



# People's perception of the impact of parks on increasing physical activity in the community

Percepção das pessoas acerca do impacto dos parques no aumento da atividade física da comunidade

## AUTHOR'S

Joni Marcio de Farias<sup>1</sup>   
Ricardo Teixeira Quinaud<sup>1</sup>

<sup>1</sup> Universidade do Extremo Sul Catarinense, Curso de Educação Física, Florianópolis, Santa Catarina, Brasil.

## CORRESPONDING

Ricardo Teixeira Quinaud  
ricardoquinaud@unesc.net  
Av. Universitária, n. 1105, Universitário,  
Criciúma, Santa Catarina, Brazil.  
Zip Code: 88.806-000.

## DOI

10.12820/rbafs.29e0338



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

## ABSTRACT

The present study aimed to analyze the probability of people's responses about the impact of parks on increasing physical activity in the community. Data was collected with park goers and a total of 427 participants responded to the structured questionnaire with a scale ranging from 1 (not at all) to 10 (totally). Data was analyzed using multilevel ordinal regression analysis considering the variability by gender, civil state, distance from the park, education, age group, living time in the city, time spent by the users in the park and wage. Participants presented similar probabilities of responses. There were found tendencies of lower impact of the parks in older (> 60 years old) and single people as well as in people living further from the parks (> 6km). The high probabilities of responses were for values 8, 9 and 10. We can conclude people have a perception of the high impact of the parks on increasing physical activity in the community. This study contributes to encourage stakeholders to act in favor of public open spaces and to develop more action in the spaces that already exist.

**Keywords:** Exercise; Green space; Leisure activities.

## RESUMO

O presente estudo teve como objetivo analisar a probabilidade de respostas das pessoas sobre o impacto dos parques no aumento da atividade física na comunidade. Os dados foram coletados com frequentadores do parque e um total de 427 participantes responderam ao questionário estruturado (escala que varia de 1 a 10). Os dados foram analisados por meio de análise de regressão ordinal multinível considerando a variabilidade por gênero, estado civil, distância do parque, escolaridade, faixa etária, tempo de residência na cidade, tempo de permanência dos usuários no parque e salário. Os participantes apresentaram probabilidades de respostas semelhantes. Foram encontradas tendências de menor impacto dos parques em pessoas mais velhas (> 60 anos) e solteiras, bem como em pessoas que vivem mais longe dos parques (> 6km). As maiores probabilidades foram de responder os maiores valores do questionário (valores 8, 9 e 10). Podemos concluir que as pessoas têm uma percepção do alto impacto dos parques no aumento da atividade física na comunidade. Este estudo contribui para incentivar as partes interessadas a agir em prol dos espaços públicos abertos e desenvolver mais ações nos espaços já existentes.

**Palavras-chave:** Exercício físico; Espaço verde; Atividades de lazer.

## Introduction

Physical inactivity is associated with several health problems around the world. The World Health Organization (WHO) has set a goal of reducing physical inactivity by 15% by the year 2030, as established in the Global Action Plan. Additionally, the WHO recognizes the importance of parks, green and natural environments for people's involvement in physical activities<sup>1</sup>.

The presence of public open spaces in cities has been associated with several physical, social, emotional and socioeconomic benefits. Places with little incivility, good accessibility, good lighting and security contrib-

ute to a reduction in violence, greater well-being of the population and increase of physical activity<sup>2,3</sup>. Studies have also pointed to the relation between the distance from parks and squares with the level of physical activity. People living closer to adequate spaces (preferably green environments) have 3% to 5% the chances of being more physically active<sup>3,4</sup>.

Governments have been encouraging the development of natural environments for physical exercise and the United States Center for Disease Control has suggested prescribing exercise in parks as a strategy to achieve this goal, involving families and communities,

explained by ecological models for behavior change<sup>1,5</sup>. Due to the difficulties in public health, especially in health promotion, international organizations have highlighted the need to prioritize actions to promote physical activity, increasing the availability, access and quality of public places<sup>6</sup>, preferably with assistance/exercise prescription in these places and free of charge<sup>7</sup>.

Even with all these benefits in these places, there is still little evidence to justify more robust investments by cities. Mexico had initiatives to prove how much these spaces contributed to increasing the level of physical activity of its population by physical activity intervention in parks, which increase the parks use as well as the levels of physical activity<sup>8</sup>. According to Bedimo-Rung et al.<sup>9</sup> the benefits of implementing physical activity interventions in parks go beyond direct improvements in health, psychological and social benefits. The connection of people with the environment, community and the possibility of getting together with family must be included.

