk menguji hubungan. **Hasil dan Pembahasan:** Mayoritas peserta memiliki *screen time* berlebih serta gangguan fungsi eksekutif derajat ringan–sedang. Tidak ditemukan hubungan signifikan antara *screen time* ponsel pintar dan fungsi eksekutif otak, termasuk aspek konvensional dan transendental. Hal ini kemungkinan dipengaruhi oleh homogenitas distribusi *screen time* serta faktor perancu yang tidak diukur. Analisis tambahan menunjukkan adanya hubungan signifikan antara skor total PASH-BRAINS dengan domain FEK, tetapi tidak dengan FET dan FEK-FET. Temuan sejalan dengan perkembangan fungsi transendental yang masih berlangsung. Tidak ditemukan hubungan antara usia pertama kali menggunakan ponsel dan durasi *screen time* saat ini. **Kesimpulan:** Tidak terdapat hubungan antara durasi *screen time* ponsel pintar dan fungsi eksekutif pada remaja awal. Penelitian lanjutan dengan analisis multivariat dan variabel perancu tambahan diperlukan.

Kata Kunci: fungsi eksekutif, PASH-BRAINS, *screen time*, ponsel pintar, remaja awal

**THE ASSOCIATION BETWEEN EXECUTIVE FUNCTION MEASURED BY
PASH-BRAINS AND SMARTPHONE SCREEN TIME DURATION AMONG
EARLY ADOLESCENTS AT SMP NEGERI 115 JAKARTA IN 2025**

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ABSTRACT

Background: Screen time among adolescents has risen markedly and may affect executive function, which undergoes rapid maturation. Although smartphones are the most frequently used device, evidence on their impact on executive function in early adolescents remains limited. No prior study has assessed this relationship using PASH-BRAINS, an instrument measuring both conventional and transcendental executive functions. **Objective:** To examine the relationship between smartphone screen time and executive function as measured by PASH-BRAINS in early adolescents. **Method:** A cross-sectional study involving 83 seventh-grade students (aged 12–13 years) at SMP Negeri 115 Jakarta was conducted. Smartphone screen time was calculated from the average duration of use over the preceding week. Executive function was assessed using the PASH-BRAINS questionnaire. Univariate analyses described data distribution, and bivariate analyses tested correlations. **Results and discussion:** Most participants exhibited excessive screen time and mild-to-moderate executive function impairment. No significant association was found between smartphone screen time and executive function, including conventional and transcendental aspects. This lack of significance may be explained by a homogeneous distribution of screen time and unmeasured confounders. Secondary findings showed significant associations between total PASH-BRAINS scores and conventional domain only. No significant association was observed between domains. These findings are consistent with the ongoing maturation of transcendental function. No association was observed between the age of first smartphone use and current screen time duration. **Conclusion:** Smartphone screen time was not associated with executive function in early adolescents. Further studies incorporating additional variables and multivariate analysis are warranted.

Keyword: executive function, PASH-BRAINS, screen time, smartphone, early adolescent