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Barriers and facilitators to physical activity among LGBT+ High School students in Pelotas

Barreiras e facilitadores para prática de atividade física em estudantes LGBT+ do Ensino Médio de Pelotas

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ABSTRACT

Introduction: Regular physical activity (PA) is crucial for physical and mental health, especially during adolescence. However, most young people worldwide do not meet recommended PA levels, and participation tends to decline in this age group. The LGBT+ community, although representing a significant portion of the Brazilian population, often faces limited attention to their unique needs and experiences regarding PA. Objective: This exploratory-descriptive study with a convergent mixed-methods approach aimed to identify barriers and facilitators for PA among LGBT+ high school students in Pelotas, Rio Grande do Sul, Brazil. Methods: Fifty students (15 identifying as LGBT+), aged 18 or older, responded to an online questionnaire. Quantitative data were analyzed using the Poisson binomial test for proportions, while qualitative data were examined through Bardin's content analysis. Results: The most commonly reported barriers included lack of time and financial resources. Among LGBT+ students, environmental factors were the predominant barriers, whereas non-LGBT+ students mainly cited perceived lack of safety. Concerning gender, female participants reported a higher mean barrier score (26.1 ± 9.2) compared to males (13.8 ± 13.7) (p = 0.028). Interpersonal factors were the most frequently cited facilitators by LGBT+ students, with humor being particularly noted. Furthermore, LGBT+ participants expressed a stronger preference for individual physical activities. Conclusion: The presence of interpersonal facilitators and the supportive role of school Physical Education emphasize the need for inclusive educational environments. These findings underscore the importance of developing interventions aimed at ensuring equitable access to PA opportunities for adolescents of all gender identities and sexual orientations.

Keywords: Sedentary behavior; Gender perspectives; Adolescence; Barriers to access of health services.

RESUMO

Introdução: A prática regular de atividade física (AF) é fundamental para a saúde física e mental, especialmente na adolescência. Contudo, grande parte dos jovens no mundo não atinge os níveis recomendados de AF, observando-se ainda tendência de declínio na participação nessa fase da vida. A comunidade LGBT+, embora represente parcela significativa da população brasileira, frequentemente recebe pouca atenção em relação às suas necessidades e experiências específicas no contexto da prática de AF. Objetivo: Estudo exploratório-descritivo, com abordagem de métodos mistos convergentes, que teve como objetivo identificar barreiras e facilitadores para a prática de AF entre estudantes LGBT+ do Ensino Médio em Pelotas, Rio Grande do Sul, Brasil. Métodos: Participaram 50 estudantes (15 identificando-se como LGBT+), com 18 anos ou mais, que responderam a um questionário online. Os dados quantitativos foram analisados por meio do teste binomial de Poisson para proporções, enquanto os qualitativos por análise de conteúdo de Bardin. Resultados: As barreiras mais relatadas foram falta de tempo e de recursos financeiros. Entre estudantes LGBT+, predominaram barreiras ambientais, enquanto entre os demais destacou-se a percepção de insegurança. Quanto ao gênero, observou-se maior escore médio de barreiras entre estudantes do gênero feminino (26,1 ± 9,2) em comparação ao masculino (13,8 ± 13,7) (p = 0,028). Entre os facilitadores, destacaram-se aspectos interpessoais, especialmente o humor, mais citados por estudantes LGBT+, que também relataram preferência por modalidades individuais. Conclusão: A presença de facilitadores interpessoais e o papel de apoio da Educação Física escolar enfatizam a necessidade de ambientes educacionais inclusivos. Os resultados reforçam a importância de ambientes educacionais inclusivos e de intervenções que promovam acesso equitativo à AF para adolescentes de diferentes identidades de gênero e orientações sexuais.

Palavras-chave: *Comportamento sedentário; Perspectiva de gênero; Adolescente; Barreiras ao acesso aos cuidados de saúde.*

Introduction

Gender and sexual diversity are significant realities in society, and in Brazil, it is estimated that lesbians, gays, bisexuals, transgender individuals, and other groups represented by the acronym LGBT+ (encompassing all spectrums of sexuality and gender) represent approximately 12% of the adult population, which corresponds to about 19 million people[1,2]. Despite this representativeness, topics related to bodies, bodily practices, gender, and sexuality—especially those outside the heterocisgender norm—are still frequently marginalized or viewed as problematic, receiving less attention and superficial treatment in debates and research[3]. Specifically in the field of physical activity (PA), there is a notable gap in knowledge—whether empirical, epidemiological, qualitative, or quantitative—regarding the demands, experiences, and needs of the LGBT+ community[4].

It is noteworthy that regular PA practice is relevant to health promotion, and its benefits are widely documented, including the reduction of the risk of chronic diseases such as cardiovascular diseases, type 2 diabetes, and hypertension[5]. In addition to physical aspects, PA significantly contributes to mental health, helping reduce depressive and anxiety symptoms, improving cognitive function, and increasing self-esteem[6]. Furthermore, the World Health Organization recommends that adolescents engage in 60 minutes of moderate to vigorous intensity PA daily for healthy development and well-being[7]. However, the reality is concerning: a report from the World Health Organization itself indicates that approximately 81% of adolescents aged 11 to 17 years globally do not reach these levels[8]. This figure is concerning, especially considering that participation in PA during adolescence is a strong predictor of an active lifestyle in adulthood and provides biological, psychological, social, and academic benefits specific to this age group[9-12]. A declining trend in PA levels during adolescence has also been observed[12].