In some continents such as Asia, the prevention of non-communicable diseases is a priority<sup>10</sup>, especially in reducing the population's levels of physical inactivity, using active environments and creating high-quality green spaces with prescription in parks<sup>8</sup>. However, studies are still unable to establish causality between having adequate spaces, the prescription of exercises and an improvement in the perception of health and general well-being. In the Brazilian context, parks have been investigated in order to understand their context and users. An investigation on parks, in a city located in the south region of the country, has found that people that go to park three times per week or more had a higher perception of satisfaction, feeling of more leisure opportunities, higher quality of life and general health<sup>11</sup>. Additionally, a revision demonstrated that Brazilian parks enable improvement in quality of life, especially when are near to people's home and are well cared by users and governments<sup>12,13</sup>.

The city of Criciúma currently has three large parks, strategically built to serve the macro regions of the city, with accessibility to the entire population and with free programs and actions to encourage physical activity. However, based on our best knowledge, that is no recent study on this context that enable us to better understand if such context may influence people's physical activity. Thus, the present paper aimed to analyze the people's perception on the impact of parks on increasing physical activity in the community.

## Methods

This paper is an observational study with a quantitative approach performed with park goers in Criciúma. After approval of the University of the Extreme South of Santa Catarina Ethical Committee (number 5.607.106) the research was conducted in the three major parks of the city (Parque das Nações Cincinato Napolini, Parque dos Imigrantes e Parque Municipal Prefeito Altair Guidi). The first park to be built was Parque das Nações Cincinato Napolini, in 2011, in the Próspera neighborhood. The second park was the Parque dos Imigrantes, in 2019, in the district of Rio Maina and, sequentially, in 2020, Parque Municipal Prefeito Altair Guidi was built, located in the Pinheirinho neighborhood. All three parks, summarily, have sports and leisure facilities, for example, multi-sports courts, outdoor gyms, walking/running tracks, bike lanes and playgrounds.

The data was collected based on a single question: "In a scale of one (not at all) to 10 (totally), how much do you believe that the parks implementation has contributed to increase the community physical activity?". The decision to use a scale of 1 to 10 was to measure large possibilities of response. In addition, participants characteristics were also collected: gender (female and male), civil state (single, marriage and other), distance from the park ( $\leq 2.9$  km, 3.0 km to 5.9 km and  $\geq 6.0$  km), education (elementary school, high school and higher education), age group ( $\geq 17$  y.o., 18 to 59 y.o. and  $\geq 60$  y.o.), living time in the city (0 to 19 years and  $\geq 20$  years), time spent by the users in the park ( $< 60$  min, 60 to 120 min and  $> 120$  min) and wage (1 to 3 minimum wages and  $\geq 4$  minimum wages).

Participants must be 14 y.o. or older and be a resident of Criciúma city to be included in the research (inclusion criteria). All participants assigned the informed consent as well as the informed assent ( $< 18$  y.o.). Participant that did not complete the questionnaire (exclusion criteria) were excluded. A total of 440 responses were collected. However, 13 participants did not respond all questions and were excluded. Thus, the final data comprised a total of 427 responses. To analyze the response probabilities, we run a multilevel ordinal regression model (cumulative model) in a Bayesian framework<sup>14,15</sup> and plotted the estimates. The use of multilevel regression models advances over traditional regressions (i.e., considers the data structure at just one level) by considering the nested data structure and the different sources of variation (i.e., within and between groups)<sup>16</sup>.

The use of ordinal models also lies on the structure of the questionnaire, which our dependent variables are peoples' responses on ordinal categories. Lastly, Bayesian methods allow for combining the known information before seeing the data (i.e., the prior uncertainty concerning a parameter or hypothesis expressed as a probability distribution) with what is learned from the observed data (i.e., the likelihood of the data conditioned on the parameter or hypothesis) to update knowledge categories. The response probabilities were estimated by gender, civil state, distance from the park, education, age group, living time in the city, time spent by the users in the park and wage. All predictors were included as group level effects. The analysis was performed using the "brms" package<sup>17</sup> and plotted using the packages "ggplo2"<sup>18</sup> and "tidy"<sup>19</sup> in R<sup>20</sup>. To interpret this analysis, is recommended to plot the estimates and confidence interval in order to bring a metric adjust of the data<sup>15</sup>

## Results

Participant characteristics are described in Table 1. The majority of the participants were male (51.5%), between 18-59 y.o. (86.7%), single (54.3%), with high school completed (50.1%), receiving 1-3 minimum wages (62.8%), living less than 20 years in the city (52.7%) and with a distance to the park of more than 6.0 km (37.0%) and spending between 60 - 120 min in the park.

