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Use of public spaces for physical activity: An exploratory study in Oeiras, Portugal

Utilização de espaços públicos para atividade física: Um estudo exploratório em Oeiras, Portugal

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ABSTRACT

Introduction: Previous systematic reviews indicate that easy access to places for walking and exercise favors the practice of physical activity (PA). However, despite the effort and investment in improving structures for PA practice in the municipality of Oeiras, Portugal, no study has been dedicated to identifying the profile of its occupants, health indicators, and their relation with these spaces. Objective: This exploratory-descriptive study aimed to characterize the users of public parks, describing their PA and sedentary behavior (SB) levels, perception of health, life satisfaction, and the relationship with the spaces used for PA practice. Method: Through a convenience sample, 403 interviews were carried out by questionnaire applied face-to-face in public areas in 9 infrastructures for PA practice, and descriptive analyses were employed. Results: Results indicated that the PA levels of public park users are above those described by other national studies (153 ± 291 min/week of vigorous-intensity PA and 417 ± 657 min/week of moderate-intensity PA). In addition, the participants reported spend-ing an average of 314 ± 164 minutes/day (5.2 hours/day) in SB and had a high life satisfaction (mean = 7.6 – on a scale of 0 to 10). Besides that, they reported that the main reasons for choosing that place were proximity to home (45.7%) and being in contact with nature (22.1%). Conclusion: Our descriptive study demonstrates that people who attend public parks dedicated to PA practice tend to be more physically active, spend less time in SB, which contributes to reducing physical inactivity.

Keywords: Physical activity; Sedentary behavior; Public parks; Public health.

RESUMO

Introdução: Revisões sistemáticas anteriores indicam que o acesso fácil a locais para prática de caminhadas e exercícios físicos favorece a prática de atividade física (AF). No entanto, apesar do esforço e investimento em melhorar as estruturas para a prática de AF no município de Oeiras, Portugal, nenhum estudo tem se dedicado a identificar o perfil dos seus usuários, indicadores de saúde e suas relações com estes espaços. Objetivo: Este estudo exploratório-descritivo teve como objetivo caracterizar os usuários destes parques públicos, descrevendo seus níveis de AF, comportamento sedentário (CS), percepção de saúde, satisfação com a vida e a relação com os espaços utilizados para AF. Método: Através de uma amostra de conveniência, 403 entrevistas foram realizadas por meio de questionário aplicado face a face em 9 estruturas para a prática de AF e então, foram empregadas análises descritivas. Resultados: Os resultados indicaram que os níveis de AF dos usuários de parques públicos estão acima dos descritos por outros estudos nacionais (153 ± 291 min/sem de AF de intensidade vigorosa e 417 ± 657 min/sem de AF de intensidade moderada). Além disso, os participantes relataram gastar em média 314 ± 164 minutos/dia (5,2 horas/dia) em CS e tiveram uma alta satisfação com a vida (média = 7,6 – em uma escala de 0 a 10). Além disso, relataram que os principais motivos para a escolha do local foram a proximidade de casa (45,7%) e o contato com a natureza (22,1%). Conclusão: Nosso estudo descritivo demonstra que as pessoas que frequentam parques públicos dedicados à prática de AF tendem a ser mais ativas fisicamente, passam menos tempo em CS, o que contribui para a redução da inatividade física. Foram identificadas barreiras e oportunidades auxiliares no planejamento de políticas públicas e intervenções para o futuro.

Palavras-chave: *Atividade física; Comportamento sedentário; Parques públicos; Saúde pública.*

Introduction

The World Health Organization (WHO) recommends the practice of 150–300 min of moderate intensity physical activity (PA) or 75–150 min of vigorous intensity per week, or an equivalent combination[1], for benefits in health. The benefits include a lower risk of cardiovascular disease, hypertension, obesity, diabetes, and breast and colon cancer[2] and improved quality of life and well-being[3]. Besides that, the WHO also recommends the reduction of sedentary behavior (SB),

which is defined as any activity while awake, with ≤1.5 metabolic equivalents, in a seated or reclining posture[4]. Excessive SB accumulation is associated with all-cause mortality, cardiovascular disease, type II diabetes, abdominal obesity, some types of cancer, and depression[5–7]. In addition, SB is negatively associated with PA[8], which can reduce the chance of meeting the recommendations.