Low adherence to PA during school age suggests the existence of multiple barriers[13], and the perception of these barriers may predict participation in PA[14,15]. These barriers may involve intrapersonal (psychological, biological), interpersonal (social), and environmental influences[16,17]. Internationally, the most frequently cited barriers include lack of time, motivation, companionship, the presence of illnesses/injuries, and a preference for physically inactive activities[18,19], varying according to maturation and school grade[20]. In Brazil, prominent barriers include lack of interest, time, knowledge, favorable weather conditions, and school obligations[21,22]. Gender differences are also observed, with girls reporting a higher perception of barriers[22].

Considering the importance of PA during school age, the general barriers already identified, and the significant gap in knowledge regarding the LGBT+ population, it becomes relevant to investigate the specificities of this group. Although there is evidence that gender and sexual orientation may be relevant factors in understanding the prevalence of and barriers to PA[23,24], there is a lack of studies and instruments focused on this population, especially in the Brazilian context[25]. In light of this scenario, the present study had as a general objective to identify facilitators and barriers to PA among High School students in the city of Pelotas, Rio Grande do Sul, Brazil, with special emphasis on information derived from the LGBT+ community, seeking to contribute to filling this important research gap; as a specific objective, to verify if there is a difference in the analysis according to gender.

Methods

This study is exploratory-descriptive in nature and aimed to obtain data about people, places, and interactive processes[26]. The investigation was conducted in Pelotas, a city in southern Rio Grande do Sul, Brazil, with approximately 325,689 inhabitants, among whom 10,068 are High School students enrolled in public schools. In the city, there are 22 public schools offering regular High School education, located within the seven urban regions.

Broadly, the study participants are High School students from public schools in Pelotas, Rio Grande do Sul, including those who self-identified as LGBT+. Regarding sexual orientation, to clarify possible doubts, heterosexual individuals are those who experience romantic/sexual/affective attraction toward people of the opposite sex/gender; bisexual individuals are those who engage affectively/sexually with people of both sexes/genders; whereas a gay person is a male individual (cis or trans) who engages affectively/sexually with other male individuals, and a lesbian is affectively and/or sexually attracted to women of the same sex/gender (cis or trans)[27].

To be included in the study, the individual had to be 18 years of age or older and a High School student enrolled in a public school, attending morning, afternoon, or evening classes. Individuals younger than 18 years of age, those with physical disabilities, psychosocial disabilities, residents of rural areas, pregnant women, and

breastfeeding women were excluded. The project was submitted to and approved by the Human Research Ethics Committee of the School of Physical Education and Physical Therapy at the Federal University of Pelotas, under protocol number #6,298,891. All participants read and signed the Informed Consent Form.

To conduct the study, all public schools located in the urban area of the city of Pelotas that offered regular High School education were contacted electronically. However, of the total of 22 schools, only six (27%) responded positively to the contact for presentation of the study and data collection. After receiving responses from the schools, a date was scheduled for an in-person visit to formally present the research to the principals/coordinators, who authorized access to the school and the student community. Data collection was conducted on different days and organized by classes, following these steps: (1) initially, the research, objective, and instrument were presented; (2) afterward, a QR code was provided to access the data collection instrument; (3) then, using their own cell phones, students scanned the QR code provided by the researchers, which directed them to an online form related to the study.

Regarding the instrument, after signing the Informed Consent Form, individuals who decided to participate in the study completed an instrument made available via Google Forms, composed of three sections: (i) the first intended for demographic data; (ii) the second consisting of a generic questionnaire on general barriers, developed by Martins and Petroski[28], which allows the identification and understanding of obstacles that interfere with the practice of physical activities, with the occurrences of "always" and "almost always" summed. It is noteworthy that the respective instrument has validation established through test–retest reliability greater than 0.86 and a Kappa coefficient greater than 0.55; finally, (iii) the third section contained the specific barriers questionnaire. In this case, the specific questionnaire on barriers to PA and sport for the LGBT+ community (BPASQ-LGBTQ)[2] was used, which contains 17 questions, encompasses different spectrums of sexuality and gender, measures barriers using an ecological model with intrapersonal, interpersonal, and environmental domains, and was previously validated with a Cronbach's alpha providing internal consistency ranging from 0.74 to 0.81[2].

Data collection took place between February and June 2024. After the completion of this procedure, individual data were entered into spreadsheets and subsequently analyzed. In the present study, factors that could create opportunities for or enable the practice of PA were considered facilitators[29]. In this sense, a variable that did not constitute a barrier for the individuals assessed was identified as a facilitator for the practice of PA.

The data are presented in narrative and tabular form. Measures of central tendency and dispersion are presented, as well as absolute and relative data up to the maximum per group (LGBT+ versus Non-LGBT+). Comparisons between proportions of two samples (LGBT+ versus Non-LGBT+), with dichotomous data (yes/no), were performed using the Poisson binomial test for proportions.