Multilevel ordinal regression model was plotted and it is presented in Table 1. Based on Figure 1, participants did not respond 1 or 2, which were the lowest possible responses, as well as 4. In addition, the higher probabilities were for responding 8, 9 and 10. No substantial difference was verified in the group variables. However, it is possible to observe people that are 60 y.o. or older have lowest probabilities of responding 10 (totally) than younger people as well as people living more than six km from the park, compared to people living near to the park. It means that these people have a lower perception of the contribution of the parks implementation on people's physical activity. Additionally, married people have higher probabilities of responding 10 (totally) than single people, meaning that they have a higher perception of the contribution of the parks on people's physical activities.

## Discussion

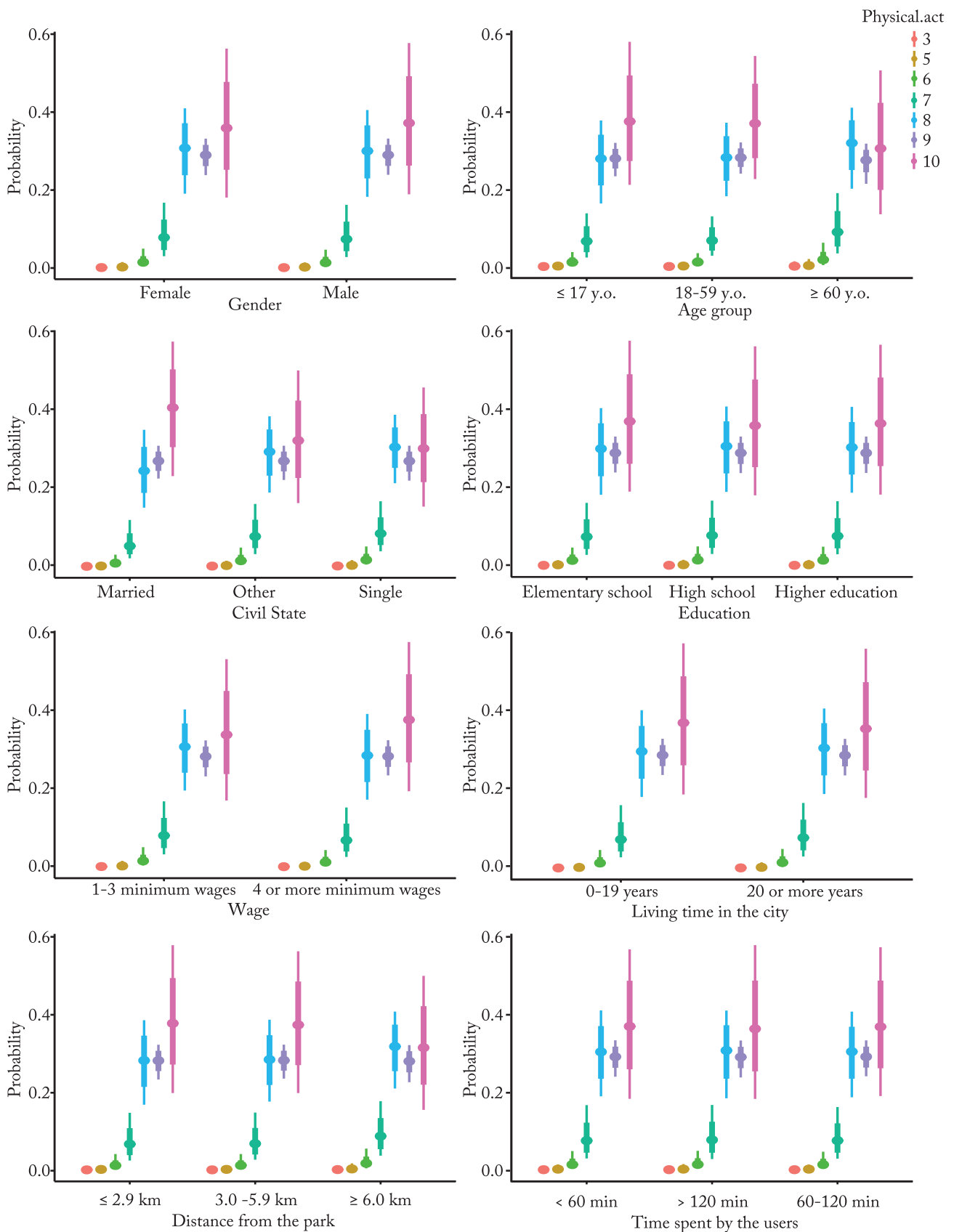
Aiming to analyze the probability of people's responses about the impact of parks on increasing physical acti-