Despite these recommendations, data from the Eurobarometer[9] with 28 countries of the European Union indicate that Portugal has one of the highest prevalences of physical inactivity, defined as noncompliance with the recommended amount of PA[4], with just 4% of the population performing regularly and 72% never performing physical exercise. In addition, in the same report, 20% of the people interviewed reported spending between 5 h 31 min/day and 8 h 30 min/day in SB, and 9% reported spending more than 8 h 31 min/day in the same behavior. These values are considered troubling, given that the data of the prospective studies indicate that for each sitting hour, the risk of all-cause mortality increases by 2%, and this risk can rise up to 5% in the case of more than 7 hours of sitting per day, independent of PA levels[10].

Previous systematic reviews indicate that the built environment, the quality of urban infrastructures, and the installation of fitness equipment or spaces for walking or bicycle use favor the practice of PA[11]. For example, a study[12] based on the International Physical Activity and Environment Network, where the participants were sampled from fourteen cities in ten countries on five continents, into neighborhoods with varied levels of walkability and socioeconomic status, indicated that net residential density, intersection density, public transport density, and number of parks were significantly, positively, and linearly related to PA practice. However, returning to being a friendly city to the environment (i.e., with more walkability or cyclable pathways), is a challenge after decades of urbanization intended for vehicle use around the world[13,14].

Oeiras is a Portuguese city, in the metropolitan area of Lisbon, with an area of 45.88 km^2 and with 177.866 inhabitants[15]. Oeiras is one of the cities with the highest gross income per person in the country (18,456 €), more than the national median (12,568 €)[16]. Furthermore, Oeiras has 26 gardens[17] and green spaces dedicated to meetings, sports, and recreation for the practice of PA (or physical exercise), such as green parks, outdoor fitness equipment, and walking/running paths with distinct contexts (e.g., close to the ocean, in an urban setting). The current public policies of the Municipality of Oeiras incentivize the practice of PA through the Municipal Plan for Development and Innovation in Sports and Physical Activity (2021-2030). This plan aims to promote PA for all, from conceptualization as a social activity in school and leisure contexts to the practice of competition and high performance.

However, despite the effort and investment in improving the structures for the practice of PA in the municipality of Oeiras, no study has been dedicated to identifying the profile of its occupants, their levels of PA and SB, as well as other health indicators, and their satisfaction with these spaces. Furthermore, it is important to identify which barriers and facilities can promote better use of these spaces to inform planning and public policy interventions to include those least covered by these infrastructures. Thus, this is an exploratory-descriptive study that aims to characterize the users of public parks in the municipality of Oeiras, Portugal, identifying their levels of PA, SB, health perception, life satisfaction, and the relationship with the spaces used for the practice of PA and social spaces.

Method

This investigation was conducted according to the STROBE guidelines[18].

Study design, setting, and ethics considerations

This is a cross-sectional investigation carried out through a questionnaire applied by face-to-face interviews in public areas of the municipality of Oeiras, Portugal, regardless of where they lived. The data collection visits took place between March and April 2022, in 9 infrastructures for PA practice provided by the city council (Figure 1). Besides that, during the two weeks of data collection (last week of March and first week of April), the research teams remained at each collection point for a period of 4 hours, alternating between the morning (from 8:00 am to 12:00 pm) and the afternoon (from 3:00 pm to 7:00 pm), and between weekdays and weekends.

The interviews were performed by well-trained interviewers recruited and instructed for the purpose of this study. First, they explained the goal of the investigation to potential participants and that their participation would be voluntary, meaning that they could give up at any time and that no identifiable data would be collected, only their answers. Besides that, a convenience sam-

Figure 1 – Places with fitness infrastructures chosen for data collection
Abbreviation: EFO: Equipment fitness outdoor.

pling design was chosen, with the inclusion of the largest number of accessible cases, to maximize the robustness of the analyses within the feasible research conditions. The study was conducted following the Declaration of Helsinki and approved by the ethics committee of Universidade Lusófona de Lisboa under the number J1822, on January 18, 2022, and the participants gave their informed consent prior to participation in the study.