Comparisons between the two groups were performed using Student's t-test, and comparisons between the three domains of barriers related to physical activity were conducted using one-way analysis of variance, with differences identified using Bonferroni post-hoc tests. The significance level adopted was 5%. The software used for data analysis was the Statistical Package for the Social Sciences (SPSS), version 20.0.

For content analysis, the principles proposed by Bardin[30] were used. The analysis was carried out in three stages: pre-analysis, exploration of the material, and treatment of the results, with inference and interpretation. Initially, a floating reading and organization of the textual corpus were performed. Subsequently, thematic cores were defined based on categories emerging from the data. The recording units were coded and grouped according to affinities of meaning, allowing for structured categorization.

Results

The final sample consisted of 50 students, 15 of whom belonged to the LGBT+ community (10 female and 5 male), and 35 students (19 female and 16 male) who did not belong to the community. Among all participants, 76% were White, 12% Black, 10% Brown, and 2% Indigenous ($Z = 4.06$; $p < 0.001$). Considering losses, refusals, and exclusions, 24 students were not included in the sample. It is noteworthy that LGBT+ students had a mean age of 19.8 ± 1.3 years, and the others had a mean age of 19.6 ± 1.2 years. Regarding sexual orientation, according to the proportions test, approximately 70% (n = 35) of the students identified as heterosexual, 24% (n = 12) as bisexual, 2% (n = 1) as gay, 2% (n = 1) as lesbian, and 2% (n = 1) as other ($Z = 2.86$; $p = 0.002$). Regarding school year, 82% of the participants were in the final year, 14% were in the

second year, and 4% were at the beginning of High School (Z = 6.77; p < 0.001). It was also observed that 80% of the students attended school in the morning, 16% in the evening, and 4% attended in the morning and afternoon (Z = 6.29; p < 0.001).

Table 1 presents the data regarding general barriers. Overall, lack of time shows a high prevalence in both groups (LGBT+ = 53%; Non-LGBT+ = 46%), followed by lack of financial resources (LGBT+ = 40%; Non-LGBT+ = 34%) and unavailability of an adequate environment for practice (LGBT+ = 40%; Non-LGBT+ = 31%). Furthermore, we observed a higher proportion of individuals from the LGBT+ community, indicating that climatic factors (40% of responses indicated the categories "always" or "almost always," p < 0.001) and lack of companionship (40% of responses, p < 0.001) constitute major barriers. In contrast, the Non-LGBT+ group indicated that lack of safety (23% of responses, p < 0.001) tends to be the most prevalent barrier compared to the other group.

Table 1 – Absolute and relative frequency of occurrences of 'always' and 'almost always', according to barriers to physical activity, by group.

Barriers found	Always/Almost Always		p*	power
	Non-LGBT+ (n = 35)	LGBT+ (n = 15)		
	n (%)	n (%)		
Lack of time	16 (46)	8 (53)	0.32	0.16
Lack of financial resources	12 (34)	6 (40)	0.37	0.14
Unavailability of adequate environment	11 (31)	6 (40)	0.18	0.26
Unavailability of equipment	9 (26)	5 (33)	0.27	0.18
Bad mood	8 (23)	5 (33)	0.11	0.34
Laziness/fatigue	8 (23)	5 (33)	0.11	0.34
Lack of safety	8 (23)	1 (7)	<0.001	0.98
Lack of interest	8 (23)	4 (27)	0.51	0.09
Present or past injuries	6 (17)	2 (13)	0.42	0.11
Mild pain or discomfort	6 (17)	4 (27)	0.08	0.39
Lack of skills	6 (17)	3 (20)	0.58	0.07
Climatic factors	5 (14)	6 (40)	<0.001	0.98
Lack of companionship	5 (14)	6 (40)	<0.001	0.98
Lack of encouragement from family and/or friends	2 (6)	1 (7)	0.77	0.03

* Poisson binomial test.

Regarding general facilitators (less frequently cited barriers), it is important to highlight that no statistical tests were performed on Table 2; these are descriptive data. Table 2 indicates a common facilitator in both groups: the absence of bad mood. The most predominant facilitators among LGBT+ students were lack of financial resources and lack of skills. In contrast, for Non-LGBT+ students, they were the presence of mild pain or discomfort and lack of encouragement from family and/or friends. Overall, a greater concentration of facilitators was observed among individuals who do not belong to the LGBT+ community, with five of the eight categories presenting more than 14 indications of "rarely."

Table 2 – General facilitators* for the practice of physical activity, stratified by group.

Facilitators	Rarely/Never	
	Non-LGBT+ (n = 35)	LGBT+ (n = 15)
	n (%)	n (%)
Climatic factors	14 (40)	-
Unavailability of equipment	14 (40)	-
Lack of companionship	-	4 (27)
Lack of financial resources	-	5 (33)
Lack of encouragement from family and/or friends	16 (46)	-
Bad mood	15 (43)	4 (27)
Laziness/fatigue	16 (46)	-
Lack of skills	-	5 (33)

Descriptive data. *Barriers with lower citations were considered as a facilitator.