**Table 1** – Participants characteristics (n = 427).

Variable	Sample n (%)
Gender	
Female	207 (48,5)
Male	220 (51,5)
Age group	
≤ 17 y.o.	38 (8,9)
18 - 59 y.o.	370 (86,7)
60 y.o. or more	19 (4,4)
Civil state	
Single	228 (53,4)
Married	152 (35,6)
Other	47 (11,0)
Education	
Elementary school	69 (16,2)
High school	214 (50,1)
Higher education	144 (33,7)
Wages	
1 - 3 minimum wages	268 (62,8)
4 or more minimum wages	159 (37,2)
Living time in the city	
0 - 19 years	225 (52,7)
20 or more years	202 (47,3)
Distance	
≤ 2.9 km	140 (32,8)
3.0 km - 5.9 km	129 (30,2)
6.0 km or more	158 (37,0)
Time spent in the park	
< 60 min	161 (37,7)
60 - 120 min	186 (43,6)
> 120 min	80 (18,7)

ivity in the community, we find differences in the participants responses. First of all, it is important to understand that the urbanization is advancing and there is a need to build places with access to everyone. Urban parks are excellent spaces with important potential for improving the health of the population. However, there is a need to understand each scenario, the different social and economic groups as well as personal profiles. These individual and collective factors can influence perceptions about parks.

With the advancement of urbanization, green and leisure spaces have decreased, mainly due to the lack of understanding and investment in green urban infrastructure planning and projects to protect the diverse interests of human beings and biodiversity<sup>7</sup>. Furthermore, social groups with different sociodemographic characteristics, such as gender, age or ethnicity, experi-



**Figure 1** – Probabilities of responses and confidence intervals (95%) according to gender, age group, civil state, education, wage, living time in the city, distance from the park and time spent by the users in the park. Responses categories are presented considering 1 (not at all) to 10 (totally). Responses 1, 2 and 4 are not presented because any participants responded them.

ence the impact of exposure to green spaces differently, even when comparing them to more privileged groups living in the same neighborhood<sup>21,22</sup>.

Studies have observed behavioral differences regarding gender and the use of public spaces and the proportion of visitors. It was observed that male and female have use the parks with similar frequency. However, when compared by the intensity of physical activity, women performed physical activity with lower intensity compared to men<sup>23</sup>. In our study, we identified a higher number of men in using these spaces. In the Kong and colleagues study<sup>7</sup>, there were more females compared to males, demonstrating that regional, cultural characteristics, among others, can influence the profile of space users.

Studies indicate that safety, proximity to homes and incivilities influence the frequency of use in parks<sup>13,24</sup>. Residential proximity to green spaces has been associated with better results in the use of spaces. The presence of green spaces is not always sufficient to create healthy environments, however the way in which populations interact with these spaces depends on a complex system, such as the economic and social systems. These systems influence the social dynamics that shape inhabitants' behaviors and how they perceive the collective use of the park<sup>25,26</sup>.

When analyzing the age of park visitors in our study, the highest prevalence was between 18 and 59 years old. Children, adolescents and elderly presented low use of parks. This data is in line with the literature<sup>27</sup>, which indicates that generally middle-aged adults have good family and social relationships, as well as relatively stable employment that enable them have more active leisure time. Additionally, this allows them to explore their interests, develop and maintain interpersonal relationships, making parks an open space for family activities and social relationships.

The low adherence of young people to parks may be related to internet access and multiple digital environments, which may make parks unattractive to this population. According to Luo et al.<sup>28</sup>, young people rarely go to parks unless they feel their health is less than ideal. In relation to the elderly, low adherence may be related to the need to create an inclusive public space suitable for the elderly, which requires knowing their habits and expectations<sup>29</sup>. Contemporary modeling of urban green areas requires user-oriented design and management, based on a complete understanding of the needs of all users, across all age groups, covering

green areas, accessibility of facilities and the quality of the equipment<sup>6</sup>.

