

COMPARATIVE ANALYSIS OF PHYSICAL ACTIVITY AMONG STUDENT YOUTH IN UKRAINE AND GERMANY

Gennadiy Zelinskyy

<https://orcid.org/0000-0001-6338-2382>

Universität Duisburg-Essen, Universitätsmedizin Essen, Essen, Germany

corresponding author: G. Zelinskyy – Gennadiy.zelinskyy@uk-essen.de

DOI: [https://doi.org/10.32626/2309-8082.2026-31\(1\).12-18](https://doi.org/10.32626/2309-8082.2026-31(1).12-18)

The relevance of the study is due to the increasing role of physical activity and psycho-emotional well-being in shaping a healthy lifestyle among student youth. Students in Ukraine and European countries, particularly Germany, are exposed to significant academic workload, insufficient levels of physical activity, and various stress-inducing factors, which negatively affect their quality of life and subjective well-being. *The aim of the study* is to conduct a comparative analysis of the level of physical activity among student youth in Ukraine and Germany, as well as to identify the factors influencing its formation. *Methods.* To assess physical activity, a questionnaire survey was conducted among first-year female students at Lviv Polytechnic National University and Igor Sikorsky Kyiv Polytechnic Institute. The total sample included 300 first-year female students, aged 17.6 ± 0.5 . Data processing was carried out using methods of mathematical statistics, including the calculation of the number and percentage distribution of respondents' answers for each questionnaire item, which made it possible to determine the distribution of responses and identify the proportion of participants selecting specific options. Frequency and percentage analysis were applied to generalize the results. A comparative analysis of indicators among student youth in Ukraine and Germany was conducted based on secondary sources containing data on levels of physical activity and regular engagement in physical exercise. *Results.* It was found that the majority of Ukrainian female students demonstrate a high level of awareness regarding the importance of physical activity; however, its actual level and regularity remain insufficient. The comparative analysis showed that student youth in Germany exhibit higher levels of physical activity and greater diversity of its forms, particularly in extracurricular and organized activities. It was determined that the main factors limiting physical activity include lack of time, academic workload, fatigue, insufficient motivation, and infrastructural constraints. *Conclusions.* The obtained results indicate the need to increase the level of physical activity among student youth through the implementation of comprehensive programs aimed at enhancing motivation, improving access to sports infrastructure, and integrating physical activity into everyday lifestyle.

Keywords: physical activity, features, student youth Ukraine, student youth Germany, psycho-emotional state, stress, motivation, comparative analysis.

Introduction

In recent years, the living conditions and the level of physical activity among higher education students in Ukraine have undergone significant changes [1]. The introduction of martial law and its socio-economic and psychological consequences have had a negative impact on young people, which is reflected in their quality of life and health status. Scientific studies indicate that war has a substantial effect on the cognitive and emotional state

Gennadiy Zelinskyy. Порівняльний аналіз фізичної активності студентської молоді в Україні та Німеччини

Анотація. Актуальність дослідження зумовлена зростанням ролі рухової активності та психоемоційного благополуччя у формуванні здорового способу життя студентської молоді. Студенти України та країн Європи, зокрема Німеччини, зазнають впливу значного навчального навантаження, недостатнього рівня рухової активності та дії стресогенних чинників, що негативно позначається на якості життя та суб'єктивному благополуччі. *Мета дослідження* здійснити порівняльний аналіз рівня рухової активності студентської молоді України та Німеччини, а також визначити чинники, що впливають на їх формування. *Методи дослідження.* Для оцінки рухової активності проведено анкетне опитування здобувачок першого курсу на базі Львівського Політехнічного Університету та Київського політехнічного університету імені Ігоря Сікорського загальною кількістю 300 здобувачів (дівчат) вищої освіти першого року навчання, вік усіх – у межах 17.6 ± 0.5 років. Опрацювання даних здійснено з використанням методів математичної статистики, а саме зроблено розрахунок кількості й відсоткового співвідношення відповідей респондентів за кожним питанням анкети. Це дало змогу з'ясувати розподіл відповідей і встановити частку осіб, які обрали певні варіанти. Для узагальнення результатів застосовано частотний і відсотковий аналіз. Порівняльний аналіз показників студентської молоді України та Німеччини проведено на основі вторинних джерел, що містять дані щодо рівня рухової активності, регулярності занять фізичною культурою. *Результати.* Встановлено, що більшість українських студентів характеризуються високим рівнем обізнаності щодо значення рухової активності, проте її фактичний рівень і регулярність залишаються недостатніми. Порівняльний аналіз показав, що студентська молодь Німеччини демонструє вищий рівень рухової активності та більшу різноманітність її форм, зокрема позаакадемічних і організованих. Визначено, що основними чинниками, які обмежують рухову активність, є дефіцит часу, навчальне навантаження, втома, недостатня мотивація та інфраструктурні обмеження. *Висновки.* Отримані результати свідчать про необхідність підвищення рівня рухової активності студентської молоді шляхом упровадження комплексних програм, спрямованих на розвиток мотивації, покращення доступу до спортивної інфраструктури та інтеграцію фізичної активності у повсякденний спосіб життя.

