



The Association Between Physical Activity and Loneliness Among International Students in Java

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Abstract

Background. Perceived loneliness and social isolation are significant challenges for international students adapting to different cultural and academic environments. Physical activity has been suggested as a key factor that may be associated with mental health, social interactions, and emotional well-being.

Objectives. The study aimed to examine the association between physical activity and loneliness among international students residing in Java, Indonesia.

Materials and Methods. A cross-sectional survey was conducted with 164 international students from universities in Java, selected using random sampling. Physical activity levels were assessed using the International Physical Activity Questionnaire (IPAQ), and loneliness was measured via the Revised UCLA Loneliness Scale. Descriptive statistics and multiple linear regression analyses were performed using SPSS v.2025.

Results. The majority of participants were highly educated, and 56.1% reported high physical activity. Loneliness was prevalent, with 68.9% of students experiencing moderate to high levels. Multiple regression analysis indicated a significant negative association between physical activity and loneliness ($\beta = -0.42$, $p = 0.001$), explaining 23% of the variance.

Conclusions. These findings suggest that higher levels of physical activity are associated with lower loneliness among international students, highlighting the potential role of physical activity in supporting social inclusion and well-being. Universities may consider promoting structured physical activity opportunities to facilitate student engagement and adjustment.

Keywords: international students, physical activity, loneliness.

Introduction

Educational globalisation studies primarily focus on the growing trend of international student mobility, with millions of students seeking higher education outside their home countries each year. According to Project Atlas, about 5.3 million students study abroad worldwide. In the United States alone, there are more than one million international students. International students are increasingly choosing Southeast Asian countries such as Indonesia as their study destinations due to improvements in their educational infrastructure (Suryadi et al., 2023). Java has become a popular place for students from both Indonesia and other

countries to study, given its higher concentration of schools and relatively better infrastructure compared to other parts of Indonesia. The Indonesian Central Bureau of Statistics said that in the 2021/2022 school year, there were 2,181,900 students on the island of Java, which is home to 5,273 high schools. This distribution contributes to the role as an educational centre (Lenge & Huwae, 2023).

Even though there are many benefits to being an international student, there are also many health problems associated with it, such as loneliness, difficulty adjusting to a new culture, and homesickness (Suryadi et al., 2023). Researchers have found that loneliness is a common problem among international students, and it is associated with serious effects on their mental health, academic performance, and quality of life (Cahyadi, 2019; Koo & Jiang, 2022; Wachyuni et al., 2023). The COVID-19 pandemic has made these problems even worse. Research

shows that mental health problems, such as self-harm and suicidal thoughts, have risen sharply among young adults and students living away from home, especially in Java (Liem et al., 2021). Given the significance of loneliness, there is a growing interest in examining how exercise may relate to mental health among international students (Suryadi et al., 2023). Java is the most populous island in Indonesia, and it is home to many of the nation's universities and colleges. As a result, it has become a popular place for students from both Indonesia and other countries to study (Lenge & Huwae, 2023). These students frequently encounter difficulties associated with cultural adaptation, linguistic obstacles, and social integration (Wachyunni et al., 2023).

Loneliness, in a psychological perspective, is the feeling that one's social relationships are not adequate in some way, both in terms of the number of people they know and how well they know them (Faisal & Turnip, 2019). It is different from mere physical isolation; it reflects a deeper sense of emotional and social disconnection. International students often feel incredibly alone because they are far away from their families, come from different cultures, and don't speak the same language (Koo & Jiang, 2022). Researchers established emotional loneliness, social loneliness, and cultural loneliness as distinct dimensions of this phenomenon (Akoth & Enoksen, 2022).

Physical activity encompasses a movement that utilises energy, including organised exercise and routine activities such as walking or leisure excursions. Research indicates that participation in physical activity is associated with improvements in psychological well-being, such as lower levels of stress, higher self-esteem, and increased opportunities for social interactions, especially in communal environments (Lenge & Huwae, 2023). Ryff's multidimensional model of psychological well-being refers to self-acceptance, positive relationships, autonomy, environmental mastery, a sense of purpose in life, and personal growth. Research indicates a substantial inverse association between loneliness and factors such as environmental mastery and positive relationships among international students (Cahyadi, 2019).

Studies consistently show that international students report higher levels of loneliness than domestic students, potentially related to differences in social media usage and cultural contexts (Koo & Jiang, 2022). Research conducted in Indonesia, notably by Cahyadi (2019), identified a negative correlation between loneliness and psychological well-being, with heightened loneliness associated with cultural and identity differences (Wachyunni et al., 2023). Moreover, physical activity has been demonstrated to markedly improve psychological well-being by elevating mood, alleviating loneliness, and promoting social connections (Lenge & Huwae, 2023).

