

# UNIVERSITY STUDENTS' PERSPECTIVES ON PHYSICAL ACTIVITY IN NATURAL ENVIRONMENTS

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## Abstract

Physical activity in natural environments, often referred to as “green exercise” is linked to numerous benefits (e.g., physical, psychological) including reduction of stress, improved mood, and enhanced motivation for regular exercise (“green”, in our case). University students, who face increased risks of physical inactivity because of academic demands and lifestyle changes, have unique perspectives on participating in physical activity in natural environments; therefore, it (study) aims at exploring university students' perspectives on physical activity in natural environments; in particular, motivations and barriers. Instrument of survey (4Qs) was carried out 2 months (Jan. 1 – Feb. 28, 2025), as means of exploring 1,121 university students' (45.94% of boys, 54.06% of girls) perspectives on physical activity in natural environments. 35.33% (396) of students participated in green exercise 1x/ week ( $p < 0.01$ ), in general, for 1-3 hours/ week (51.57%; 580) ( $p < 0.01$ ). 43.69% (225) of male students participated in green exercise because of improving health ( $p < 0.01$ ), and 56.60% (343) of female students participated in green exercise because of relaxation and stress relief ( $p < 0.01$ ). “Lack of time” to participate in green exercise reported 67.81% (760) of students ( $p < 0.01$ ). It (study) highlights the need for strategy (targeted) to promote green exercise in university students by addressing the time constraints and emphasizing gender-specific motivators.

**Key words:** barriers, natural environments, motivations, university students

## Introduction

Physical activity performed in natural environments, commonly referred to as “green exercise”, has gained increasing attention for its multifaceted benefits. Research consistently shows that participating in green exercise is associated with improved physical health, enhanced psychological well-being, stress reduction, and increased motivation to maintain an active lifestyle (Poli et al., 2024). The unique sensory experiences, emotional restoration, and opportunities for social interaction offered by natural environments are considered important facilitators of physical activity participation (Schmid et al., 2021).

University students represent a population at particular risk of physical inactivity due to academic stress, lifestyle transitions, and time constraints (García-Lorenzo et al., 2024). Although many students recognize the value of exercise, a large proportion do not meet recommended activity levels due to barriers such as lack of time, low motivation, and limited awareness or access to suitable facilities (Tsokani et al., 2023; Liu, Endozo, 2025). Conversely, motivations to engage in green exercise often stem from enjoyment, stress relief, and the opportunity to be outdoors (Othman et al., 2022).

Given these considerations, university students offer unique and valuable perspectives on participating in green exercise. Therefore, this study aims at exploring university students' perspectives on physical activity in natural environments; in particular, motivations and barriers. Understanding these perspectives is important for designing targeted health initiatives that promote lifelong physical activity habits during an important stage of development (Pellerine et al., 2022).

## Materials and Methods

Regarding the study aim (see *Introduction*), a total of 1,121 university students (100%) participated in the research. The sample included 45.94% of boys, 54.06% of girls (Tab. 1). The entire cohort of 1,121 participants (100%) represented a convenience sample, recruited through institutional emails (Adamčák et al., 2023). The recruitment process took place over a 2-month period, from Jan. 1 to Feb. 28, 2025, with data collection conducted twice weekly (Mondays and Wednesdays). This targeted sampling approach was designed to include only university students as the primary inclusion criterion. The investigation aimed to explore university students' perspectives on physical activity in natural environments; in particular, motivations and barriers. All procedures involving human participants were conducted in accordance with the ethical standards of the 1964 Declaration of Helsinki and its

subsequent revisions or equivalent ethical guidelines. Prior to participation, all students (1,121, 100%) provided written informed consent (Harriss et al., 2020).

Tab. 1: Demographic data (1,121, 100%)

Demographic data		
Boys	Age	22.40 ± 1.40 years
Girls		22.80 ± .80 years
Boys	Gender	515, 45.94%
Girls		606, 54.06%

Instrument of survey (4Qs) was carried out 2 months (Jan. 1 – Feb. 28, 2025), as means of exploring 1.121 university students' (45.94% of boys, 54.06% of girls) perspectives on physical activity in natural environments. The development of this concise instrument facilitated a structured approach to data collection, analysis, and comparison. The survey consisted of 2 primary sections: (i) demographic information, including age, and gender (see *Tab. 1*); and (ii) 4 closed-ended survey items, each offering 5 response options (see *Tabl. 2-3*). The survey was administered online via Microsoft Forms (Office 365), which ensured efficient data collection and accessibility. The 4-item format was chosen due to its cost-effectiveness, time efficiency, and ease of access (Azor et al., 2023).

All responses from the 1.121 participants were systematically tabulated within a structured database framework (see *Tables 1–3*). The response patterns, in particular, for each of the 4 survey items, were analyzed and compared using the Tap3 Software (Gamo, Banská Bystrica). Following data cleaning procedures, descriptive statistics, including arithmetic mean ( $\bar{x}$ ) and percentage (%), were applied to analyze the dataset.

To determine statistically significant differences between subgroups, in particular, between boys (515, 45.94%) and girls (606, 54.06%), inferential analysis was conducted using the Chi-square ( $\chi^2$ ) test. The significance level ( $\alpha$ ) was set at .01 and .05 in accordance with standard statistical practices (Turhan, 2020).

## Results

Among the 1.121 university students surveyed, 35.33% (396 students) reported participating in physical activity in natural environments, often referred to as green exercise, 1x/week. This frequency was statistically significant ( $P = 3.64 \text{ E-}06$ ;  $\chi^2_{(4)} = 30.64$ ) (*Tab. 2*), indicating a consistent participation pattern among a substantial portion of the student population. The distribution of participation across other frequency categories (e.g., 0x/week, 2x/week, etc.) also showed variation, but the 1x/week group represented the most prominent response.