Table 3 presents the specific barriers indicated by LGBT+ students for the practice of PA. In the total sample, considering both female and male genders, barriers related to the environmental domain were predominantly indicated (11.1 ± 6.9 points, F = 6.93; p = 0.003), which had a higher score than those of the intrapersonal and interpersonal domains (respectively 6.3 ± 4.1 and 4.2 ± 4.0 points; p < 0.05). Furthermore, a higher score was observed in the number of barriers among female participants compared to male participants (26.1 ± 9.2 versus 13.8 ± 13.7 points; t = -2.08; p = 0.028).

In the present study, the effects of school Physical Education on the practice of PA among High School students were also observed. Based on content analysis, the category "Willingness/Encouragement/Interest in Practice," stimulated by school PA, emerged and was cited by a slightly higher proportion of LGBT+

Table 3 – Comparison between genders and between the types of barriers related to the E-score of specific barriers for students in the LGBT+ community.

Participant	Gender*	Intrapersonal	Interpersonal	Environment#	Total
1	Male	0	0	2	2
2	Male	1	2	2	5
3	Male	3	0	4	7
4	Male	6	4	10	20
5	Male	11	8	16	35
	Total male	4.2 ± 4.4	2.8 ± 3.3	6.8 ± 6.1	13.8 ± 13.7
1	Female	2	0	8	10
2	Female	2	1	15	18
3	Female	6	7	8	21
4	Female	6	0	19	25
5	Female	10	5	10	25
6	Female	12	14	6	26
7	Female	10	7	10	27
8	Female	11	3	18	32
9	Female	5	6	12	33
10	Female	10	7	27	44
	Total female	7.4 ± 3.7	5.0 ± 4.3	13.3 ± 6.5	26.1 ± 9.2*
	Total sample	6.3 ± 4.1	4.2 ± 4.0	11.1 ± 6.9#	21.1 ± 11.9

* Females present a higher total score than males (p = 0.028). Student's t-test. # Environmental domain descriptively presents a higher total score than the other domains (p = 0.003). ANOVA with Bonferroni post-hoc test.

students (46.7%) compared to Non-LGBT+ students (40%). The perception of "New opportunities/New knowledge/New sports/Through sports" was considerably more frequent among Non-LGBT+ students (42.9%) than among participants from the LGBT+ community (26.7%). Regarding the category "Physical Factors," "Physical/Mental Well-being" was indicated by 20% of Non-LGBT+ students and 13.3% of LGBT+ students; the factors "Enjoyment in activities" (6.7%) and "Feeling of competence" (6.7%) were mentioned exclusively by students from the LGBT+ group. Within the category "Intrinsic Factors," "Interactive/Fun classes" were identified as a positive influence by identical percentages in both groups (20% of LGBT+ and 20% of Non-LGBT+ students); the importance of "Didactic teachers/Supportive peers" was recognized by a higher proportion of LGBT+ students (13.3%) compared to Non-LGBT+ students (5.7%); finally, the mention of "Insufficient class time" emerged only in the Non-LGBT+ group, corresponding to 2.9% of this group. In contrast, some students outside the LGBT+ community indicated that school Physical Education classes do not contribute to an active lifestyle, as there is inadequate infrastructure in public schools, with a lack of opportunities, as well as lack of interest from teachers and students.

Regarding the practice of PA beyond Physical Education classes, 66.7% of LGBT+ students answered "yes," and among students outside the community, approximately 77.1% answered "yes" (Z = 0.77; p = 0.43). Students outside the community opt for sports modalities (p = 0.04), whereas students from the LGBT+ community choose other modalities, generally non-sport-related and with fewer social interactions, without the need for companionship (p < 0.001).

It is noteworthy that, of the total sample, 46 students (92%) indicated that school Physical Education classes influence the practice of PA outside the school environment (only 4 students outside the LGBT+ community did not agree with this statement). The student community as a whole confirmed that they recognize and understand the relevance of PA for health, and overall, 74% were aware of the minimum PA recommendations, with no differences between groups (Z = -0.63; p = 0.71).

Discussion

As the main findings of the present study, the following stand out: (1) Lack of time and lack of financial resources emerged as important barriers in both student groups. (2) Specifically within the LGBT+ community, the most evident barriers are located in the environ-

mental domain. (3) Facilitators within the community were situated in the interpersonal domain, that is, related to social relationships with family, friends, or peers. (4) School Physical Education positively affects students' desire to practice PA outside the school setting. Within the LGBT+ community, (5) females presented more barriers than males and (6) students prefer to engage in individual modalities, preferably non-sport-related. Conceptually, barriers are understood as any circumstance or factor that hinders, limits, or prevents individuals from engaging in a given behavior[31].

A better understanding of barriers to the practice of PA may assist in the development of appropriate approaches to reduce physical inactivity, given that they are inversely associated with leisure-time PA[32,33]. A previous study identified that young people present a greater number of factors related to environmental barriers for practices performed during leisure time[31]. According to research conducted in the same city as this study, the most prevalent barriers were climate (rainy weather), followed by laziness/fatigue and lack of an adequate place[34], results that are consistent with the barrier of climatic factors cited by the LGBT+ community. Related to this, the city in question is part of the southern region of Brazil, whose location has well-defined seasons, which makes the practice of physical activities in outdoor environments more difficult, especially during the cold and rainy winter[34]. That said, it is observed that environmental barriers to PA are factors that exert a strong influence on physically active behavior[35], and this reaffirms the barriers identified by LGBT+ students.

