

Exercise Habits and Health-Related Quality of Life in Adolescents with Epilepsy

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Introduction

Epilepsy is a chronic neurological disorder and affects nearly 50 million people of all ages worldwide[1]. The prevalence rate of epilepsy worldwide is approximately 0.3% to 1%. In Taiwan, the estimated prevalence of epilepsy was 0.33% in the pediatric population, which to approximately 200,000 individuals and the epilepsy is the most common chronic disease in outpatient service of pediatric neurology.

A growing number of studies has demonstrated the beneficial effect of regular exercise in individuals with epilepsy, including reduction in seizure frequency and severity, as well as better health and psychosocial benefit[2]. However, People with epilepsy (PWEs) are often advised against participating in sports and exercise, mostly because of fear, overprotection, and ignorance about the specific benefits and risks associated with such activities[3].

According to past studies, the exercise habits and performance of patients with epilepsy are lower compared to the general population. Pohl et al. recruited children aged 8 to 12 with epilepsy and used the Canadian Assessment of Physical Literacy (CAPL) scale to assess their physical literacy compared to healthy children of the same age. The results showed that the total CAPL score, movement skills, and muscle endurance of children with epilepsy were significantly lower compared to their healthy peers, but their motivation for exercise was higher[4].

Epilepsy impairs all aspects of quality of life (QoL), although at different degree, both in children/adolescents and in their families[5].

Exercise in people with epilepsy had the benefit effects in QoL, however the survey in adolescents with epilepsy in Taiwan is scant. This study explores exercise habits and QoL in adolescents with epilepsy.

Method

This cross-sectional study uses the questionnaire to investigate the difference in quality of life, preference of exercise and frequency of seizure between the groups of good and poor exercise habit (according to quantity of exercise) in adolescent with epilepsy in one senior high school in Taiwan.

Result

Of 25 enrolled cases, the age was between 12 to 18 years old (mean: 15 years old) and the male gender was 12(48%). Only 4% of cases considered that exercise will induce seizures (Figure 1).

Preliminary findings revealed that 11(44%) of the cases engaged in good exercise habits.

The QoL and the frequency of seizure had no significant difference between the good and poor exercise habit (Table 2). However, the preference of exercise was found significant difference to the preference for exercise ($p < 0.004$) (Table 2). Besides, among 14 cases who claimed doing less exercise, 27% was attributed to seizure related. (2 worried about epilepsys, 1 prevented from teachers or parents).

