Could physical activity practice minimize the economic burden of epilepsy?

A prática da atividade física poderia minimizar o custo econômico da epilepsia?

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Dear Editor,

The overall burden of neurological diseases on society is considerable and complex, impairing social functions, employment and health care provision, with secondary effects on family members and caregivers[1,2].

In the United States, the annual cost of the most prevalent neurological diseases is great, ≈ 790 billion American dollars; considering Alzheimer's disease and other dementias, chronic low back pain, stroke, traumatic brain injury, migraine headache, epilepsy, multiple sclerosis, spinal cord injury, and Parkinson's disease. In this ranking, epilepsy appears in the sixth position (≈ $37 billion American dollars per year). Thus, intersectoral and coordinated action plans are necessary for burden reductions[1].

Despite the high prevalence and the relevant economic burden of epilepsy, little investment has been put into research compared with cardiovascular diseases, for example. Therefore, knowledge about the benefits of different therapeutic approaches (including the nonpharmacological, such as physical activity and diet) is scarce. This seems counterintuitive, as a world that is aging progressively will have, not only cardiovascular but neurological diseases as well, become more prevalent.

In this sense, we would like to emphasize the important role of physical activity in reducing the economic burden (including mortality, morbidity and economic costs) of neurological diseases. Evidence has shown that physical activity can improve brain health and cognitive function. On the other hand, physical inactivity is associated with a range of chronic and neurological diseases, as well as premature mortality, and accounts for about 3.8% of cases of dementia worldwide[3].

Conservatively estimated, in 2013, physical inactivity cost health care systems worldwide ≈ $54 billion American dollars (distributed between public and private sectors, and households)[4]. Conversely, it was demonstrated that physical activity positively impacted health, as well as the burden of chronic and noncommunicable diseases (including neurological)[3,4].

In particular, regarding epilepsy, studies with experimental models and humans demonstrated that physical activity had positive effects and acted as a protective factor against seizure frequency[5]. Therefore, it is reasonable to suppose that the economic burden of epilepsy, and other neurological diseases, could diminish with regular physical activity.

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