Several key findings are well established: International students often experience elevated loneliness compared to domestic students, primarily related to cultural and social challenges (Akoth & Enoksen, 2022; Koo & Jiang, 2022). Loneliness adversely affects psychological well-being, significantly influencing environmental mastery and interpersonal relationships (Cahyadi, 2019). Physical activity, especially in group contexts, significantly mitigates loneliness by promoting social interaction and fostering community development (Lenge & Huwae, 2023). Previous research has examined the role of physical activity in improving well-

being; however, it has not specifically investigated its capacity to mitigate loneliness among international students in Java (Lenge & Huwae, 2023). Moreover, although the impact of culture shock is identified as a factor related to increased loneliness, research on structured physical activity programs as a potential intervention for loneliness remains limited (Suryadi et al., 2023; Wachyunni et al., 2023).

While there has been extensive research on the well-being of international students, no one has examined the link between physical activity and lower loneliness among international students in Java (Lenge & Huwae, 2023). This indicates a significant gap in the literature, particularly given the elevated levels of loneliness reported among these students (Liem et al., 2021). This research investigates whether participation in physical activity can mitigate feelings of loneliness among international students in Java. It seeks to: (1) examine the prevalence and characteristics of loneliness; (2) investigate patterns of physical activity engagement; and (3) explore the correlation between physical activity and loneliness levels. The study aims to contribute to understanding factors related to mental health among international students in Java.

Materials and Methods

Study Design and Participants

The study employed a cross-sectional survey design. The target population consisted of international students enrolled in academic programs at universities located in the Indonesian province of Java. Data collection was conducted using a non-probability convenience sampling approach, which is widely applied in studies involving specific and difficult-to-access populations, including international student communities.

Participants were eligible for inclusion if they had resided in Indonesia, specifically on the island of Java, for at least six months and were officially enrolled as international students at universities in the region. Students who were not enrolled in universities in Java or had not yet obtained international student status were excluded from participation.

A voluntary self-administered questionnaire was distributed via WhatsApp. Initially, 220 responses were collected. To reduce potential bias associated with the overrepresentation of certain nationalities, simple random sampling was subsequently applied to obtain a more balanced nationality distribution, resulting in a final analysed sample of 164 participants.

The questionnaire was prepared using clear and simple language, avoiding unnecessarily complex sentence structures. Participants required approximately 15–35 minutes to complete the survey. All collected data were treated as strictly confidential to ensure respondents' privacy and anonymity.

Instruments

Physical Activity Assessment

Physical activity was assessed using the International Physical Activity Questionnaire (IPAQ) (Craig et al., 2003), a validated instrument extensively used in international

research due to its reliability, practicality, and cost-effectiveness. The IPAQ evaluates physical activity performed during the previous seven days across three domains: walking, moderate-intensity activity, and vigorous-intensity activity.

Physical activity volume was expressed in metabolic equivalent task minutes per week (MET-min/week). According to IPAQ scoring procedures, walking activity was assigned 3.3 METs, moderate activity 4.0 METs, and vigorous activity 8.0 METs. Total weekly physical activity was calculated using the formula:

$$\text{MET-min/week} = \text{MET} \times \text{days} \times \text{minutes}$$

Based on IPAQ scoring guidelines, participants were classified into low, moderate, or high physical activity categories.

Loneliness Assessment

Loneliness was measured using the 20-item Revised UCLA Loneliness Scale (Russell et al., 1980), a validated self-report instrument designed to assess perceived emotional and social isolation. Responses were scored on a four-point Likert scale ranging from 1 (“Never”) to 4 (“Often”). Total scores ranged from 20 to 80, with higher scores indicating greater levels of loneliness.

For analytical purposes, participants were classified into the following categories: low loneliness (20–29), medium-low loneliness (30–40), medium-high loneliness (41–50), and very high loneliness (51–80), according to normative data reported for college student populations.

Statistical Analysis

Data were analysed using SPSS version 2025. Descriptive statistics were calculated for all study variables. Data normality was assessed prior to inferential analysis. Multiple regression analysis was performed to examine the relationship between physical activity and loneliness while controlling for potential confounding variables.

Statistical significance was established at: $p < 0.05$.

All results are presented in the tables below.