Participants

A convenience sample of 403 participants was recruited, and the approach was carried out by people who were using outdoor public infrastructures and were invited to participate in the survey. The main inclusion criteria were being an adult (> 18 years old) and being available to answer the questions for a few minutes. The only exclusion criteria were those < 18 years old.

Variables

Age, gender and body weight were self-reported, and then the body mass index was calculated as weight/height^2 . The sleep hours were based on the questions "What time do you go to bed" and "What time do you wake up in the morning on most days"?, and sleep quality was assessed in a binary manner (i.e., sleeping continuously? yes/no). We also assessed their subjective well-being through one item from "the scale of life satisfaction"[19]. The question was "Overall, how satisfied are you with life these days? Nothing was "0" satisfied and "10" extremely satisfied. The level of life satisfaction of people who usually use the public parks in the Municipality of Oeiras was also evaluated, and the measure used in our questionnaire is the same used by the Organization for Economic Cooperation and Development, which measures the well-being of populations.

Prevalence of disease ("Do you have a disease diagnosis from a doctor? yes/no"), the level of education completed ("What is your highest completed educational level?" *less than high school, high school, and graduated* [classified as bachelor or more]), if lived alone or accompanied (alone/accompanied), housing area (living in the Oeiras municipality - yes/no) were self-reported. Furthermore, the following questions were also made: the most common way to commute (i.e., by car/motorcycle, by public transportation, by walking or by bicycle), perception of financial status (i.e., very difficult, difficult, enough to pay the bills, comfortable, very comfortable) were also self-reported.

PA was assessed with the short version of the International Physical Activity Questionnaire (IPAQ). The short version has been demonstrated to have acceptable test-retest reliability (rho = 0.8) and criterion-related validity compared with accelerometers (rho = 0.3) in a 12-country evaluation study that included Portugal[20]. The IPAQ assesses total PA by asking the frequency (the number of days per week) and duration (the average time in minutes per day) that a person performed vigorous and moderate intensity PA, and walking. The responses were then categorized into "active" i.e., meeting PA recommendations" (≥150 min/week of moderate or ≥ 75 min/week of vigorous PA) or "inactive", i.e, not meeting the overall recommendations, according to the WHO guidelines.

SB was also assessed using the IPAQ by asking

about the duration (the average time in hours per day) that the person spends sitting during weekdays and weekends. The answers were weighted by day (min/day) through the weighted arithmetic media of the responses of the time in SB on weekdays and weekend days and then also transformed into a categorical variable: low (≤ 180 min/day), medium (181 – 419 min/day), and high SB (≥ 420 min/day), according to previous cut points[10,21].

Only the equipment fitness outdoors users (who were nearby or using them) were asked if there were physical exercise instructors to help them with the correct use of the equipment free of charge, and if this would make them use them more (with two options: yes, I would use more times/no, I do not use more because of that). Finally, recognizing that some people face barriers to the practice of PA[22], the interviewers asked all participants, about their relationship with the places where they were interviewed through open-ended questions: What are the main goals of going to this place? What are the main reasons for not using this place anymore? What would make them attend their places more often, and what are the main reasons that make you choose this place? Finally, we asked: Do you believe that anything in this place should be changed?

Statistical analysis

Descriptive analyses were performed with the software Jamovi Project, version 2.2. All participants who agreed to participate in the research fully responded to the questionnaire administered in person, and no missing data were identified in the variables analyzed. However, as it was not possible to record the number of people who refused to participate in the interview, it is not possible to estimate the non-response rate.

Results

The sample consisted of 403 participants (n = 231 women [57.3%]), with an average age of 48.5 ± 17.1 years, ranging from 18 to 87 years, and 20.6% were older adults (≥ 65 years) (n = 83). The body mass index of the participants was on average 24.5 ± 3.69 kg/m², and 58.1% had graduated (bachelor's, master's, or Ph.D. degrees), 30.5% had at least a high school education, and 11.4% had less than a high school education. More demographic information on Table 1.

