ACTIVE MOBILITY, PHYSICAL ACTIVITY AND HEALTH IN SCHOOLS

Osvaldino Ferreira Nunes Junior[1]
Iransé Oliveira Silva [2]

Active transportation or active mobility is understood as any form of non-motorized movement that requires some physical effort. International organizations have been encouraging active transportation on the home-to-school route as a way to incorporate physical activity into the daily lives of young people. Among the various forms of active transportation, the most common active commutes are those made on foot or by bicycle. The research measuring the real impact and benefits on the health of people who adopt this mode of transportation, especially in the school context, is still incipient and inconclusive. The present study aims to evaluate the impacts of active transportation on the increase of physical activity, health, and well-being of schoolchildren. This is a prospective cohort analytical observational study. The groups will be classified as users and non-users of active transportation on the home-to-school route. Adolescents aged between 10 and 17 years who are regularly enrolled in state public schools under the Regional Coordination of Education of Goianésia, covering 8 municipalities, will participate in the study. Approximately 375 participants are estimated. The variables, physical activity and active commuting, will be assessed at two distinct times (beginning and end of the academic semester).

Keywords: Physical activity; Adolescents; Walking, Cycling, active mobility.

Introduction

Active transportation or active mobility is understood as any form of non-motorized movement that requires some physical effort (Andrade et al., 2016).

Among the various forms of active transportation, the most common active trips are those made on foot or by bicycle, which are closely related to

[1]Mestrando UniEVANGÉLICA,E-mail: junior.maradona@gmail.com
[2]Doutor, UniEVANGÉLICA, E-mail: iranse.silva@unievangelica.edu.br

individual factors (age, sex, income, education), environmental factors (climate, topography, and built environment), and specific characteristics of each trip, such as the distance to be traveled, the purpose of the trip, and its cost (Bauman et al, 2012; Sá et al, 2016).

This active commuting practice, besides being healthier, is socially inclusive, non-polluting, and can play a fundamental role in the context of sustainable and smart cities (Lorenc et al., 2008; Mason et al., 2015), in addition to which active home-to-school commuting has already been encouraged by various international organizations (De Matos et al., 2018). However, research measuring the real impact and health benefits for people who adopt this mode of transportation, especially in the school context, is still nascent and inconclusive.

Incorporating active transportation into the daily lives of schoolchildren is a strategy to promote an increase in the level of physical activity (LPA) among children and adolescents (Abarca-Gómez et al., 2017; De Matos et al., 2018), which in turn minimizes the risk of developing obesity, diabetes mellitus, and many other problems exacerbated by sedentary lifestyles (Florindo & Hallal, 2011; WHO, 2014; Oliveira-Silva & Camapum, 2020), creates a sustainability awareness, and minimizes the environmental impacts of burning fossil fuels (Sá et al., 2016; Giles-Corti et al., 2016; Decastro et al., 2018).

On the other hand, public administration bodies need to receive reliable information in order to plan concrete actions that provide structural improvements which, in turn, can favor the increase in adherence to an active lifestyle among the residents.

Primary Objective

Evaluate the impacts of active transportation on increasing physical activity in schoolchildren and adolescents aged 10 to 17 from public schools under the Regional Education Coordination of Goianésia.

Secondary Objective

Verify the student's perception of the importance of incorporating regular physical activity into their daily routine.

Present the relationship between age and the use of active transportation and the distances traveled.

Materials and Methods

Type of study

This is a prospective cohort analytical observational study. The groups will be classified between users (i.e., Active Transport Group-ATG) and non-users (i.e., Control Group-CG) of active transport on the home-to-school route. In addition to this mentioned subdivision, we will also have observations based on the municipality of residence, gender, and age.

Local

State public schools of the Regional Education Coordination of Goianésia, comprising 8 municipalities: Goianésia, Barro Alto, Jaraguá, Jesúpolis, Santa Isabel, Santa Rita do Novo Destino, São Francisco de Goiás, and Propitious Village.

Population

14400 children and adolescents aged between 9 and 17 years who are regularly enrolled in state public schools under the Regional Coordination of Education of Goianésia will participate in the study.