Recent studies show that LGBT+ students report more barriers to the practice of PA compared to non-LGBT+ students, particularly those related to the environmental domain[35] — a result that is consistent with the findings of this study. Studies investigating this specific population with regard to gender and sexuality are scarce, and even rarer when addressing gender differences in school settings[20,36].

According to Rosselli et al.[36], the barriers perceived by girls are experienced twice as much as by boys. These data corroborate the results found here, given that the female gender presented a greater number of barriers than the male gender. This result is also consistent with findings from other studies, which report that girls have a higher number of barriers than boys[22,36]. This gender difference may be explained by both, cultural aspects, in which boys are more encouraged to engage in PA, and by preferences and other priorities, as well as different social expectations placed on female students, which generate greater difficulty for participation in PA among adolescent girls[37]. These results reinforce the need for public policies directed at the female gender, based on the principle of equity. Structural actions are essential to reduce gender inequalities, considering the specific barriers faced by women in the practice of PA.

Specifically within the school context, some of these barriers are insufficiently addressed, and school Physical Education could use its potential to promote health and an active lifestyle among students[17], since the cross-cutting contemporary themes established in the National Common Curricular Base would allow the development of interventions regarding the need and importance of addressing major social issues in classes, such as public health, social relations at work, social and racial prejudices, and sex and gender roles[38].

Furthermore, school Physical Education constitutes a context for promoting and encouraging the practice of PA; however, there are factors that may serve as barriers or even discourage students from engaging in physical activities. In this sense, Pizani et al.[39] indicate that teachers can positively or negatively influence students' motivation; therefore, professional training for a teaching role focused on the formation of habits and practices is highly relevant. It is noteworthy that most of the individuals who participated in the present study found that the activities carried out during Physical Education classes influence the practice of PA outside the school context, which is endorsed by Camargo et al.[29], who state that schools can contribute to the promotion of PA and are expected to be employed as drivers of such initiatives, which facilitates practice beyond experiences in school Physical Education classes.

Regarding specific barriers to the practice of PA within the LGBT+ community, the environmental domain stands out, in which issues related to organizational, institutional, and community factors are located, such as financial cost, lack of inclusion, and adequacy of locker rooms, among others. Added to this is the fact that, among the PA practiced outside school, students from the LGBT+ community prefer more solitary activities, which confirms and justifies the barrier identified by them — and highlights challenges for public sport and leisure policies at the national level.

The present study is not free from limitations. Due to the nature of the topic, there was a high restriction of access to public educational settings and, consequently,

a smaller sample size than would have been possible, including when compared to other studies on barriers to the practice of PA. Another limitation concerns the absence of a validated instrument in Brazil for LGBT+ students. The questionnaire used was freely translated, without cross-cultural adaptation, and was originally validated in Spain[2]. This limitation should be considered, although the instrument contributed to the specificity of the findings.

This study identified lack of time and lack of resources as universal barriers to the practice of PA. Despite the barriers, school Physical Education positively influences students' desire to be active outside school, although LGBT+ female students report more obstacles. The relevance of school physical education for the practice of PA outside the school environment is highlighted. In addition, students belonging to the LGBT+ community possess knowledge about the practice of PA and identify their barriers in a particular way, which directs them toward the practice of individual and non-sport-related activities. It is suggested that future studies expand investigations on the LGBT+ community, as it is necessary to understand the specificities of existing minorities, which may guide public policy efforts to promote an increase in the prevalence of PA at the population level.

Conflict of Interest

The authors declare no conflict of interest.

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Author Contributions

Lopes ÉM: Conceptualization; Methodology; Software development, implementation and testing; Data and experiment validation; Investigation; Provision of tools; Data curation; Supervision; Project administration; Writing – original draft; Writing – review and editing; Approval of the final version of the manuscript. Del Vecchio FB: Conceptualization; Methodology; Software development, implementation and testing; Data and experiment validation; Data analysis; Investigation; Data curation; Supervision; Project administration; Data presentation design; Writing – original draft; Writing – review and editing; Approval of the final version of the manuscript.

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

After publication the data will be available on demand to authors.