Health indicators

Regarding health indicators, respondents reported

Table 1 – Descriptive analysis of the sample (n = 403)

Variables	n	% or mean ± standard deviation
Participants	403	
Age group		
18-24 years old	37	9.2
25-38 years old	96	23.8
39-64 years old	187	79.4
≥65 years old	83	20.6
Body mass index (kg/m²)	403	24.5 ± 3.69
Moderate physical activity (min/week)	403	417 ± 657
Vigorous physical activity (min/week)	403	153 ± 291
Sedentary behavior (min/day)	403	315 ± 165
Sleep (hours/day)	403	7.96 ± 1.18
Subjective well-being (scale of 0 to 10)	403	7.62 ± 1.69
Sedentary behavior (categories)		
High (≥ 420 min/day)	116	28.8
Medium (181 – 419 min/day)	168	41.7
Low (≤ 180 min/day)	119	29.5
Gender		
Female	231	57.3
Male	172	42.7
Do you live in Oeiras?		
Yes	238	59.1
No	165	40.9
Do you live alone or accompanied by someone else?		
Alone	70	17.4
Accompanied	333	82.6
Education level completed		
Less than high school	46	11.4
High school	123	30.5
More than a bachelor	234	58.1
Financial situation perceived		
Very difficult	6	1.5
Difficult	19	4.7
Enough to pay the bills	175	43.4
Comfortable	178	44.2
Very comfortable	25	6.2
Have you been diagnosed with a disease?		
Yes	122	30.3
No	281	69.7
Do you sleep continuously?		
Yes	233	57.8
No	170	42.2
What is the most common way of commuting in your daily life?		
By car/motorcycle	254	63.0
By public transportation	52	12.9
By walking	92	22.8
Bicycle	5	1.2
Met the recommendation for physical activity		
Yes – physically active	303	75.2
No – physically inactive	100	24.8

sleeping an average of 8 ± 1 hours of nighttime sleep per day, and 57.7% of them said they sleep continuously, an indicator of sleep quality. When asked if they had any disease diagnosed by a doctor, 69.7% of the total reported that they did not, while 30.3% reported having a disease diagnosed.

Our results indicate that 83% of respondents had values ≥ than 7, with 11.7% of them assigning a maximum value of 10, resulting in an average of 7.6.

Physical activity and sedentary behavior

Based on the IPAQ, users of public places reported performing 153 ± 291 min/week of vigorous-intensity PA and 417 ± 657 min/week of moderate-intensity PA. According to the WHO recommendations, 75.2% (n = 303) of respondents complied with the minimum recommended weekly amount of total PA, while 24.8% (n = 100) did not achieve these values (Figure 2). In our stratified analysis, the values separated by age groups indicated that older adults accumulate on average 339 ± 407 min/week of moderate and 98 ± 210 min/week of vigorous PA. More information in Figure 2.

Regarding SB, participants accumulated on average 315 ± 165 min/day (5.23 hours/day), 29.5% of them amounted to less than 3 hours/day, 41.7% accumulated between 3 and 6 hours and 59 min/day, and 28.8% added values above 7 hours/day. Once again, when separated by age groups, the older adults seem to spend less time sitting, with an average of 236 ± 129 min/day, while adults remain seated on average 335 ± 167 min/day.

Respondents reported that the most common way to travel on their day-to-day commutes is mainly by car or motorcycle (63.0%), on foot (22.8%), by public transport (12.9%), and only 1.2% of respondents reported choosing to travel by bicycle.

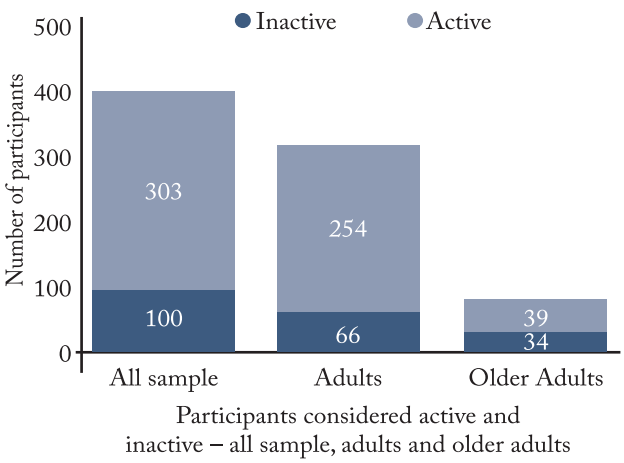

Figure 2 – Distribution of participants who meet/do not meet current World Health Organization physical activity recommendations.

