

ABSTRACT

THE IMPACT OF EPILEPSY ON COGNITIVE FUNCTION IN PEDIATRIC PATIENTS: A CASE-CONTROL STUDY AT DR. H ABDUL MOELOEK HOSPITAL

By

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Background: Epilepsy is a common chronic neurological disorder in children, with a prevalence of 0.5–4% in Indonesia, and it affects cognitive development, including attention, memory, and academic achievement. Preliminary survey data from July 2025 recorded 167 children with epilepsy at RSUD Dr. H. Abdul Moeloek, Lampung; however, local studies examining its impact on cognitive function remain limited. Therefore, this study aims to determine the effect of epilepsy on children's cognitive function through a case–control study.

Methods: This analytic observational case-control study involved 72 children aged 2-18 years (36 epilepsy cases, 36 non-epilepsy controls) at RSUD Dr. H. Abdul Moeloek from November-December 2025, using total sampling. Cognitive function was measured via PedsQL Cognitive Functioning questionnaire (>70 normal, ≤70 low), covering attention, working memori, processing speed, and language Aspects. Analysis used Chi-Square tests or Fisher Exact test ($p < 0.05$) in computerization.

Results: There is a significant effect of epilepsy on cognitive function in children ($p = 0.046$). The most severe deficit in children with epilepsy was observed in the memory domain. Children with epilepsy had a 5.67 times higher risk of low cognitive function compared to children without epilepsy.

Conclusions: : Epilepsy significantly impairs children's cognitive function, especially memory aspects compared to children without epilepsy. Children with epilepsy are 5.67 times more at risk of low cognitive function. Early intervention is required

Keywords: Children with epilepsy, cognitive function, PedsQL Cognitive Functioning, case-control study.

ABSTRAK

PENGARUH EPILEPSI TERHADAP FUNGSI KOGNITIF PADA PASIEN ANAK: STUDI KASUS KONTROL DI RSUD DR. H. ABDUL MOELOEK PROVINSI LAMPUNG

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Latar Belakang: Epilepsi merupakan gangguan neurologis kronis umum pada anak dengan prevalensi 0,5-4% di Indonesia, yang memengaruhi perkembangan kognitif seperti atensi, memori, dan prestasi akademik. Data pra-survei Juli 2025 mencatat 167 anak epilepsi di RSUD Dr. H. Abdul Moeloek, Lampung, namun kajian lokal tentang dampak kognitif masih terbatas, sehingga penelitian ini bertujuan untuk menganalisis pengaruh epilepsi terhadap fungsi kognitif anak melalui studi kasus-kontrol.

Metode: Metode Penelitian analitik observasional dengan desain kasus-kontrol melibatkan 72 anak usia 2-18 tahun (36 kasus epilepsi, 36 kontrol tanpa epilepsi) di RSUD Dr. H. Abdul Moeloek selama November-Desember 2025, menggunakan total sampling. Fungsi kognitif diukur dengan kuesioner PedsQL Cognitive Functioning (>70 normal, ≤ 70 rendah), mencakup Aspek atensi, memori kerja, kecepatan pemrosesan, dan bahasa. Analisis menggunakan uji Chi-Square atau Fisher Exact ($p < 0,05$) pada komputerisasi.

Hasil: Terdapat pengaruh signifikan epilepsi terhadap fungsi kognitif anak dengan $p = 0,046$. Defisit terberat anak epilepsi pada Aspek memori. Anak dengan epilepsi memiliki risiko fungsi kognitif rendah 5,67 lebih tinggi dibandingkan anak tanpa epilepsi.

Kesimpulan: Epilepsi berpengaruh signifikan terhadap penurunan fungsi kognitif anak, terutama aspek memori dibandingkan anak tanpa epilepsi. Anak epilepsi 5,67 kali lebih berisiko fungsi kognitif rendah. Intervensi dini diperlukan.

Kata Kunci: anak epilepsi, fungsi kognitif, PedsQL *Cognitive Functioning*, studi kasus-kontrol.