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References

1. Spizzirri G, Eufrásio R, Lima MCP, Carvalho Nunes HR, Kreukels BPC, Steensma TD, et al. Proportion of people identified as transgender and non-binary gender in Brazil. Sci. Rep. 2021;15(2):123-37. doi: https://doi.org/10.1038/S41598-021-81411-4
2. Úbeda-Colomer J, Gil-Quintana J, Pereira-García S, López-Cañada E, Pérez-Samaniego V, Devís-Devís J. Development and validation of the Barriers to Physical Activity and Sport Questionnaire for lesbian, gay, bisexual, transgender and queer/questioning persons. Public Health. 2020;185:202–8. doi: https://doi.org/10.1016/j.puhe.2020.05.020
3. Pereira E, Silva A. "Apresentação". In: Pereira, Erik; Silva, Alan (Orgs.). Educação Física, Esporte e Queer: sexualidades em movimento. Curitiba: Appris, 2019, p. 9-11. doi: https://doi.org/10.1590/1806-9584-2021v29n273490
4. Polo MC, Olivar JM, Tavares G. Práticas corporais e população LGBTI+ na Educação Física: uma revisão de escopo. Conexões. 2022;20:e022007. doi: https://doi.org/10.20396/conex.v20i1.8666520
5. Warburton DER, Bredin SSD. Health benefits of physical activity: a systematic review. Curr Opin Cardiol. 2017 Sep;32(5):541-556. doi: https://doi.org/10.1097/HCO.0000000000000437
6. Brown HE, Pearson N, Braithwaite RE, Brown WJ, Biddle SJH. Physical activity interventions and depression in children and adolescents: a systematic review and meta-analysis. Sports Med. 2013;43(3):195–206. doi: https://doi.org/10.1007/s40279-012-0015-8
7. The Lancet Child & Adolescent Health. Recommendations for physical activity in children and adolescents. Lancet Child Adolesc Health. 2022;6(7):562-8. doi: https://doi.org/10.1016/S2352-4642(22)00318-2
8. World Health Organization (WHO). Global status report on physical activity and health. Geneva: WHO; 2022.
9. Azevedo MR, Araújo CL, Silva MC, Hallal PC. Tracking of physical activity from adolescence to adulthood: a population-based study. Rev. Saúde Pública. 2007;41(1):69–75. doi: https://doi.org/10.1590/s0034-89102007000100010
10. Strong WB, Malina RM, Blimkie CJ, Daniels SR, Dishman RK, Gutin B, et al. Evidence based physical activity for school-age youth. J Pediatr. 2005;146(6):732-7. doi: https://doi.org/10.1016/j.jpeds.2005.01.055
11. Hallal, PC, Victora, CG, Azevedo, MR, Wells, JC. Adolescent physical activity and health: a systematic review. Sports Med. 2006;36(12):1019–30. doi: https://doi.org/10.2165/00007256-200636120-00003

12. Brodersen NH, Steptoe A, Boniface DR, Wardle J. Trends in physical activity and sedentary behaviour in adolescence: ethnic and socioeconomic differences. Br J Sports Med. 2007;41(3):140-4. doi: https://doi.org/10.1136/bjsm.2006.031138

13. Müller WA, Silva MC. Barreiras à prática de atividades físicas de adolescentes escolares da zona rural do sul do Rio Grande do Sul. Rev. Bras. Ativ. Fís. Saúde. 18(3):344-53. doi: https://doi.org/10.12820/rbafs.v.18n3p344

14. Hammerschmidt P, Tackett W, Golzynski M, Golzynski D. Barriers to and facilitators of healthful eating and physical activity in low-income schools. J Nutr Educ Behav. 2011;43(1):63-8. doi: https://doi.org/10.1016/j.jneb.2009.11.008

15. Hsu YW, Chou CP, Nguyen-Rodriguez ST, McClain AD, Belcher BR, Spruijt-Metz D. Influences of social support, perceived barriers, and negative meanings of physical activity on physical activity in middle school students. J Phys Act Health. 2011;8(2):210-9. doi: https://doi.org/10.1123/jpah.8.2.210

16. Dishman RK, Heath GW, Lee IM. Physical activity epidemiology. Champaign: 2ª ed Human Kinetics; Illinois, EUA, 2013.

17. Bauman AE, Reis RS, Sallis JF, Wells JC, Loos RJ, Martin BW; Lancet Physical Activity Series Working Group. Correlates of physical activity: why are some people physically active and others not?. Lancet. 2012;380(9838):258-71. doi: https://doi.org/10.1016/S0140-6736(12)60735-1

18. Tergerson JL, King KA. Do perceived cues, benefits, and barriers to physical activity differ between male and female adolescents?. J Sch Health. 2002;72(9):374-80. doi: https://doi.org/10.1111/j.1746-1561.2002.tb03562.x

19. Gordon-Larsen P, Griffiths P, Bentley ME, et al. Barriers to physical activity: qualitative data on caregiver-daughter perceptions and practices. Am J Prev Med. 2004;27(3):218-23. doi: https://doi.org/10.1016/j.amepre.2004.05.002

20. Kimm SY, Glynn NW, McMahon RP, Voorhees CC, Striegel-Moore RH, Daniels SR. Self-perceived barriers to activity participation among sedentary adolescent girls. Med Sci Sports Exerc. 2006;38(3):534-40. doi: https://doi.org/10.1249/01.mss.0000189316.71784.dc

21. Pandolfo KCM, Minuzzi T, Machado RR, Lopes LFD, Azambuja CR, Santos DL. Barreiras percebidas à prática de atividades físicas em escolares do ensino médio. Rev Bras Cineantropom Desempenho Hum. 2016;18(5):567-76. doi: https://doi.org/10.1590/1980-0037.2016v18n5p567

22. Dambros DD, Lopes LFD, dos Santos DL. Barreiras percebidas e hábitos de atividade física de adolescentes escolares de uma cidade do sul do Brasil. Rev Bras Cineantropom Desempenho Hum. 2011;13(6):422–8. doi: https://doi.org/10.5007/1980-0037.2011v13n6p422