Visitors' relationship with public parks

The main objectives reported when attending public parks were practicing PA (72.7%), feeling greater well-being, to relax or for leisure (9.4%), to be outdoors and in contact with nature (6.7%), to bring or play with children/grandchildren (5.5%), and other reasons (5.7%).

Although a considerable proportion of people reported already using the places sufficiently (34%), the remaining interviewees said they would use it more often if: 1) it was closer to their home (21.3%); 2) if they had more time (20.6%); 3) other personal reasons* (10.9%); 4) if there were more physical exercise instructors (5.2%) and 5) if they had more energy (3.5%). Finally, any other miscellaneous responses that were not related to City Council services or that did not fit into the other categories were indicated as "Other reasons (4.5%)" (Figure 3).

The main reasons that made people choose the

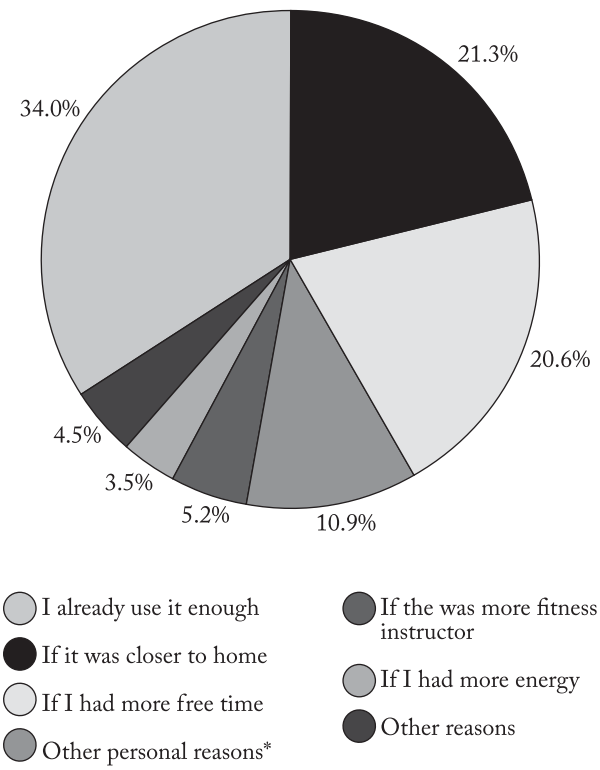

Figure 3 – Reported reasons for no longer using public places for physical activity practice.
*We fit into the category "other personal reasons" those that had personal characteristics, or of a transitory order, or that do not fit into any public responsibility, for example: "my leg is injured" or "is the first time that I came here".

place where they were for their use were mainly the proximity to home (45.7%), the fact that it was close to the sea or felt that they were "in contact with nature" (22.1%), because they liked the place or thought it was beautiful/pleasant (12.9%) and because they believed it was suitable for the practice of PA (10.9%).

When asked "Do you believe that anything in this place should be changed?" and 39.7% of respondents said they were satisfied with the services/structure of the infrastructures, answering that "nothing" should be changed. However, the main suggestions pointed out by the other 60.3% were: 1) that there should be a separate space for cyclists, or that they should use the spaces at the determined times (12.2%). This happened mainly in places where cyclists and pedestrians use the same space, such as on the Oeiras promenade; 2) They pointed out that there should be more toilets (6.5%); 3) that there should be more equipment fitness outdoors's (4%); 4) that the places needed more maintenance (3.7%); 5) that there should be more cafes/terraces (3.7%), among other suggestions, as seen in Table 2.

Only the users of the equipment fitness outdoors (who were nearby or using) were asked if there were physical exercise instructors to help them with the correct use of the equipment free of charge, and if this would make them use them more. The answers indicate that 57.2% of respondents (n = 40 [20 men and 20 women]) support the idea of having an instructor and that they would use them more if it were so. On the other hand, 42.8% (n = 30 [21 men and 9 women]) would no longer use the equipment due to the presence of an instructor, even though it was made available free of charge by the municipality.

Table 2 – Frequency of suggestion based on the question: "Do you believe that anything in this place should be changed?