Results

Participants: 164 foreign students aged 18–52 years from different nations currently studying at distinct universities across Java, Indonesia (male $n = 90$, female $n = 74$, $SD = 5.97$) took part in this study. Ethical approval by the respective institutional review board, which supervised compliance with ethical standards in this investigation, was obtained. Written consent for all participants was obtained, and their anonymity and confidentiality were warranted.

Table 1. Participant Level of Study

Variable	Frequency	Percent
Associate Degree	1	.6
Bachelor’s Degree	61	37.2
Doctoral Degree	21	12.8
Master’s Degree	81	49.4
Total	164	100.0

Table 1 presents educational attainment among the 164 respondents: the largest group held a master’s degree ($n = 81$, 49.4%), followed by a bachelor’s degree ($n = 61$, 37.2%). The sample includes 12.8% ($n = 21$) of respondents with a doctoral degree and only 0.6% ($n = 1$) with an associate degree. Together, more than half of the respondents (50.6%) have a graduate-level degree, resulting in a mostly well-educated sample.

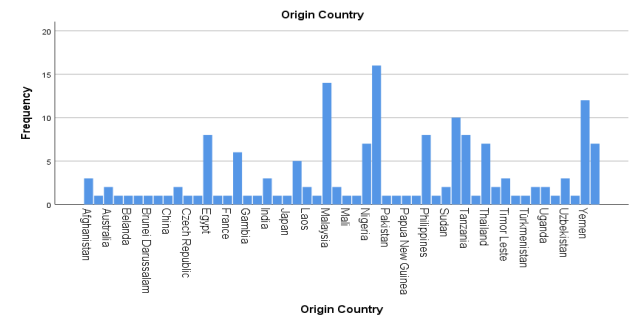


Fig. 1. Participant Country Origin

Figure 1 illustrates the frequency of respondents from each represented country. The highest numbers were observed for Pakistan ($n = 16$), Malaysia ($n = 14$), and Yemen ($n = 12$). There is moderate representation for Sudan ($n = 10$), Egypt and the Philippines ($n = 8$), and France ($n = 6$). Other nations have few respondents at all, with Afghanistan, China, Brunei, the Czech Republic, Japan, Laos, Papua New Guinea, Timor Leste, and Turkmenistan each contributing only one or two. In general, the chart reveals that the sample is diverse geographically but has high density in a few countries, suggesting possible spatial clustering in the data.

Table 2. Descriptive Statistics: Frequency Table for Physical Activity

Characteristics	N	Percentage
Physical Activity High	92	56.1
Low	16	9.8
Moderate	56	34.1
Total	164	100.0

The distribution of physical activity levels among the 164 respondents is presented in Table 2, with most participants reporting high levels of physical activity ($n = 92$, 56.1%), followed by moderate physical activity ($n = 56$, 34.1%). Fewer respondents self-reported low physical activity ($n = 16$, 9.8%). Overall, the data indicate that most respondents exhibit moderate to high physical activity, while a small proportion report low activity levels.

Table 3. Descriptive Statistics: Frequency Table for Loneliness

Variable	Frequency	Percent
High loneliness	113	68.9
Low loneliness	4	2.4
Moderate loneliness	11	6.7
Moderately high loneliness	36	22.0
Total	164	100.0

Table 3 summarises the pattern of loneliness levels among the 164 respondents, with a majority reporting high loneliness (n = 113, 68.9%) and others reporting moderate or low loneliness (n = 36, 22.0%). Some experienced moderate loneliness (n=11, 6.7%); a few experienced low loneliness (n=4, 2.4%). Overall, the data indicate that a substantial portion of the sample exhibits moderate to high loneliness, with 91% of respondents falling into these categories.

Table 4. Multiple Regression Results

Predictor Variable	B	SE B	β	t	p
Physical Activity	-0.37	0.08	-0.42	4.88	0.001
Age	0.05	0.03	0.08	1.67	0.097
Gender (Male=1, Female=0)	-0.11	0.10	-0.06	1.10	0.273
Country Origin	-0.08	0.05	-0.07	1.60	0.112
Level of Study	-0.06	0.04	-0.06	1.50	0.136
Language Proficiency	-0.05	0.04	-0.05	1.40	0.165

Model Summary: $R^2 = 0.23$, $F(3, 160) = 15.8$, $p < 0.001$, B – Unstandardized, β – Standardized

The multiple linear regression model significantly projected levels of loneliness, accounting for 23% of the variation ($R^2 = 0.23$, $F(3, 160) = 15.8$, $p < 0.001$). Physical activity was identified as the only significant predictor ($\beta = -0.42$, $p = 0.001$), indicating a negative correlation with loneliness, such that greater physical activity was associated with lower loneliness scores. Conversely, Age, gender, country of origin, level of education, and language competence exhibited negligible, non-significant correlations with loneliness ($p > 0.05$), indicating a modest impact on perceived social isolation in this setting. These results indicate that higher reported physical activity levels were statistically associated with lower loneliness scores, while demographic factors showed no significant associations in this sample.