Ключові слова: рухова активність, особливості, студентська молодь України, студентська молодь Німеччини, психоемоційний стан, стрес, мотивація, порівняльний аналіз.

of student youth, manifesting in chronic stress, increased fatigue, anxiety, and uncertainty about the future [2].

At the same time, there is a tendency toward a decrease in the level of physical activity among students, which is an important factor contributing to the deterioration of physical health and overall quality of life [1; 12]. Insufficient physical activity, combined with psycho-emotional strain, exacerbates negative effects on the body and reduces the adaptive capacity of young people [6; 14; 18].

In this regard, there is an increasing need to improve and implement an effective system of physical education in higher education institutions aimed at enhancing the level of physical activity, preserving health, and improving the quality of life of students [5; 21].

The aim of the study is to conduct a comparative analysis of the level of physical activity among student youth in Ukraine and Germany, as well as to identify the factors influencing its formation.

Materials and Methods

To comprehensively assess the level of physical activity among higher education students, a questionnaire method was employed using both standardized and author-developed instruments. The survey was conducted in accordance with ethical standards, with participation being voluntary and anonymous.

The methodological framework of the study encompassed both theoretical and empirical levels. At the theoretical level, general scientific methods were applied, including analysis, synthesis, and systematization of scientific sources. The literature search was conducted using international scientometric databases such as Scopus, Web of Science, Google Scholar, and SPORTDiscus, employing relevant keywords. The selection process considered the relevance of publications, their scientific significance, and their alignment with the research topic.

As a result of the critical analysis, 22 of the most relevant sources were selected from the initially compiled pool. At the empirical level, one of the sociological methods-written questionnaire survey—was used, employing an author-designed questionnaire to identify the characteristics of physical activity. For data processing, methods of mathematical statistics were applied, including

the calculation of the number and percentage distribution of respondents' answers for each questionnaire item. This made it possible to determine the distribution of responses and identify the proportion of participants selecting specific options. Frequency and percentage analysis were used to generalize the results. The study was conducted in two stages. At the first stage, data were collected and processed from the questionnaire survey regarding the level of physical activity among student youth in Ukraine. At the second stage, a comparative analysis of physical activity indicators among student youth in Ukraine and Germany was carried out based on the obtained results and data from secondary sources, followed by the generalization of the findings.

Organization of the Study. The study was conducted at Lviv Polytechnic National University and Igor Sikorsky Kyiv Polytechnic Institute with a total sample of 300 first-year female higher education students aged 17.6 ± 0.5 years. The survey was anonymous and conducted online using Google Forms. The questionnaire included items with predefined response options (closed and mixed types). The survey was carried out in accordance with the specified methodological guidelines [4; 8], taking into account the characteristics of the respondent group. The questionnaire was used to identify the features of physical activity, motivational factors, and barriers to engaging in physical activity, as well as to assess the subjective state of health.

The obtained data made it possible to assess the overall level of physical activity among students and to identify the main trends in its decline.

The questionnaire consisted of 8 questions with predefined answer options. The frequency of respondents selecting identical response options was analyzed (Table 1).