Change suggestions	n	% of the total
Nothing	160	39.7*
Fewer bikes in walking space – or bike lanes	49	12.2*
More bathrooms	26	6.5*
Other reasons that are not the public responsibility	19	4.7*
There should be more equipment fitness outdoor	16	4.0*
More cafes - terraces - places to eat	15	3.7*
The equipment should be better and/or maintained	15	3.7*
More lighting at night	13	3.2
The floor should be smoother	12	3.0
More litter bins/dog bags/garbage points	12	3.0
More drinking fountains	12	3.0
Free parking	11	2.7
Cover against excessive rain/sun	9	2.2
Two pathways should be more closely linked to each other	5	1.2
There should be physical exercise instructors	4	1.0
Placing orientations on the floor - arrows direction - corridors set	4	1.0
There should be more trees	3	0.7
Removing the stones/wall	3	0.7
It should be a platform for fishermen	2	0.5
People should follow the rules for dogs on leash and the schedule for bicycle use	2	0.5
There should be more patrolling to follow the established rules (e.g. Leash on dogs or schedules for bicycles)	2	0.5
It should be cleaner	2	0.5
There should be more playgrounds for children	2	0.5
Skateboards shouldn't be ridden in the hiking space	1	0.2
There should be toys/an area for dogs	2	0.5
Replace some types of trees	1	0.2
Summer's libraries should be open all year round	1	0.2

* The most cited.

Discussion

The current public policies of the Municipality of Oeiras incentivize the practice of PA through the Municipal Plan for Development and Innovation in Sports and Physical Activity; however, no study has been dedicated to identifying the profile of its occupants, their levels of PA and SB, as well as other health indicators and their satisfaction, barriers and facilities of use in these spaces.

According to our descriptive investigation, people who attend public parks seem to be more physically active than the general average of the country and accumulate less SB. Besides that, we identified that in these places there is a frequency of 20.6% of older people, a value very close to the proportion of older adults in the current Portuguese population, which has about 24% of people over 65 years old[23].

Based on the IPAQ, 75.2% of respondents were considered physically active according to WHO recommendations, while 24.8% (n = 100) did not achieve these values. It is important to note that although 1/4 of the interviewees do not comply with the minimum amount of PA, the average for PA in this study is higher than other research at the national level and reveals encouraging numbers for the reduction of physical inactivity in users of public parks. In the National Food, Nutrition and Physical Activity Survey (IAN-AF, 2015–2016)[24] 72.9% of the Portuguese population did not comply with PA recommendations. Another research carried out during the COVID-19 pandemic

confinement period[25] (REACT-COVID 2.0 - 2021) demonstrated that about 45.7% of the population was considered inactive, according to the same criteria.

The fact that the older adults are possibly retired and do not have the requirement of spending so much time sitting at work context may explain the differences in SB levels found and should alert different companies and workplaces to this reality. Besides that, since older people spend less time in moderate and vigorous PA intensities, we can hypothesize that they spend more time in light PA with daily tasks, which, although important, can have less impact on cardiometabolic results[26,27]. Besides that, according to the answers about commuting in their daily lives, we believe that the population's transport option should be monitored in future research, aiming to increase active transport, corroborating Sustainable Development Goal -12 (sustainable management and efficient use of natural resources and reduction of pollutants), due to a large percentage still travel by motor.

The results also reveal high life satisfaction among Oeiras park goers, with an average of 7.6 (and 83% giving a score ≥ 7, with 11.7% having a maximum value of 10), contrasting with the national average of life satisfaction in Portugal, situated between 5.2 and 5.8 according Better Life Index of the Organization for Economic Cooperation and Development[28]. This positive deviation reinforces the idea that the municipality of Oeiras, known for its high economic, educational, and innovation indicators, provides an urban context that enhances the subjective well-being of its residents and visitors.

Based on the results, we can also identify that the perceived aesthetics of the practice places, the proximity to the house, the spaces being wooded and being in contact with nature (e.g. near the sea), are important factors for the PA practice. This is corroborated by previous studies[29,30] and demonstrates that public policies to improve the urban quality, beyond encouraging the population to be more active by themselves, are necessary. This perception that the environment must be more inviting for frequent use is in line with evidence that natural environments, such as parks and urban green areas, promote greater motivation and adherence to PA, in addition to providing additional psychological and physiological benefits, such as stress reduction and mood improvement[31].