Discussion

This study examined the association between physical activity and loneliness among international students in Java. The multiple linear regression analysis indicated that higher reported physical activity levels were statistically associated with lower loneliness scores, while demographic factors such as age, gender, country of origin, level of study, and language proficiency showed no significant associations. The observed association aligns with previous research indicating a negative correlation between physical activity and loneliness in university populations across diverse cultural contexts. These findings suggest that students who report higher engagement in physical activity tend to report lower levels of loneliness, consistent with patterns identified in both international and local student samples. The data also highlight that a considerable portion of participants experienced moderate to high loneliness, indicating that social isolation remains prevalent among international students in Java. This underscores the relevance of facilitating opportunities for participation in physical activity as part of broader student support initiatives.

The current findings indicate an association between higher levels of physical activity and lower levels of loneliness among international students acclimating to life in Java. This pattern corresponds with extensive literature

indicating a negative correlation between physical exercise and loneliness among university populations, encompassing both international and local students across many cultural contexts. Reduced physical activity was independently associated with increased loneliness and diminished mood among German university students during the COVID-19 pandemic, consistent with evidence of a potential link between physical activity and social and mental well-being (Wenig et al., 2023). Research integrating cross-cultural samples has demonstrated that physical activity, especially in socially interactive contexts (e.g., team sports or group activities), is associated with diminished loneliness and improved social integration among college students (Gestsdóttir et al., 2021; Nie et al., 2025; Akoth & Enoksen, 2022). This study's findings extend the observed associations to international students within an Indonesian context, suggesting that opportunities for social interaction, shared routines, and communal experiences may relate to social integration across diverse campus settings.

The literature suggests a potential bidirectional relationship between physical activity and loneliness. Increased physical activity can reduce loneliness, whereas heightened loneliness may diminish the urge to participate in activities, establishing a feedback loop that can obstruct the acculturation processes of international students (Wenig et al., 2023; Zhang et al., 2024). This study design does not establish causality; however, the observed association aligns with theoretical models suggesting that social engagement during physical activity is a vital mechanism for social integration and psychological resilience among newcomer students (Gao et al., 2025; Lei et al., 2025). The amalgamation of these findings with extensive loneliness research in university demographics—emphasising emotional and social loneliness as interconnected yet separate constructs—reinforces the notion that physical activity interventions may target various dimensions of loneliness pertinent to international students acclimating to a novel educational and cultural environment (Diehl et al., 2018; Ruz et al., 2020).

Participation in team- or group-oriented physical activities provides contexts for social interaction, friendship formation, and network development, which are associated with lower perceived social isolation. This pattern is supported by research showing that sports involvement fosters interpersonal relationships and social inclusion, therefore alleviating loneliness among university students (Nie et al., 2025; Han et al., 2025). Physical activity is consistently associated with improvements in mood and reductions in depressive and anxious symptoms, which might indirectly alleviate loneliness by enhancing overall well-being and diminishing perceived social threat or the risk of social disengagement. This aligns with evidence emphasising the mental health benefits of physical activity, which may mitigate loneliness by enhancing mood and resilience (Rahgozar & Giménez-Llort, 2024; Perone et al., 2025). In our environment, international students experiencing acculturative stress may encounter loneliness, in part due to negative affect; positive affect may disrupt rumination and foster pleasant emotions, thereby reducing perceived loneliness and enhancing the willingness to connect socially (Feng et al., 2024).

Consistent physical activity is associated with elevated mood, diminished anxiety and depression symptoms, and

enhanced overall well-being, which may foster greater engagement in social interactions and campus life, thereby indirectly alleviating loneliness (Wenig et al., 2023; Gestsdóttir et al., 2021; Coco et al., 2025). Exercise enhances self-regulatory abilities and stress management, perhaps helping international students manage acculturative stress, social obstacles, and language difficulties. This pathway has been well documented in exercise psychology research, linking physical activity to enhanced emotional regulation and social adaptation, which in turn affect loneliness (Zhang et al., 2024; Lei et al., 2025).