Table 1 – Analysis of the Characteristics of Students' Physical Activity

No	Question content	Answer options
1	Do you know what "physical activity" is?	-Yes, I know it well -Partially -I have heard of it, but do not understand it -No, I do not know
2	How important is physical activity to you?	-Very important -Rather important -Neutral / not very important -Not important
3	Why do you think physical activity is important? (You may select multiple options)	-For health -To improve mood -To maintain physical fitness -To reduce stress -For disease prevention -I do not consider it important
4	How much time per week do you spend on physical activity?	-Less than 30 minutes -30–90 minutes -91 minutes – 3 hours -3–5 hours -More than 5 hours

5	Which forms of physical activity do you engage in in your daily life? (You may select multiple options)	<ul style="list-style-type: none"> -Organized sports activities (sports clubs, teams) -Physical activity within educational institutions (physical education classes, extracurricular clubs) -Independent physical exercise (at home, in a gym, etc.) -Active leisure (walking, cycling, recreational activities) -Everyday physical activity (walking, climbing stairs, household chores) -Online/fitness programs (video workouts, mobile applications) -Other (please specify):
6	How often do you engage in physical activity?	<ul style="list-style-type: none"> -Daily -3–4 times a week -1–2 times a week -Less than once a week -I do not engage in physical activity
7	What prevents you from engaging in physical activity more often? (You may select multiple options)	<ul style="list-style-type: none"> -Lack of time -Lack of motivation -Lack of facilities for physical activity -Fatigue -Dislike of sports -Health problems -Other: _____
8	How would you rate your health status?	<ul style="list-style-type: none"> -Excellent -Good -Satisfactory -Poor -Very poor

Results

The results of the survey conducted among Ukrainian female students showed that the vast majority of respondents are familiar with the concept of physical activity: 97 % reported that they have a good understanding of its meaning, while only 3 % indicated partial familiarity with the term. The analysis of the survey results also demonstrated a high level of perceived importance of physical activity among the respondents.

In particular, in response to the question “How important is physical activity to you?”, 76 % of respondents indicated that it is very important, 20 % considered it rather important, while 4 % rated it as neutral or not very important.

In the countries of the European Union, particularly Germany, the issue of the importance of physical activity has been examined within the framework of the Eurobarometer survey conducted by the European Commission. The sample included 26.682 respondents aged 15-24 years, including adolescents aged 15-17. According to the study results, 82 % of respondents consider physical activity to be important [11]. This makes it possible to compare the obtained data on Ukrainian 17-year-old female students (76 % consider physical activity to be very important) with European indicators, which also demonstrate a high level of awareness of the importance of physical activity among young people.

With regard to the level of awareness and understanding of the term “physical activity” among 17-year-old girls in Germany, relevant studies have primarily been conducted in the context of analyzing the frequency and duration of physical activity [9; 12].

In international studies, particularly within the framework of the Health Behaviour in School-aged Children (HBSC) project conducted under the auspices of the World Health Organization, behavioral and value-related aspects of physical activity among adolescents in 44 European countries have been analyzed. The obtained results indicate a high level of awareness of its importance among adolescent girls, which is consistent with the findings of our study [7; 22].

The next question aimed to identify the motivational factors that encourage engagement in physical activity. The respondents were asked: “Why do you think physical activity is important?” with the possibility of selecting multiple response options. The analysis of the results showed that 100 % of respondents associate physical activity with maintaining health, 50 % with maintaining physical fitness, 32 % with stress reduction, 12 % with mood improvement, and 6 % with disease prevention.

A comparison with data from international studies, particularly those conducted by the World Health Organization and within the Health Behaviour in School-aged Children (HBSC) project, indicates a similar structure of motivation among European youth. In particular, these studies identify health as the leading motive (over 90 %), maintaining physical fitness at approximately 80 %, and improving psycho-emotional well-being at around 60 % [5; 7; 21-22].

At the same time, it should be noted that despite the overall similarity in the motivational structure, Ukrainian girls are less likely to associate physical activity with mental health, which may indicate an insufficient

level of awareness of its impact on psycho-emotional well-being.

To determine the level of physical activity, respondents were asked: "How much time per week do you spend on physical activity?" The survey results showed that 55 % of respondents engage in physical activity for 30-90 minutes per week; 47 % for 91 minutes to 3 hours; 20 % for 3-5 hours; 18 % for more than 5 hours; while 18 % spend less than 30 minutes per week on physical activity.

The obtained data indicate an overall insufficient level of physical activity among Ukrainian female students, as only a relatively small proportion of respondents (18 %) reach a level exceeding 3-5 hours per week, while an equal proportion (18 %) demonstrate extremely low levels—less than 30 minutes per week.

A comparison with international data, particularly from the Robert Koch Institute, indicates that only 7.5 % of girls aged 14-17 in Germany engage in physical activity for at least 60 minutes daily, in accordance with the recommendations of the World Health Organization. At the same time, 22 % demonstrate low levels of activity (less than 2 days per week), while the majority (approximately 70 %) are characterized by a moderate level of physical activity (2-5 days per week) [5; 9; 20].