When considering the duration of physical activity in natural environments, over half of the respondents (51.57%, 580 students) reported spending between 1-3 hours/week on such activity. This result was statistically significant ( $P = .0001$ ;  $\chi^2_{(4)} = 24.14$ ) (*Tab. 2*), suggesting that while many students participate in green exercise, the overall time investment remains relatively modest. Other time intervals, such as less than >1 hour/week or <6 hours/week, were less commonly reported, reinforcing the centrality of the 1-3 hour/week range.

Tab. 2: Number/ time of participation in green exercise (1,121, 100%)

Survey items – Question 1		
Number (n)	Boys	Girls
<4x/week	26.86%	14.69%
3x/week	11.26%	13.04%
2x/week	18.06%	26.90%
1x/week	35.64%	34.95%
0x/week	8.93%	9.74%
$P = 3.64 \text{ E-}06$ ; $\chi^2_{(4)} = 30.64^{**}$		
Survey items – Question 2		
Time (t)	Boys	Girls
<6 hours/week	7.77%	3.47%
4-6 hours/week	12.82%	7.59%
1-3 hours/week	49.51%	53.63%
>1 hour/week	20.00%	36.40%
0 hours/week	9.90%	8.91%
$P = .0001$ ; $\chi^2_{(4)} = 24.14^{**}$		

\*\* -  $p < .01$ .

The study revealed clear gender-based differences in motivations for participating in green exercise. Among male students, the most frequently cited reason for participating in physical activity in natural environments was to improve health, reported by 43.69% (225 male students). In contrast, 56.60% (343 female students) indicated that their primary motivation was relaxation and stress reduction. Both findings were statistically significant ( $P = 5.26 \text{ E-}14$ ;  $\chi^2_{(4)} = 68.26$ ) (Tab. 3), highlighting that while health and well-being were shared motivators, the emphasis varied by gender.

The most significant barrier to participating in green exercise among university students was lack of time. This reason was reported by 67.81% (760 students), with statistical significance ( $P = .009$ ;  $\chi^2_{(4)} = 13.42$ ) (Tab. 3). This barrier was consistent across gender lines and reflects the common pressures of academic schedules, lifestyle changes, and competing responsibilities that are characteristic of the university student experience. Other potential barriers were reported less frequently and did not show the same level of impact as time constraints.

Tab. 3: Motivations/ barriers of participation in green exercise (1.121, 100%)

Survey items – Question 3		
Motivations	Boys	Girls
Health improvement	43.69%	23.10%
Nature connectedness	7.96%	7.43%
<b>Social interaction</b>	3.50%	5.12%
<b>Stress reduction</b>	34.76%	56.60%
<b>No participation</b>	10.10%	7.76%
<b><math>P = 5.26 \text{ E-}14</math>; <math>\chi^2_{(4)} = 68.26^{**}</math></b>		
Survey items – Question 4		
Barriers	Boys	Girls
<b>Health problems</b>	1.36%	2.64%
<b>Alternative forms</b>	22.52%	14.69%
<b>No access</b>	8.16%	8.75%
<b>Lack of time</b>	64.66%	70.96%
<b>Lack of money</b>	3.30%	2.97%
<b><math>P = .009</math>; <math>\chi^2_{(4)} = 13.42^{**}</math></b>		

\*\* -  $p < .01$ .

## Discussion

This study highlights key trends in university students' perspectives on physical activity in natural environments. The most common participation frequency was 1x/week, with most students exercising for 1-3 hours/week. These findings align with research indicating that university students often engage in suboptimal physical activity levels due to academic pressures (Liu, Endozo, 2025).

Motivational differences between genders were notable. Male students were primarily motivated by health improvement, while female students prioritized stress reduction. This supports earlier studies suggesting that women more often associate green exercise with emotional relief and mental well-being (Othman et al., 2022), whereas men focus more on physical health benefits (García-Lorenzo et al., 2024).

The most frequently reported barrier was lack of time, consistent with earlier findings that academic workload and lifestyle changes reduce students' ability to maintain regular physical activity (Manasan et al., 2023). While other barriers like cost or access were less commonly reported, addressing time-related constraints appears critical.

These findings reinforce the importance of integrating green exercise opportunities into university settings. Even modest exposure to natural environments has been shown to improve mood and reduce anxiety (Tsokani et al., 2023), suggesting that institutional support could yield meaningful health benefits.

## Conclusion

This study reveals that a significant portion of university students engage in green exercise 1x/week for 1–3 hours, yet lack of time is a major barrier to more frequent participation. Gender-specific motivations, health improvement for males and stress relief for females, highlight the importance of tailored approaches in promoting physical activity. Addressing time constraints and incorporating flexible green exercise opportunities into university life could enhance participation. These findings support the need for targeted health strategies to foster active lifestyles and improve students' overall physical and mental well-being.

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## Souhrn

Studie se zaměřila na pohled univerzitních studentů na fyzickou aktivitu v přírodním prostředí („green exercise“) s cílem identifikovat motivace a bariéry účasti. Výsledky ukázaly, že většina studentů cvičí 1–3 hodiny týdně, přičemž muži jsou motivováni zlepšením zdraví a ženy úlevou od stresu. Hlavní překážkou účasti byl nedostatek času. Autoři zdůrazňují nutnost vytváření cílených strategií, které by zohlednily genderové rozdíly a časové bariéry pro podporu zdravého životního stylu studentů.

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