The proximity to parks has been identified as a precondition for participation by some population groups<sup>13,30</sup>. The present study, in general, found that people living further away from the parks had lower probabilities of responding 10. Studies have shown, for most of the population, travel time to the park varies from 10 to 20 min<sup>7</sup>. Additionally, parks are more likely to be visited when they are close to home<sup>2</sup> and for every 100 m reduction in distance, the probability of visiting the park increases four times<sup>31</sup>. This behavior is also observed in young people<sup>32</sup> whose proximity to parks enhances the practice of physical activity<sup>33</sup>.

The time spent in the parks in our study was up to 120 min, which is in line with the literature, which also found a time of 30 to 90 min<sup>7</sup>. According to the WHO global recommendations on physical activity for health, one hour of exercise per day is in line with people's physiological habits, as well as being extremely beneficial for physical health. In relation to educational level, higher education level was related to a higher prevalence of leisure-time physical activity in the Brazilian context<sup>30</sup>. Additionally, a study found that in low-income neighborhoods there is a positive correlation between safety and physical activity, although there is no relationship for high-income neighborhoods<sup>34</sup>.

Research on urban community parks is a relevant topic today, especially for developing countries. Parks structure and administration must prioritize actions and improvements that meet the needs of current urban renewal and visitor habits. The city of Criciúma currently has three major parks distributed regionally in an attempt to take into account distances from homes and, based on this and other studies, build actions for the entire population.

Based on the present study, we analyzed people's perception on the impact of parks on increasing physical activity in the community. This study demonstrates that the impact of the parks on increasing physical activity in the community is high and most similar, independent to the participants characteristics. Tendencies of lower impact of the parks were observed in older (> 60 y.o.) and single people as well as in people living further away from the parks (> 6.0 km). Thus, stakeholders need to pay attention to develop and implement more strategies to make the parks more attractable to older people as well as to simple people. The implementation of physical exercise programs in the parks, orientated

by professionals, might be a possible solution. In addition, the implementation or the revitalization of other urban parks or even green spaces might help people living further away from the three major parks investigated being influenced by these places.

This study contributes for the implementation of public policies in order to incentive the increase of physical activity in the parks and building new parks. Although we took the advantage of a unique context with three large parks and strong analytical approach, our results may reflect the Criciúma's context and cannot be extrapolated to analog contexts. Additionally, by measuring people's perception of a subject matter, in the present case the impact of parks on physical activity, the subjectivity of responses highly influences the manuscript results and interpretations. Future studies might investigate the direct impact of physical activity programs in parks on people's health as well as the contribution of these programs on public health.

### Conflict of interest

The authors declare no conflict of interest.

### Funding

This work was carried out with support from the Santa Catarina State Research and Innovation Support Foundation.

### Author's contributions

Farias JM: Conceptualization; Investigation; Resources; Supervision; Project administration; Visualization; Writing – original draft; Writing – review & editing; Approval of the final version. Quinaud RT: Conceptualization; Methodology; Software; Validation; Formal analysis; Investigation; Resources; Data curation; Supervision; Project administration; Visualization; Writing – original draft; Writing – review & editing; Approval of the final version.

### Declaration regarding the use of artificial intelligence tools in the article writing process

The manuscript did not use artificial intelligence tools for its preparation.

### Availability of research data and other materials

The data of this study is available on demand from referees.

### Acknowledgments

The authors would like to thank for the financial support by the Fundação de Amparo a Pesquisa e Inovação do Estado de Santa Catarina. Additionally, the authors also would like to thank the municipality of Criciúma for facilitating research in the parks.