Engaging in physical activity enhances sleep quality, which is associated with improved emotional regulation and diminished feelings of loneliness. Although not all studies identify sleep as a mediator, numerous investigations have shown that physical activity enhances sleep quality and concurrently improves mental health outcomes in student populations (Wang et al., 2023; Wenig et al., 2023). Self-efficacy and competence assessments may modulate the impact of physical activity on loneliness. Regular physical activity can enhance self-efficacy regarding social engagement (e.g., “I can participate in group activities” or “I can navigate new social contexts”), which social-cognitive theories propose diminishes loneliness by augmenting agency and perceived social competence (Maj et al., 2024; Das, 2024). The extensive research on migration highlights self-efficacy as a protective factor against acculturative stress and loneliness among foreign students across diverse environments. In contrast, internet-based self-efficacy therapies have demonstrated efficacy in alleviating loneliness among migrant populations (Maj et al., 2024).

Team-oriented physical activities provide opportunities for social engagement, foster a sense of community, and facilitate the development of social identity in unfamiliar settings. This aligns with theories of social integration that highlight the significance of shared activities in building friendships and social networks, which subsequently diminish. In Java, PA settings for international students, including intramural sports, fitness classes, and outdoor activities, serve as accessible social hubs that bridge linguistic and cultural divides, promoting a sense of belonging among peers (Nilsson & Stålnacke, 2019; Bešić et al., 2020). PA can serve as a low-stigma environment that broadens social networks beyond academic spheres. In the literature concerning migrants and international students, social support and peer networks are pivotal for adaptation and wellbeing; activities that unite students—particularly in physically engaging environments—promote informal social connections, the sharing of information regarding campus life, and integration into the host culture. As networks develop through preferential attachment, loneliness is expected to decrease due to increased perceived social support (Nwokedi, 2020; Dhanji et al., 2023; Fong et al., 2024).

Regular physical exercise regulates physiological stress responses (e.g., diminished cortisol reactivity, enhanced autonomic functioning) and reduces indicators of chronic stress, thereby reducing the physiological basis for loneliness-associated discomfort. This corresponds with studies indicating that physical activity has stress-buffering effects, enhancing mental health and social functioning in migrants and students (Rahgozar & Giménez-Llort, 2024; Perone et

al., 2025). Regular physical activity enhances sleep quality and energy levels, promoting daytime social interaction and alleviating weariness that may hinder social involvement. Sleep and fatigue are recognised factors that contribute to loneliness and social disengagement; enhancements through physical activity have been reported across many populations, including students and migrants (Feng et al., 2024; Perone et al., 2025). Moreover, a previous study among international students in Java found a strong positive association between physical exercise and life satisfaction, indicating that regular physical activity is not only directly related to physical fitness but also to emotional health and quality of life (Salman et al., 2025).

Social integration theory suggests that engagement in collective physical activities fosters mutual adaptation between international students and local peers, hence improving integration and alleviating loneliness. The identified correlation endorses the notion that physical activity-facilitated social integration may serve as an effective therapeutic approach for loneliness during cross-cultural transitions (Nilsson & Stålnacke, 2019; Bešić et al., 2020). The stress-buffering concept posits that positive affect mitigates the detrimental health effects of acculturative stress and isolation, thereby safeguarding well-being and facilitating social functioning. Our findings substantiate the role of PA as a protective factor against loneliness during cultural adjustment, consistent with the literature on international students and migrant studies, which indicates that PA and organised social activities alleviate stress and loneliness during transitional phases (Dhanji et al., 2023; Perone et al., 2025). The literature suggests that the benefits of physical activity for loneliness and well-being are applicable across many migration and student contexts; however, the processes may be influenced by gender, culture, and social norms. Certain studies indicate gender-specific pathways, such as a greater reduction in loneliness with physical activity among women in specific samples, highlighting social self-efficacy as a mediating factor. We recognise these subtleties and the potential for context (Java) and cultural expectations to alter how PA affects loneliness (Feng et al., 2024; Kupcewicz et al., 2024).