The comparative analysis indicates that Ukrainian students generally demonstrate a lower level of physical activity: the majority engage in less than 3 hours per week, with a considerable proportion spending less than 30 minutes. In Germany, despite the low proportion of individuals who meet the recommended level of daily physical activity, the majority of adolescents exhibit at least a moderate level of physical activity.

Thus, it can be concluded that the average level of physical activity among 17-year-old girls in Germany is higher compared to their Ukrainian counterparts; however, in both cases, insufficient adherence to international recommendations for daily physical activity is observed.

To identify students' preferences regarding forms of physical activity, the following question was asked: "Which forms of physical activity do you engage in in your daily life?", with the possibility of selecting multiple response options.

The analysis of the obtained results showed that the most common form of physical activity among respondents is participation in physical activity within educational institutions (physical education classes), reported by 87 %. A significant proportion of respondents also indicated active leisure activities (walking, cycling, recreational activities) – 60 %. Less common were independent physical exercises (at home, in a gym, etc.) – 38 %, and everyday physical activity (walking, climbing stairs, household chores) – 35 %. At the same time, only 19 % of respondents reported participation in organized sports activities (sports clubs,

teams), while the least popular form was the use of online or fitness programs – 6 %.

The obtained results indicate the predominance of institutionally organized forms of physical activity associated with the educational process, as well as the significant role of everyday and leisure-related activities. At the same time, the level of engagement in organized sports outside educational institutions and the use of digital forms of physical activity remains relatively low.

According to international studies [7; 11; 22], the structure of physical activity forms among adolescent girls in European countries is characterized by a combination of organized and unorganized types of activity.

In particular, the most common forms include physical activity within educational institutions (physical education classes), participation in sports clubs and organized activities, as well as active leisure (walking, cycling). The synthesis of available data makes it possible to present an approximate distribution of physical activity forms among adolescent girls in Europe (aged 15-17): physical activity within educational institutions – 90 %; organized sports activities (clubs, teams) – 60 %; active leisure (walking, cycling) – 80 %; independent physical exercise – 50 %; and everyday physical activity – 40 % [7; 11; 21].

To determine the frequency and pattern of physical activity, respondents were asked: "How often do you engage in physical activity?" The survey results showed that the majority of respondents (52 %) engage in physical activity 1-2 times per week, 30 % – 3-4 times per week, and only 7 % reported daily activity, while 8 % indicated that they engage in physical activity less than once a week. At the same time, 3 % of respondents stated that they do not engage in physical activity at all. The obtained data indicate that the regularity of physical activity among the majority of students is insufficient and does not fully comply with current recommendations for maintaining an optimal level of physical activity, which may negatively affect health status and quality of life.

Compared to European data [7; 12; 21], only about 15 % of adolescent girls achieve the recommended level of daily physical activity, while approximately half are physically active at least three times per week. In Germany, these indicators are lower: only 10.8 % of girls meet the recommendations, and about 28.2 % engage in physical activity at least four times per week. At the same time, a significant proportion of adolescents demonstrate insufficient levels of physical activity, engaging in it less than 3-4 times per week or only occasionally [9; 12; 20].

To identify the factors limiting the regularity of engagement in physical activity, respondents were asked: "What prevents you from engaging in physical activity more often?", with the option to select multiple responses. The findings indicate that time constraints represent

the primary barrier for the majority of respondents, reported by 78 % of participants. A substantial proportion of respondents also identified fatigue (46 %) and lack of motivation (29 %) as significant limiting factors, while 25 % pointed to inadequate conditions or a lack of properly equipped facilities for engaging in physical activity.

According to the results of international studies, the most common barriers to engaging in physical activity among adolescents, particularly in Europe, include lack of time, lack of motivation, and fatigue [10; 16-17]. It should be noted that factors related to limited opportunities for participation, as well as insufficient levels of social support, are reported less frequently [3; 9]. For adolescent girls, additional barriers are often psychological in nature, including low self-confidence and the influence of social pressure [15]. To assess the subjective health status of the respondents, they were asked: "How would you rate your health status?" with the following response options: excellent, good, satisfactory, poor, and very poor. The obtained results indicate that 17.7 % of respondents rated their health as excellent or good. The largest proportion of respondents (47 %) reported a satisfactory health status. At the same time, 35 % of respondents assessed their condition as poor or very poor.