Although most respondents expressed satisfaction with the infrastructure, the suggestions reported (such as separating cyclists and pedestrians, increasing toilets and equipment fitness outdoors, and improving maintenance) highlight practical needs. Addressing these aspects may enhance safety, comfort, and adherence to PA, reinforcing the role of public spaces as health-promoting environments. Furthermore, according to our research, these places would benefit from having an exercise instructor at specific times (for example, a few hours in the morning or afternoon), since over half of the respondents expressed that they would use equipment fitness outdoors more frequently if professional instructors were available.

Regarding the implications for the future, this study provides relevant contributions at the scientific, practical, and policy levels. Scientifically, it helps fill a gap in the characterization of public park users and their PA and SB levels, highlighting the health potential of these environments. Practically, it reinforces the need for strategies such as professional guidance, and age-friendly infrastructure to enhance use and engagement, especially among older adults. From a policy perspective, the findings support continued investment in green and recreational spaces as part of broader health promotion and sustainable urban development strategies.

Regarding limitations, although our research offers new insights into public park users, it is limited by questionnaire-based data prone to recall, social desirability, and misperception of PA intensity, which may overestimate PA or underestimate SB. The sample was drawn from places likely to attract more active individuals (public and social spaces), limiting generalizability. Additionally, refusal rates were not recorded, preventing non-response rate estimation and suggesting potential self-selection bias. Data were also collected in a single municipality and during the spring, which may affect seasonal or regional applicability.

On the other hand, the study aligns with global and national agendas, including the WHO Global Action Plan and the Sustainable Development Goals, particularly regarding health, sustainable cities, and climate action. By assessing PA, life satisfaction, and space-use barriers, it presents a multidimensional perspective valuable for urban health strategies.

In conclusion, our descriptive study demonstrates that people who attend public parks dedicated to PA practice and social spaces tend to be more physically active, spend less time in SB and present more life satisfaction than their peers in other national studies. This corroborates the importance of public policies to pro-

mote PA practice through changing city environments to be more inviting to be physically active and mitigate the effects of climate change. Beyond these findings, the study advances scientific evidence on the role of urban green spaces, informs practical strategies such as age-friendly infrastructure and guided activities, and supports policies that integrate health promotion with sustainable urban development.

Conflict of interest

The authors declare no conflict of interest.

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Author's contributions

Teno SC: Conceptualization; Methodology; Software; Validation; Formal analysis; Investigation; Resources; Data curation; Project administration; Visualization; Funding acquisition; Writing – original draft; Approval of the final version. Júdice PB: Conceptualization; Methodology; Software; Validation; Supervision; Writing – review & editing; Approval of the final version.

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

The authors did not use artificial intelligence tools for preparation of the manuscript.

Availability of research data and other materials

Anonymized data will be available for non-commercial research purposes only upon request to the authors

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Reviewers' assessment

The reviews of this article were originally conducted in Portuguese. This version has been translated using ChatGPT and subsequently reviewed by the Chief Editors.

Reviewer A

Anonymous

- Did not authorize publication of the review.