## References


- Petrunoff N, Yao J, Sia A, Ng A, Ramiah A, Wong M, et al. Activity in nature mediates a park prescription intervention's effects on physical activity, park use and quality of life: a mixed-methods process evaluation. *BMC public health*. 2021;21(1):204. doi: <https://doi.org/10.1186/s12889-021-10177-1>.
- Mehta V, Mahato B. Designing urban parks for inclusion, equity, and diversity. *J Urban*. 2021;14(4):457-89. doi: <https://doi.org/10.1080/17549175.2020.1816563>.
- Hino AAF, Rech CR, Gonçalves PB, Reis RS. Acessibilidade a espaços públicos de lazer e atividade física em adultos de Curitiba, Paraná, Brasil. *Cad Saude Publica*. 2019;35(12):e00020719. doi: <https://doi.org/10.1590/0102-311X00020719>.
- Jáuregui A, Salvo D, Medina C, Barquera S, Hammond D. Understanding the contribution of public- and restricted-access places to overall and domain-specific physical activity among Mexican adults: A cross-sectional study. *PloS one*. 2020;15(2):e0228491. doi: <https://doi.org/10.1371/journal.pone.0228491>.
- Sallis JF, Floyd MF, Rodríguez DA, Saelens BE. Role of Built Environments in Physical Activity, Obesity, and Cardiovascular Disease. *Circulation*. 2012;125(5):729-37. doi: <https://doi.org/10.1161/CIRCULATIONAHA.110.969022>.
- Kimic K, Polko P. The Use of Urban Parks by Older Adults in the Context of Perceived Security. *Int J Environ Res Public Health*. 2022;19(7):4184. doi: <https://doi.org/10.3390/ijerph19074184>.
- Kong D, Chen Z, Li C, Fei X. Investigating the Usage Patterns of Park Visitors and Their Driving Factors to Improve Urban Community Parks in China: Taking Jinan City as an Example. *Int J Environ Res Public Health*. 2022;19(23):15504. doi: <https://doi.org/10.3390/ijerph192315504>.
- Müller-Riemenschneider F, Petrunoff N, Yao J, Ng A, Sia A, Ramiah A, et al. Effectiveness of prescribing physical activity in parks to improve health and wellbeing - the park prescription randomized controlled trial. *Int J Behav Nutr Phys Act*. 2020;17(1):42. doi: <https://doi.org/10.1186/s12966-020-00941-8>.
- Bedimo-Rung AL, Mowen AJ, Cohen DA. The significance of parks to physical activity and public health: A conceptual model. *Am J Prev Med*. 2005;28(2, Suppl 2):159-68. doi: <https://doi.org/10.1016/j.amepre.2004.10.024>.
- Yoon KH, Lee JH, Kim JW, Cho JH, Choi YH, Ko SH, et al. Epidemic obesity and type 2 diabetes in Asia. *Lancet*. 2006;368(9548):1681-8. doi: [https://doi.org/10.1016/S0140-6736\(06\)69703-1](https://doi.org/10.1016/S0140-6736(06)69703-1).
- Fermino R, Reis R, Hallal PC, Kaczynski AT. Who are the users of urban parks? A study with adults from Curitiba, Brazil. *J Phys Act Health*. 2015;12(1):58-67. doi: <https://doi.org/10.1123/jpah.2012-0482>.
- Morais GL. Características dos espaços públicos abertos e a associação entre o nível de atividade física com a distância, escolaridade e renda em adultos de Criciúma. Criciúma: Universidade do Extremo Sul Catarinense; 2021.
- Arana ARA, Xavier FB. Qualidade ambiental e promoção de saúde: o que determina a realização de atividades físicas em parques urbanos? *Geosul*. 2017;32(63):179-201. doi: <https://doi.org/10.5007/2177-5230.2017v32n63p179>.
- Liddell TM, Kruschke JK. Analyzing ordinal data with metric models: What could possibly go wrong? *J Exp Soc Psychol*. 2018;79:328-48. doi: <https://doi.org/10.1016/j.jesp.2018.08.009>.