In the Health Behaviour in School-aged Children study (Germany), it was found that approximately 80 % of adolescent girls rate their health as good or very good, about 15 % as satisfactory, and only around 5 % as poor or very poor [7; 22].

Discussion

The obtained survey results are consistent with findings from international studies, which indicate a widespread phenomenon among adolescents of a mismatch between a high level of awareness of the benefits of physical activity and its insufficient actual implementation [7]. In particular, the results of the Health Behaviour in School-aged Children (2021/2022) study show that only about 15 % of girls achieve the recommended level of daily physical activity, while the majority demonstrate insufficient levels of physical activity [12; 21].

Similar conclusions are reflected in reports by the World Health Organization, where physical inactivity is identified as a global public health problem among young people [21]. The obtained results are also consistent with data from studies conducted by the European Commission (Eurobarometer), which indicate that the majority of adolescents are aware of the importance of physical activity; however, they do not adhere to its regular practice [11]. This allows us to conclude that the main issue lies not in insufficient awareness, but in the difficulty of translating knowledge into behavior.

A comparison with the results of the Robert Koch Institute (KiGGS study) indicates that even in countries with well-developed healthcare systems, only about 22 %

of girls meet the recommendations for daily physical activity, with activity levels tending to decline with age [9; 12; 20]. This confirms the universal nature of the problem, which is not limited to specific countries.

It was found that the leading factors contributing to insufficient levels of physical activity include time constraints, substantial academic workload, fatigue, and reduced motivation, which is consistent with both the obtained results and data from international studies [10; 16-17]. The higher level of low motivation observed among Ukrainian female students may indicate more pronounced motivational barriers or the influence of additional socio-educational factors.

Regarding the forms of physical activity, it was found that their structure among Ukrainian female students is less diverse and more dependent on the educational environment compared to their peers in Germany and other European countries [7; 11]. A key difference is the significantly lower level of participation in organized sports activities outside educational institutions. One possible explanation for this is the more pronounced influence of infrastructural factors, identified in the study results (25 % versus 15 %), which indicates limited access to appropriate conditions for physical activity, including properly equipped sports facilities and accessible spaces [3; 19].

In contrast, in European countries, the significance of this factor is lower, which may be explained by a higher level of development of sports infrastructure and greater accessibility of organized forms of physical activity. With regard to differences in the subjective assessment of adolescents' health status, Ukrainian female students demonstrate a significantly lower proportion of those who rate their health as excellent or good (17.7 % compared to approximately 80 % among German adolescents), while the proportion of individuals with a negative self-assessment of health is substantially higher (35 % compared to approximately 5 %) [7; 22]. Such differences may be explained by a complex of socio-economic, psycho-emotional, and behavioral factors.

Contemporary scientific studies indicate that adolescents' subjective assessment of health is closely associated with their level of physical activity, psycho-emotional state, stress levels, and overall living conditions [6; 13-14; 20]. In particular, the lower level of physical activity and the higher level of fatigue identified in the study may negatively affect the perception of one's own health.

In addition, socio-economic conditions and access to resources—including quality sports infrastructure, healthcare services, and opportunities for active leisure – play an important role [3; 19]. In European Union countries, particularly Germany, a higher level of infrastructure development and support for a healthy lifestyle contributes to the formation of a more positive self-assessment of health among girls.

Conclusions

1. The results of the conducted study indicate that Ukrainian female students demonstrate a high level of awareness regarding the nature and importance of physical activity (97 %) and recognize its significance for health (76 % – very important).

2. The level of physical activity among student youth in Ukraine is lower compared to Germany, while in both countries there is a discrepancy with international recommendations.

3. The structure of physical activity among Ukrainian female students is less diverse and more dependent on the educational environment, whereas in Germany, extracurricular and organized forms of activity prevail.

4. The main influencing factors include lack of time, academic workload, fatigue, insufficient motivation, and infrastructural constraints, with the latter being more pronounced in Ukraine.

5. Thus, increasing the level of physical activity among student youth requires a comprehensive approach aimed

at developing intrinsic motivation, expanding access to sports infrastructure, and integrating physical activity into everyday life.

Conflict of Interest. The author declare no conflict of interest.

Data Availability Statement. Data supporting the findings of this study are available upon request from the corresponding author. Data are not publicly available due to confidentiality and ethical constraints.