Sampling and Sample Size

The sample will consist of students who are authorized by their parents and are willing to participate in the study, regardless of whether they use active transportation methods for their commute between home and school.

The sample size was calculated using the Open Epi website (version 2 open source). Taking α=5%, effect size (d)=0.30, and 1 - β (power)=0.80 (80%), the minimum sample size was calculated as 375 participants.

Data Collection

Initially, we will revisit the regional education coordination of Goianésia to confirm the previous contact we made and request authorization to conduct the study.

Subsequently, lectures and presentations about the research proposal will be conducted in the selected schools. Participants who agree to take part must bring the Free and Informed Consent Form (FIC) to their parents and/or guardians for authorization, and subsequently, the minor must sign an assent form.

At the first moment, the participants will be evaluated regarding aspects related to their level of physical activity, body mass index, screen time, and well-being.

In the second phase, the participants will be divided into two groups: one group that uses active transportation in their home-to-school routine, called the active group (AG), and the other group that travels from home to school exclusively by motorized means, called the control group (CG). It is noteworthy that the participants themselves will decide which group they want to belong to, based on their respective routines.

This is a prospective cohort analytical observational study.

GA should maintain its active transportation routine for the home-school commute during the academic semester, while GC should continue with its usual transportation routine.

Expected results

The contributions of conducting the research consist of allowing the findings to benefit society by indicating patterns of active commuting among students, pros and cons of usage, and inherent benefits.

The participants will provide data to profile students regarding the use of active transportation on the home-to-school route.

Through the questionnaire on "Active Transportation and Routines," it will be possible to obtain information that can help us understand the possible reasons why this form of transportation is rarely adopted, such as the distance between home and school.

References

Abarca-Gómez, L. et al. (2017). Tendencias mundiales en el índice de masa corporal, bajo peso, sobrepeso y obesidad de 1975 a 2016: un análisis combinado de 2416 estudios de medición basados en la población en 128.9 millones de niños, adolescentes y adultos. The Lancet, vol. 390, no. 10113: 2627-2642.

Andrade V., Rodrigues J., Mariano F., Lobo Z. (2016) (editors). Bicycle Mobility in Brazil. Rio de Janeiro: PROURB/UFRJ.

Bauman, A.E. et al. (2012) Correlates of physical activity: why are some people physically active and others not? The Lancet, v.380, n. 9838:258-271.

Decastro, J. et al. (2018). Cycle-inclusive policies in tourism planning in Brazil: a study on the host cities of the FIFA World Cup 2014. Academic Journal Observatory of Innovation in Tourism, [S. l.], vol. XII, no. 1:66–85.

de Matos, S.M.A. et al. (2018). ¿Qué factores influyen en el uso de la bicicleta y la caminata para el transporte por parte de los participantes de ELSA-Brasil? Revista Americana de Promoción de la Salud, v. 32, n. 3:646-656. Florindo, A.A., Hallal, P.C. (2011). Epidemiology of physical activity. In Epidemiology of physical activity (pp. xviii-210). Giles-Corti, B. et al. (2016) Planificación urbana y salud de la población: un desafío global. The Lancet, vol. 388, no. 10062:2912-2924.

Lorenc, T. et al. (2008). Actitudes hacia caminar y andar en bicicleta entre niños, jóvenes y padres: una revisión sistemática. Revista de Epidemiología y Salud Comunitaria, v. 62, n. 10:852-857.

Mason, J., Fulton, L., & McDonald, Z. (2015). Un escenario global de alto cambio en el ciclismo. Retrieved from. Neto, C, & Malho, M.J. (2007). Urban space and mobility independence in childhood, 2004.

Oliveira-Silva, I.,& Billerbeck, N.C. (2020). Active transportation: what idea is this? Physical education, childhood, and health in discussion: collection of studies 2,15.

Sá, T.H. et al. (2016). Diferencias socioeconómicas y regionales en el transporte activo en Brasil. Public Health Journal, vol. 50:1-9. Organización Mundial de la Salud (2014). Informe mundial sobre las enfermedades no transmisibles 2014.