15. Bürkner P-C, Vuorre M. Ordinal regression models in psychology: A tutorial. *Adv Meth Pract Psychol Sci.* 2019;2(1):77-101. doi: <https://doi.org/10.1177/2515245918823199>.
16. Gelman A, Hill J. *Data analysis using regression and multilevel/hierarchical models* Cambridge: Cambridge University Press; 2007.
17. Bürkner P-C. An R Package for Bayesian Multilevel Models using Stan. *Journal of Statistical Software.* 2017;80(1):1-28. doi: <https://doi.org/10.18637/jss.v080.i01>.
18. Wickham H. *ggplot2: Elegant Graphics for Data Analysis.* Springer-Verlag New York. 2016.
19. Wickham H. *Tidy Data.* *Journal of Statistical Software.* 2014;59(10):1-23.
20. R Core Team. *R: A Language and Environment for Statistical Computing* <http://www.R-project.org/2018>.
21. Kabisch N, Korn H, Stadler J, Bonn A. Nature-based solutions to climate change adaptation in urban areas: Linkages between science, policy and practice: Springer Nature; 2017.
22. Pearce J, Cherrie M, Shortt N, Deary I, Ward Thompson C. Life course of place: A longitudinal study of mental health and place. *Trans. Inst Br Geogr.* 2018;43(4):555-72. doi: <https://doi.org/10.1111/tran.12246>.
23. Fontán-Vela M, Rivera-Navarro J, Gullón P, Díez J, Anguelovski I, Franco M. Active use and perceptions of parks as urban assets for physical activity: A mixed-methods study. *Health & place.* 2021;71:102660. doi: <https://doi.org/10.1016/j.healthplace.2021.102660>.
24. Nations U. *Revision of World Urbanization Prospects 2018.* Population Division of the United Nations Department of Economic and Social Affairs (UNDESA). 2019.
25. Franco M, Bilal U, Diez-Roux AV. Preventing non-communicable diseases through structural changes in urban environments. *J Epidemiol Community Health.* 2015;69(6):509-11. doi: <https://doi.org/10.1136/jech-2014-203865>.
26. Markevych I, Schoierer J, Hartig T, Chudnovsky A, Hystad P, Dzhambov AM, et al. Exploring pathways linking greenspace to health: Theoretical and methodological guidance. *Environ Res.* 2017;158:301-17. doi: <https://doi.org/10.1016/j.envres.2017.06.028>.
27. Veitch J, Christian H, Carver A, Salmon J. Physical activity benefits from taking your dog to the park. *Landsc Urban Plan.* 2019;185:173-9. doi: <https://doi.org/10.1016/j.landurbplan.2019.02.013>.
28. Luo JM, Vu HQ, Li G, Law R. Topic modelling for theme park online reviews: Analysis of Disneyland. *J Travel Tour Mark.* 2020;37(2):272-85. doi: <https://doi.org/10.1080/10548408.2020.1740138>.
29. Sundevall EP, Jansson M. Inclusive Parks across Ages: Multifunction and Urban Open Space Management for Children, Adolescents, and the Elderly. *Int J Environ Res Public Health.* 2020;17(24):9357. doi: <https://doi.org/10.3390/ijerph17249357>.
30. Morais GLd, Rech CR, Schäfer AA, Meller FdO, Farias JMd. Nível de atividade física de adultos: associação com escolaridade, renda e distância dos espaços públicos abertos em Criciúma, Santa Catarina. *Rev Bras Ciênc Esporte.* 2022;44. doi: <https://doi.org/10.1590/rbce.44.e010021>.
31. Dalton AM, Jones AP. Residential neighbourhood greenspace is associated with reduced risk of cardiovascular disease: A prospective cohort study. *PloS one.* 2020;15(1):e0226524. doi: <https://doi.org/10.1371/journal.pone.0226524>.
32. Dias AF, Gaya AR, Brand C, Pizarro AI, Fochesatto CF, Mendes TM, et al. Distance from home to the nearest park and the use of the parks for physical activity: the mediator role of road safety perception in adolescents. *Public health.* 2019;168:9-16. doi: [10.1016/j.puhe.2018.11.021](https://doi.org/10.1016/j.puhe.2018.11.021).
33. Lima AV, Fermino RC, Oliveira MP, Rodriguez Añez CR, Reis RS. Perceived distance to recreational facilities and the association with physical activity and exercise among adolescents in Curitiba, Paraná State, Brazil. *Cad Saude Publica.* 2013;29(8):1507-21. doi: <https://doi.org/10.1590/0102-311x00175912>.
34. Zhang R, Zhang CQ, Lai PC, Cheng W, Schüz B, Kwan MP. Park environment and moderate-to-vigorous physical activity in parks among adolescents in a high-density city: the moderating role of neighbourhood income. *International journal of health geographics.* 2021;20(1):35. doi: <https://doi.org/10.1186/s12942-021-00289-7>.

Received: 03/23/2024

Accepted: 05/14/2024

**Associate editor**

Debora Bernardo da Silva   
Hospital Israelita Albert Einstein, São  
Paulo, São Paulo, Brasil

**Cite this article as:**

Farias JM, Quinaud RT. People's perception of the impact of parks on increasing physical activity in the community. *Rev. Bras. Ativ. Fis. Saúde.* 2024;29:e0338. DOI: [10.12820/rbafs.29e0338](https://doi.org/10.12820/rbafs.29e0338)