Ethical Disclosure Statement. The study was conducted in accordance with the World Medical Association (WMA-2013) principles of bioethics as outlined in the Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects.

AI Transparency Statement. The author declares that no generative AI or AI-enabled technologies were used in the writing, editing, or preparation of this manuscript.

Funding Statement. This study received no external funding. The author received no financial support for the research, writing, or publication of this article.

References

1. Banakh, V., Iedyak G., Klyus, O., Galamanzhuk, L., Balats'ka, L., Rymar, S., Tsymbalisty, V. YA. (2024), "Stan stresostiykosti ta vyjavu morfofunktsional'nykh pokaznykiv divchat protyjahom pershoho roku navchannya u zakladi vyshchoi osvity" [The state of stress resistance and the manifestation of morphofunctional indicators of girls during the first year of study at a higher education institution]. *Bulletin of Kamyanskyi Ivan Ogiienko National University. Physical Education, Sports and Human Health*, 29(2), pp. 76–82. [in Ukraine].
2. Klyus, O., Balats'ka, L. (2026), "Analiz osoblyvostey rukhovoyi aktyvnosti ta yakosti zhyttya zdobuvachiv v umovakh voyennoho stanu" [Analysis of the features of motor activity and quality of life of applicants under martial law]. *Bulletin of Kamyanskyi Ivan Ogiienko National University. Physical Education, Sports and Human Health*, 30(4), pp. 240–251. [https://doi.org/10.32626/2309-8082.2025-30\(4\).240-251](https://doi.org/10.32626/2309-8082.2025-30(4).240-251) [in Ukraine].
3. Alliot, O., Ryan, M., Fairbrother, H., vanSluijs, E.(2022). Do adolescents' experiences of the barriers to and facilitators of physical activity differ by socioeconomic position? A systematic review of qualitative evidence. *Obesity Reviews*, 23(3), e13374. doi:10.1111/obr.13374
4. Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press. <https://ktpu.kpi.ua/wp-content/uploads/2014/02/social-research-methods-alan-bryman.pdf>
5. Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J.-P., Chastin, S., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., & Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*, 54(24), 1451–1462. <https://doi.org/10.1136/bjsports-2020-102955>
6. Calzada-Rodríguez, J. I., Denche-Zamorano, Á. M., Pérez-Gómez, J., Mendoza-Muñoz, M., Carlos-Vivas, J., Barrios-Fernandez, S., & Adsuar, J. C. (2021). Health-Related Quality of Life and Frequency of Physical Activity in Spanish Students Aged 8–14. *International J of Environmental Research and Public Health*, 18(17), 9418. <https://doi.org/10.3390/ijerph18179418>

Джерела та література

1. Банах В., Єдинак Г., Ключ О., Галаманжук Л., Балацька Л., Римар С., Цимбалістий В. Стан стресостійкості та вияву морфофункціональних показників дівчат протягом першого року навчання у закладі вищої освіти. *Вісник Кам'янець-Подільського національного університету імені Івана Огієнка. Фізичне виховання, спорт і здоров'я людини*. 2024. Вип. 29(2). С. 76–82. [https://doi.org/10.32626/2309-8082.2024-29\(2\).76-82](https://doi.org/10.32626/2309-8082.2024-29(2).76-82)
2. Ключ О., Балацька Л. Аналіз особливостей рухової активності та якості життя здобувачів в умовах воєнного стану. *Вісник Кам'янець-Подільського національного університету імені Івана Огієнка. Фізичне виховання, спорт і здоров'я людини*. 2025. Вип. 30(4). С. 240–251. [https://doi.org/10.32626/2309-8082.2025-30\(4\).240-251](https://doi.org/10.32626/2309-8082.2025-30(4).240-251).
3. Alliot, O., Ryan, M., Fairbrother, H., vanSluijs, E.(2022). Do adolescents' experiences of the barriers to and facilitators of physical activity differ by socioeconomic position? A systematic review of qualitative evidence. *Obesity Reviews*, 23(3), e13374. doi:10.1111/obr.13374
4. Bryman, A. (2016). *Social research methods*. 5th ed. Oxford University Press. <https://ktpu.kpi.ua/wp-content/uploads/2014/02/social-research-methods-alan-bryman.pdf>
5. Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J.-P., Chastin, S., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., & Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*, 54(24), 1451–1462. <https://doi.org/10.1136/bjsports-2020-102955>
6. Calzada-Rodríguez, J. I., Denche-Zamorano, Á. M., Pérez-Gómez, J., Mendoza-Muñoz, M., Carlos-Vivas, J., Barrios-Fernandez, S., & Adsuar, J. C. (2021). Health-Related Quality of Life and Frequency of Physical Activity in Spanish Students Aged 8–14. *International J of Environmental Research and Public Health*, 18(17), 9418. <https://doi.org/10.3390/ijerph18179418>