23. Espinoza SM, Brown C, Gower AL, Eisenberg ME, McPherson LE, Rider GN. Sport and Physical Activity Among Transgender, Gender Diverse, and Questioning Adolescents. J Adolesc Health. 2023;72(2):303-306. doi: https://doi.org/10.1016/j.jadohealth.2022.09.020

24. Lindström M, Rosvall M. Sexual identity and low leisure-time physical activity: a population-based study. Public Health. 2020;182:77-9. doi: https://doi.org/10.1016/j.puhe.2020.02.003

25. Santos MS, Fermino RC, Reis RS, Cassou AC, Añez CRR. Barreiras para a prática de atividade física em adolescentes: um estudo por grupos focais. Rev Bras Cineantropom Desempenho Hum. 2010;12(3):137–43. doi: https://doi.org/10.5007/1980-0037.2010v12n3p137

26. Godoy AS. Introdução à pesquisa qualitativa e suas possibilidades. Rev Adm Emp. 1995;35(2):57–63. doi: https://doi.org/10.1590/S0034-75901995000200008

27. Brasil. Ministério da Educação. Gênero e diversidade na escola: formação de professores/es em gênero, sexualidade, orientação sexual e relações étnico-raciais. Brasília: MEC; 2009.

28. Martins M, Petroski EL. Mensuração da percepção de barreiras para a prática de atividades físicas: uma proposta de instrumento. Rev Bras Cineantropom Desempenho Hum. 2000;2(1):58–65.

29. Camargo E, Paiva H, Pacheco H, Campos W. Facilitadores para a prática de atividade física no lazer em adolescentes. Rev Bras Ativ Fís Saúde. 2018;22(6):561–7. doi: https://doi.org/10.12820/rbafs.v.22n6p561-567

30. Bardin L. Análise de conteúdo. Lisboa: Edições 70; 2011.

31. Christofoletti M, Inês Streit IA, Garcia LMT, Mendonça G, Benedetti TRB, Papini CB, et al. Barreiras e facilitadores para a prática de atividade física em diferentes domínios no Brasil: uma revisão sistemática. Cien Saude Colet. 2022;27(9):3487–502. https://doi.org/10.1590/1413-81232022279.04902022

32. Rech CR, Camargo EM, Araujo PAB, Loch MR, Reis RS. Perceived barriers to leisure-time physical activity in the brazilian population. Rev. Bras. Med. Esporte. 2018;24(4):303–9. https://doi.org/10.1590/1517-869220182404175052

33. Vasquez T, Fernandez A, Haya-Fisher J, Kim S, Beck AL. A Qualitative Exploration of Barriers and Facilitators to Physical Activity Among Low-Income Latino Adolescents. Hisp Health Care Int. 2021;19(2):86-94. doi: https://doi.org/10.1177/1540415320956933

34. Copetti J, Neutzling MB, Silva MC. Barreiras à prática de atividades físicas em adolescentes de uma cidade do sul do Brasil. Rev Bras Ativ Fís Saúde. 2010;15(2):88–94. doi: https://doi.org/10.12820/rbafs.v.15n2p88-94

35. Peterson KT, Frederick GM, Bopp M. LGBTQ+ college students report more barriers, less benefits to physical activity and sport participation: A quantitative and qualitative study. J Am Coll Health. 2025;73(5):2046-53. doi: https://doi.org/10.1080/07448481.2025.2511936

36. Rosselli M, Ermini E, Tosi B, Boddi M, Stefani L, Toncelli L, Modesti PA. Gender differences in barriers to physical activity among adolescents. Nutr Metab Cardiovasc Dis. 2020;30(9):1582-1589. doi: https://doi.org/10.1016/j.numecd.2020.05.005

37. Corr M, McSharry J, Murtagh EM. Adolescent Girls' Perceptions of Physical Activity: A Systematic Review of Qualitative Studies. Am J Health Promot. 2019;33(5):806-19. doi: https://doi.org/10.1177/0890117118818747

38. Soares CL, et al. Metodologia do ensino de Educação Física. São Paulo: Cortez; 1992.

39. Pizani J, Barbosa-Rinaldi IP, Miranda ACM, Vieira LF. (Des)motivação na educação física escolar: uma análise a partir da teoria da autodeterminação. Rev Bras Ciênc Esporte. 2016;38(3):259–6. doi: https://doi.org/10.1016/j.rbce.2015.11.010

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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

André Ulian Dall Evedove
Marília Medical School, Marília, São Paulo, Brazil.

Dear Editor,

First, I would like to thank you for the opportunity to review this manuscript, which addresses a complex topic of extreme relevance to the context of health promotion and physical activity. Considering these aspects, I value the effort made by the authors and congratulate them on the choice of topic.

In order to strengthen the manuscript, I prepared some suggestions for changes to wording that at times made the text verbose and repetitive. In the Methods section, I considered it important that the authors add information related to the process of data collection and analysis, as well as include the approval number from the Research Ethics Committee. In the Discussion section, I suggested that the authors review and include studies that show differences in physical activity practice between LGBTQIAPN+ and heterosexual adolescents. As written, between lines 3 and 7 on page 12 of the Discussion, it gives the impression that sexual minorities such as LGBTQIAPN+ individuals are more physically active than heterosexual people. However, there are studies with adolescents that present results that diverge from those addressed by the authors. Below, I detail the suggested modifications.