Reviewer B

Anonymous

- Use of public spaces for physical activity: An exploratory study in the municipality of Oeiras – Portugal – The title has a total of 105 characters (including spaces), which exceeds the limit indicated by the journal.
- The manuscript presents margins that differ from those specified in the Instructions to Authors. I request that the margins be adjusted according to the journal's template in the next version.
- I recommend aligning the introduction of the abstract with the focus of the manuscript. In the current version, by emphasizing infrastructure/equipment, the text gives the impression that the condition of park equipment will be evaluated. I suggest that the contextualization clearly state that the interest lies in who uses the parks, how they use them (PA/SB), and why, positioning the study within this scope—and not in the evaluation of equipment conditions.
- Although the Introduction situates the relevance of PA/SB and the role of parks, the disproportionate emphasis on infrastructure/equipment leads to a reading focused on park condition assessment. The assumptions underlying the gap the study intends to fill are not made explicit. I recommend condensing the review on equipment, anticipating the formulation of the gap centered on user characteristics, user perceptions, and user motivations, and suppressing extensive statistical details and examples from previous studies that do not directly dialogue with the objectives and results of the manuscript.
- The methodological procedures are, in general terms, appropriate to the research problem, but some points require greater clarity. Convenience recruitment was described, but details on data collection times, prevention of re-interviews, and exclusion criteria are lacking. The use of the IPAQ was well justified, but other variables (such as sleep, life satisfaction, and financial perception) were assessed through single items, without reference to validated instruments. The analysis plan is poorly detailed, mentioning only descriptive statistics, even though the results include comparisons not previously described. The ethics section is adequate, but it is suggested to adjust the wording to indicate that no identifiable data were collected, rather than stating that "no personal data" were recorded. Improving the Methods section in these aspects is recommended to ensure greater transparency and reproducibility.
- The results are presented clearly, with appropriate use of tables and figures, which facilitates reading and understanding. However, there is redundancy between the text and the tables/figures, which could be more complementary, with the text focusing on the most relevant findings rather than repeating values already shown. Sample characteristics are well described, but refusals or participant losses were not reported, which should be included for greater transparency. The number of illustrations seems sufficient, although it is important to confirm compliance with the journal's guidelines. It is recommended to revise the section to reduce repetition and emphasize interpretations.
- The discussion presents the main findings clearly and relates them to the international literature, in addition to acknowledging methodological limitations and highlighting strengths of the study. However, it is recommended to strengthen the critical analysis by making clearer how the limitations affect the interpretation of the results (e.g., sample bias, seasonality, and absence of a non-response rate). In addition, it would be useful to organize the study's contributions more systematically, differentiating scientific, practical, and public policy implications. This would give the section greater consistency and increase the relevance of the findings for the scientific community and for local policymakers.
- The conclusion is clear and coherent with the objectives and highlights the importance of public spaces in promoting PA and improving well-being, reinforcing the relevance of urban policies aimed at

these environments. However, it could be strengthened in terms of originality by explicitly stating how the findings contribute to filling the identified gap in the Portuguese context and which practical implications differentiate this study from evidence already consolidated in other countries. A more analytical formulation, highlighting specific contributions to science, public policies, and urban planning, would add strength to the section.

- Final comments: The study presents relevant results by demonstrating that users of public parks tend to be more physically active, less sedentary, and more satisfied with life, highlighting the importance of public policies aimed at promoting physical activity. However, some issues need to be improved before publication. The introduction could be reformulated to more clearly explicate the scientific gap and the positioning of the work in relation to the existing literature. The methodology also requires additional detail, especially regarding sample selection criteria, control of potential biases, and limitations inherent to the data collection process, which is essential to ensure transparency and replicability. In the discussion, it is recommended to reinforce the originality of the contribution and promote a more critical dialogue with previous studies. Finally, the conclusion could be more assertive, clearly highlighting the advancement provided by this study and its implications for practice and public policies.

Editor comments

- The manuscript presents consistent and relevant results for the field, especially by evidencing the relationship between the use of public parks, higher levels of physical activity, reduced sedentary behavior, and greater life satisfaction. These findings reinforce the importance of the topic for both public health and urban planning, justifying interest in its publication. However, I believe the text still requires adjustments to improve clarity and reader understanding. The introduction needs clearer contextualization, situating the contribution of the study within the current scientific debate. The methodology, although generally adequate, requires greater detail to ensure rigor and transparency. In addition, I suggest revising the discussion in order to strengthen its connection with the existing literature and to more critically highlight the innovative nature of the research. With these improvements, the manuscript will have the potential to offer a more robust and clear contribution to studies on physical activity, urban environments, and health.

In addition to the comments sent by the reviewers, I suggest that:

- Only the term gender be used in Table 1.
- The word “concelho” be corrected to “municipality” in the Portuguese title.
- The number of illustrations be adjusted, as the journal guidelines allow up to 5 illustrations and the submitted text contains 6. Also, better organization of the presentations is suggested. For example, Figures 3 and 4 are presented together; one suggestion is to present them as Figures 3a and 3b.
- Update the references used in the text. Of the 29 cited, 18 were published more than five years ago; it is recommended to update some of them with more recent publications.

Final Decision

- Substantial revisions required