7. Cosma, A., Corby, K., Ravens-Sieberer, U., de Matos, M. G., & the HBSC Study Group (2024). *A focus on adolescent physical activity, eating behaviours, weight status and body image in Europe, central Asia and Canada*. World Health Organization Regional Office for Europe. <https://www.hbsc.org>
8. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
9. Demetriou, Y., Beck, F., Sturm, D. et al. (2024). Germany's 2022 Report Card on Physical Activity for Children and Adolescents. *Ger J Exerc Sport Res*, 54, 260–275. <https://doi.org/10.1007/s12662-024-00946-6>
10. Duffey, K., Barbosa, A., Whiting, S., Mendes, R., Yordi Aguirre, I., Tcymbal, A., Abu-Omar, K., Gelius, P. and Breda, J. (2021). Barriers and Facilitators of Physical Activity Participation in Adolescent Girls: A Systematic Review of Systematic Reviews. *Front. Public Health*, 9, 743935. doi: 10.3389/fpubh.2021.743935
11. European Commission (2022). *Special Eurobarometer 525: Sport and physical activity*. <https://europa.eu/eurobarometer/surveys/detail/2668>
12. Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2020). Global Trends in Insufficient Physical Activity among Adolescents: A Pooled Analysis of 298 Population-Based Surveys with 1.6 Million Participants. *The Lancet Child & Adolescent Health*, 4, 23-35. [https://doi.org/10.1016/S2352-4642\(19\)30323-2](https://doi.org/10.1016/S2352-4642(19)30323-2)
13. Hopkins, C. S., Hopkins, S. R., & Glass, K. (2022). Factors associated with sport participation among adolescent females. *International J of Environmental Research and Public Health*, 19, 3353. <https://doi.org/10.3390/ijerph19063353>
14. Kantomaa, M. T., Tammelin, T. H., Ebeling, H. E., Stamatakis, E., & Taanila, A. M. (2015). High levels of physical activity and cardiorespiratory fitness are associated with good self-rated health in adolescents. *J of Physical Activity and Health*, 12(2), 266–272. <https://doi.org/10.1123/jpah.2013-0062>
15. Laird, Y., Fawkner, S., Kelly, P., McNamee, L., & Niven, A. (2016). The role of social support on physical activity behaviour in adolescent girls. *International J of Behavioral Nutrition and Physical Activity*, 13, 79. <https://doi.org/10.1186/s12966-016-0405-7>
16. Martins, J., Marques, A., Sarmento, H., & Carreiro da Costa, F. (2015). Adolescents' perspectives on barriers and facilitators of physical activity. *Health Education Research*, 30(5), 742–755. <https://doi.org/10.1093/her/cyv042>
17. Martins, J., Costa, J., Sarmento, H., Marques, A., Farias, C., Onofre, M., & Valeiro, M. G. (2021). Adolescents' perspectives on barriers and facilitators of physical activity. *International J of Environmental Research and Public Health*, 18(9), 4954. <https://doi.org/10.3390/ijerph18094954>
18. McMahon, E. M., Corcoran, P., O'Regan, G., et al. (2017). Physical activity and mental health in European adolescents. *European Child & Adolescent Psychiatry*, 26, 111–122. <https://doi.org/10.1007/s00787-016-0875-9>.
19. Nordbø, ECA, Nordh, H, Raanaas RK, Aamodt, G. (2020). Promoting activity participation and well-being among children and adolescents: a systematic review of neighborhood built-environment determinants. *JBI Evid Synth*, 18(3), 370-458. doi: 10.11124/JBISRIR-D-19-00051. PMID: 32197008.
20. Robert Koch Institute (2018). *Study on the health of children and adolescents in Germany (KiGGS Wave 2)*. <https://www.rki.de>
21. World Health Organization (2022). *Global status report on physical activity 2022*. <https://www.who.int/publications/i/item/9789240059153>
22. World Health Organization (2024). *Health Behaviour in School-aged Children (HBSC) study*. [https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-\(hbsc\)-study](https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-(hbsc)-study)