Introduction

- Page 4, line 3: What is meant by the LGBTQIAPN+ community? It would be interesting to briefly describe what this acronym means and then subsequently use only the acronym.
- Although authors such as Ciasca, Hercowitz, and Lopes Junior (2021), editors of the book *"LGBTQIA+ Health: Transdisciplinary Care Practices,"* acknowledge multiple ways of referring to non-cisgender, non-heterosexual, and non-endosex individuals, such as LGBTQIA+ or LGBTQIAPN+, it is important to clarify in the manuscript who is represented in this acronym.
- Page 4, line 11: There is a repetition of "physical activity (PA)." The authors already mentioned this in the previous paragraph. It is recommended to use the acronym PA to avoid repetition.
- Page 4, line 17: The authors can also use the acronym PA.

Methods

- Page 6, third paragraph, line 11: The authors state that the project was approved by the Research Ethics Committee but did not provide the approval number.
- Page 6, fourth paragraph, lines 14–24: The authors describe the data collection process and access to the QR code. Did all participants have a mobile phone to access the instrument? Did the authors take any steps to ensure participation of all students, including those who might not have a phone?
- Page 7, lines 17–19: The following sentence is confusing: "In this sense, a variable that did not constitute a barrier for the individuals assessed was identified as a facilitator for PA practice."
- Page 7, lines 20–25 and page 8, lines 1–2: Did the authors use any software for statistical analysis?

Results

- Page 8, lines 8–9: Adjust the excerpt "Between losses, refusals and exclusions, 24 students were left out of the sample." A "who" is missing between "students" and "were."
- Page 8, lines 9–10: The authors wrote, "It is noteworthy that students belonging to the LGBTQIAPN+ community." I suggest writing "It is noteworthy that LGBTQIAPN+ students" to make the sentence more fluid and less verbose. Please check whether this applies to other parts of the manuscript.
- Page 8, line 11: Adjust "Regarding sexuality, according with the test." A "to" is missing before "the agreement."
- Page 9, line 7: Should it be *discomfort* instead of *dis comfort*? Please adjust.

Discussion

- Page 11, line 14: Adjust "Conceptually, barriers understood as any circumstance or factor that…" A "are" is missing.

- Page 12, line 1: Modify "for physical activity are that factors" to "for PA are factors that exert…"
- Page 12, lines 3–7: Some considerations are important here. The authors cite the study by Fricke and Gordon, which observed that adult sexual minority men and women practice more PA than heterosexual adults. What relationship can be made with the present study, which analyzed facilitators and barriers among high school adolescents in Pelotas/RS? Are these not distinct age groups? Would it not be more appropriate to compare with studies that used similar age groups, such as adolescents? There are international studies on this topic that may contribute to the discussion. Although from 2015, the manuscript *"Let's Get Physical: Sexual Orientation Disparities in Physical Activity, Sports Involvement, and Obesity Among a Population-Based Sample of Adolescents"* presents findings that diverge from those used in the discussion. I believe there are additional adolescent-focused studies the authors could engage with.

Another important consideration

- If comparisons are made with adults, caution is needed to avoid generalizations. As written, it seems that sexual minorities are more physically active than heterosexual individuals. There are studies with divergent findings, such as *"LGBTQ+ college students report more barriers, less benefits to physical activity and sport participation: A quantitative and qualitative study"* (Peterson, Frederick & Bopp, 2025), and *"Differences in physical activity and perceived benefits and barriers to physical activity between LGBTQ+ and non-LGBTQ+ college students"* (Frederick et al., 2021).
- I once again congratulate the authors on the choice of topic and thank you for the opportunity to review this work.

Final Decision

- Substantial revisions required

Reviewer B

Inês Amanda Streit
Federal University of Amazonas, Manaus, Amazonas, Brazil.

Dear Authors and Editor,

This article is very interesting and has strong potential for publication in RBAFS. In all sections, it presents a sensitive and careful perspective by the researchers. I noticed that Content Analysis was little explored in the manuscript; perhaps the authors could explain how the technique was used and emphasize that the main findings derive from this analysis.

I included in the file some spelling and agreement corrections and only one substantive suggestion (page 12, line 18) to enrich the discussion. I also added a reference from the Ministry of Health (2025).

I congratulate the authors on an excellent-quality article, which is extremely necessary to disseminate.

Introduction

- Page 4, line 18: Correct "…healthy and well" to "… healthy and well-being."
- Discussion
- Page 10, line 21: Replace *pointed out* with *pointed out* (plural). Review throughout the manuscript, as the verb must always agree with the subject.
- Page 11, line 14: Conceptually, barriers are understood as… Insert "are."
- Page 11, line 18: Correct to: *In a previous study, it was identified.*
- Page 12, line 9: Correct to: …*when it comes to.*
- Page 12, line 17: Replace *in* with *by.*
- Page 12, line 18: Specify more clearly that actions aimed at women are grounded in the principle of equity and that targeted policies are necessary to reduce gender inequalities.
- **Reference:**
- Brazil. Ministry of Health. *Promotion of physical activity in primary health care and its integration into SUS planning and management instruments* [electronic resource]. Brasília: Ministry of Health, 2025.

Final Decision

- Substantial revisions required