D-Epi App: Mobile Application to Control Sodium Valproat Administration in Children with Idiopatic Epilepsy in Indonesia

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Abstract : There are 325,000 children younger than age 15 in the U.S. have epilepsy. In Indonesia, 40% of 3,5 millions cases of epilepsy happens in children. The most common type of epilepsy, which affects 6 out of 10 people with the disorder, is called idiopathic epilepsy and which has no identifiable cause. One of the most commonly used medications in the treatment of this childhood epilepsy is sodium valproate. Administration of sodium valproat in children has a problem to fail. Nearly 60% of pediatric patients known were mildly, moderately, or severely non-adherent with therapy during the first six months of treatment. Many parents or caregiver took far less medication than prescribed, and the treatment-adherence pattern for the majority of patients was established during the first month of treatment. 42% of the patients were almost always given their medications as prescribed but 13% had very poor adherence even in the early weeks and months of treatment. About 7% of patients initially gave the medication correctly 90% of the time, but adherence dropped to around 20% within six months of starting treatment. Over the six months of observation, the total missing of administration is about four out of 14 doses in any given week. This fail can cause the epilepsy to relapse. Whereas, current reported epilepsy disorder were significantly more likely than those never diagnosed to experience depression (8% vs 2%), anxiety (17% vs 3%), attention-deficit/hyperactivity disorder (23% vs 6%), developmental delay (51% vs 3%), autism/autism spectrum disorder (16% vs 1%), and headaches (14% vs 5%) (all $P< 0.05$). They had a greater risk of limitation in the ability to do things (relative risk: 9.22; 95% CI: 7.56–11.24), repeating a school grade (relative risk: 2.59; CI: 1.52–4.40), and potentially having unmet medical and mental health needs. In the other side, technology can help to make our life easier. One of the technology, that we can use is a mobile application. A mobile app is a software program we can download and access directly using our phone. Indonesians are highly mobile centric. They use, on average, 6.7 applications over a 30 day period. This paper is aimed to describe an application that could help to control a sodium valproat administration in children; we call it as D-Epi app. D-Epi app is a downloadable application that can help parents or caregiver alert by a timer-related application to warn whether it is the time to administer the sodium valproat. It works not only as a standard alarm, but also inform important information about the drug and emergency stuffs to do to children with epilepsy. This application could help parents and caregiver to take care a child with epilepsy in Indonesia.
Keywords : application, children, D-Epi, epilepsy
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