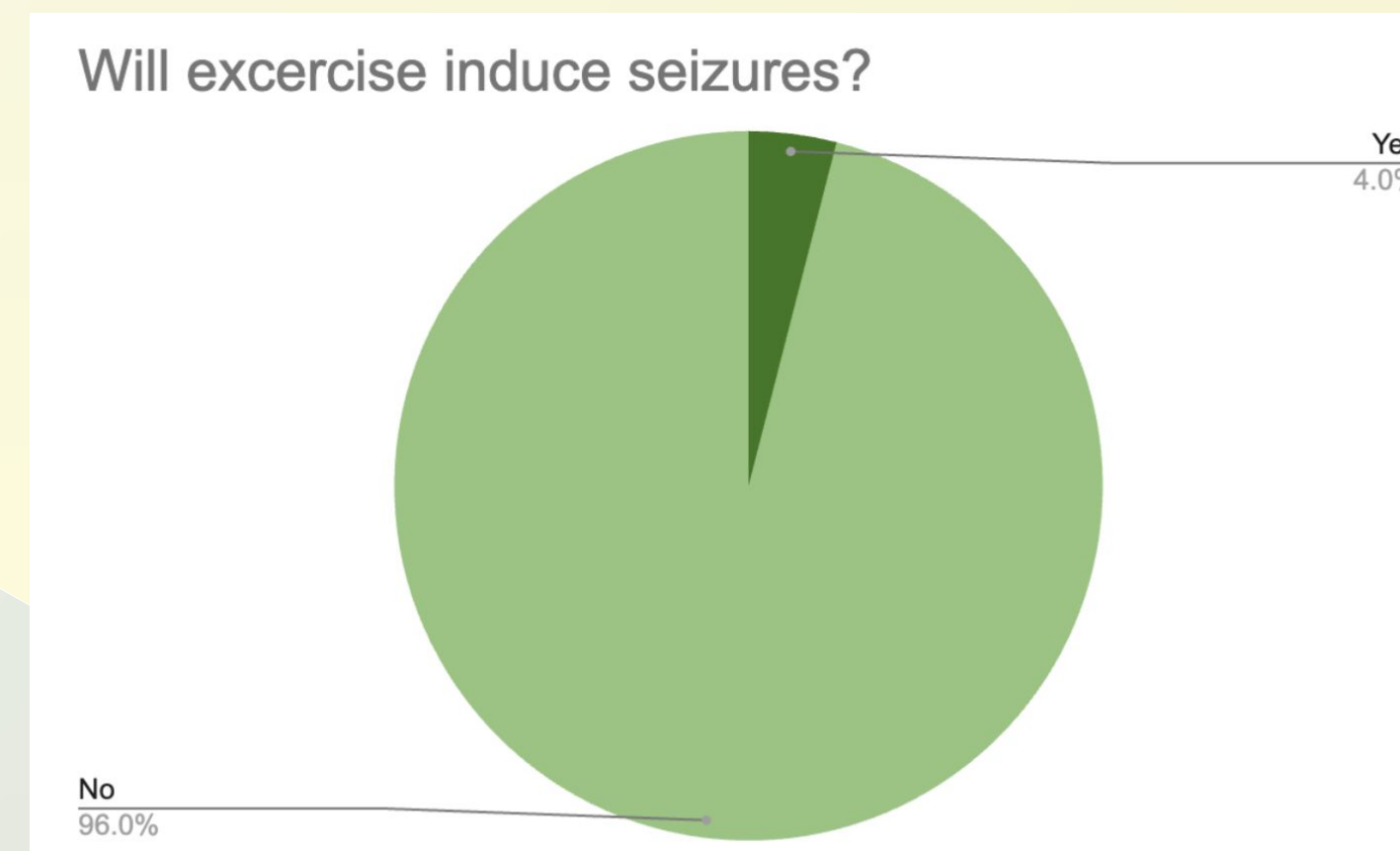


Table 1: basic characteristics

Average age	15y/o (min=12, max=18)
Sex gender	Male: 12 (48%), Female: 13 (52%)
Past history	None
Type of seizure	General onset: 13 (52%) Focal onset: 12 (48%)
The age of first onset	>8 y/o: 17 (68%), 5~8y/o: 1 (4%) 1~4y/o: 6 (24%), <1y/o: 1 (4%)
Last onset of seizure	No attack in recent 3 years: 10 (40%) Attack within recent 3 years: 15 (60%)
Frequency of seizure	No attack within 12 weeks: 20 (80%) Once per month: 2 (8%) 2-3 times per month: 2 (8%) Above 3 times per day: 1 (4%)
Timing of seizure onset	No: 11 (44%), In sleep: 6 (24%) After awaking up: 3 (12%) After gender exercise: 4 (16%) After aggressive exercise: 1 (4%) During menstruation: 1 (4%)
Anti-seizure medication	yes: 25 (100%)
Operation for epilepsy	0 (0%)

Table.2

	Good exercise habit(11)	Poor exercise habit(14)	P value
Quality of life (QoL)			
Unable to study	1.09	1.07	0.88 ^a
Excuses	1.36	1.35	0.98 ^a
Physical fitness	1.09	1.5	0.15 ^a
Not familiar to exercise	1.09	1.5	0.15 ^a
Concer for seiuzre	2.77	2.64	0.53 ^a
Peference for exercise	1.54	2.57	0.004 ^{a,*}
Frequency of seizure			
Low frequency of seizure	2	3	>0.99 ^b
High frequency of seizure	9	11	

a: T-test, b Fisher exact test, *: $p < 0.005$

Conclusion

The first research in Taiwan between exercise habits and QoL in adolescents with epilepsy is essential for tailoring interventions for adolescents with epilepsy. The study had a relatively small sample size and other factors that may influence QoL. Further research is needed to develop targeted strategies that empower adolescents with epilepsy.

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