7. Cosma, A., Corby, K., Ravens-Sieberer, U., de Matos, M. G., & the HBSC Study Group (2024). *A focus on adolescent physical activity, eating behaviours, weight status and body image in Europe, central Asia and Canada*. World Health Organization Regional Office for Europe. <https://www.hbsc.org>
8. Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
9. Demetriou, Y., Beck, F., Sturm, D. et al. (2024). Germany's 2022 Report Card on Physical Activity for Children and Adolescents. *Ger J Exerc Sport Res*, 54, 260–275. <https://doi.org/10.1007/s12662-024-00946-6>
10. Duffey, K., Barbosa, A., Whiting, S., Mendes, R., Yordi Aguirre, I., Tcymbal, A., Abu-Omar, K., Gelius, P. and Breda, J. (2021). Barriers and Facilitators of Physical Activity Participation in Adolescent Girls: A Systematic Review of Systematic Reviews. *Front. Public Health*, 9, 743935. doi: 10.3389/fpubh.2021.743935
11. European Commission (2022). *Special Eurobarometer 525: Sport and physical activity*. <https://europa.eu/eurobarometer/surveys/detail/2668>
12. Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2020). Global Trends in Insufficient Physical Activity among Adolescents: A Pooled Analysis of 298 Population-Based Surveys with 1.6 Million Participants. *The Lancet Child & Adolescent Health*, 4, 23-35. [https://doi.org/10.1016/S2352-4642\(19\)30323-2](https://doi.org/10.1016/S2352-4642(19)30323-2)
13. Hopkins, C. S., Hopkins, S. R., & Glass, K. (2022). Factors associated with sport participation among adolescent females. *International J of Environmental Research and Public Health*, 19, 3353. <https://doi.org/10.3390/ijerph19063353>
14. Kantomaa, M. T., Tammelin, T. H., Ebeling, H. E., Stamatakis, E., & Taanila, A. M. (2015). High levels of physical activity and cardiorespiratory fitness are associated with good self-rated health in adolescents. *J of Physical Activity and Health*, 12(2), 266–272. <https://doi.org/10.1123/jpah.2013-0062>
15. Laird, Y., Fawkner, S., Kelly, P., McNamee, L., & Niven, A. (2016). The role of social support on physical activity behaviour in adolescent girls. *International J of Behavioral Nutrition and Physical Activity*, 13, 79. <https://doi.org/10.1186/s12966-016-0405-7>
16. Martins, J., Marques, A., Sarmento, H., & Carreiro da Costa, F. (2015). Adolescents' perspectives on barriers and facilitators of physical activity. *Health Education Research*, 30(5), 742–755. <https://doi.org/10.1093/her/cyv042>
17. Martins, J., Costa, J., Sarmento, H., Marques, A., Farias, C., Onofre, M., & Valeiro, M. G. (2021). Adolescents' perspectives on barriers and facilitators of physical activity. *International J of Environmental Research and Public Health*, 18(9), 4954. <https://doi.org/10.3390/ijerph18094954>
18. McMahon, E. M., Corcoran, P., O'Regan, G., et al. (2017). Physical activity and mental health in European adolescents. *European Child & Adolescent Psychiatry*, 26, 111–122. <https://doi.org/10.1007/s00787-016-0875-9>.
19. Nordbø, ECA, Nordh, H, Raanaas RK, Aamodt, G. (2020). Promoting activity participation and well-being among children and adolescents: a systematic review of neighborhood built-environment determinants. *JBI Evid Synth*, 18(3), 370-458. doi: 10.11124/JBISRIR-D-19-00051. PMID: 32197008.
20. Robert Koch Institute (2018). *Study on the health of children and adolescents in Germany (KiGGS Wave 2)*. <https://www.rki.de>
21. World Health Organization (2022). *Global status report on physical activity 2022*. <https://www.who.int/publications/i/item/9789240059153>
22. World Health Organization (2024). *Health Behaviour in School-aged Children (HBSC) study*. [https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-\(hbsc\)-study](https://www.who.int/europe/initiatives/health-behaviour-in-school-aged-children-(hbsc)-study)

Date of first submission of article for publication: 25.03.2026
Date of acceptance of the article for publication after review: 17.04.2026
Publication date: 25.04.2026