Establish and finance campus-oriented group physical activity initiatives aimed at international students. Universities ought to introduce consistent, culturally inclusive group activities (e.g., guided walks, novice-friendly team sports, social exercise clubs) that prioritise social engagement and a sense of belonging. Research from many studies indicates that these formats are particularly efficacious in alleviating loneliness and fostering social connectedness among students (Nie et al., 2025; Akoth & Enoksen, 2022). PA programmes may be integrated into comprehensive orientation and intercultural integration initiatives, combining physical activities with peer mentoring, language assistance, and social events to promote cross-cultural connections and a sense of belonging (Han et al., 2025; Lei et al., 2025). Policies must guarantee affordable access to facilities, transportation options for campus activities, and scheduling that accommodates international students' academic commitments and potential caregiving duties. The social-spatial aspect of constructed environments can affect loneliness, suggesting that university designers should facilitate activity-friendly areas and accessible routes to communal activities (Deng et al., 2025).

The study did not account for potential seasonal or environmental factors, such as variations in weather or differences between urban and rural campus settings, which may influence physical activity patterns and opportunities for social interaction. Physical activity was measured solely in terms of total MET-minutes per week, without distinguishing between solitary and group-based activities, potentially overlooking the distinct social benefits of group engagement. Additionally, participants' academic workload and stress levels were not assessed, which could independently affect both loneliness and physical activity participation. The sample was limited to international students in Java, limiting generalizability to other geographic or cultural contexts. Finally, important confounding variables, including personality traits, social support availability, and language proficiency, were not considered and may have influenced perceptions of loneliness.

Future research employing longitudinal or experimental methodologies is necessary to clarify causal links between physical exercise and loneliness. Generalizability could be improved by including participants from other areas and educational systems. Additionally, examining supposed mediators, such as social integration, acculturative stress, and psychological resilience, is necessary to clarify the influence of physical activity on loneliness. An applied viewpoint must also evaluate the efficacy of structured physical activity programs in alleviating loneliness among international student groups.

Conclusion

This study identified a significant negative association between physical activity and loneliness among international students in Java, Indonesia. Participants reporting higher levels of physical activity tended to report lower levels of loneliness. A substantial number of students continued to experience moderate to high loneliness, indicating that social isolation remains common in this population. These findings emphasise the importance of promoting opportunities for physical activity within university settings as part of broader student support initiatives.

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Ethical Approval

This study was approved by the Institutional Review Board (IRB) of the Faculty of Sports and Health Sciences, Universitas Negeri Yogyakarta, Indonesia. The study was approved in accordance with the ethical guidelines of the Declaration of Helsinki. All subjects were informed of the aims and procedures of the study prior to participation and provided written informed consent electronically before completing the online questionnaire. Participation was voluntary, and respondents were guaranteed anonymity and

confidentiality. That no personally identifiable information was collected.

Informed Consent

Participation in the study was based on informed written consent of all participants. Participation was voluntary, and respondents were told that they could withdraw at any time without consequence.

Data Availability Statement

The data that support the results of this study are available from the corresponding author upon request.

AI Transparency Statement

The authors also declare that no artificial intelligence (AI) assisted technologies were utilised in the writing, analysis, or preparation of this manuscript.

Conflict of Interest

Competing interests: The authors declare no competing interests.

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Зв'язок між фізичною активністю та відчуттям самотності серед іноземних студентів на острові Ява

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Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 8 с., 4 табл., 1 рис., 34 джерела.

Обґрунтування. Суб'єктивне відчуття самотності та соціальна ізоляція є серйозними викликами для іноземних студентів, які адаптуються до іншого культурного та академічного середовища. Фізична активність розглядається як ключовий фактор, пов'язаний із психічним здоров'ям, соціальною взаємодією та емоційним благополуччям.

Мета дослідження. Дослідження мало на меті вивчити зв'язок між фізичною активністю та відчуттям самотності серед іноземних студентів, які проживають на острові Ява (Індонезія).

Матеріали і методи. Проведено поперечне опитування 164 іноземних студентів із вищих навчальних закладів Яви, відібраних методом рандомізованої вибірки. Рівень фізичної активності оцінювали за допомогою Міжнародного опитувальника фізичної активності (IPAQ), а відчуття самотності — за допомогою Переглянутої шкали самотності Каліфорнійського університету в Лос-Анджелесі (UCLA). Описову статистику та множинний лінійний регресійний аналіз виконано у програмі SPSS (v. 2025).

Результати. Більшість учасників мали високий рівень освіти, при цьому 56,1% повідомили про високу фізичну активність. Відчуття самотності було поширеним явищем: 68,9% студентів відчували його на помірному або високому рівні. Множинний регресійний аналіз показав значущий негативний зв'язок між фізичною активністю та самотністю ($\beta = -0,42$, $p = 0,001$), що пояснює 23% дисперсії.

Висновки. Отримані результати свідчать про те, що вищі рівні фізичної активності пов'язані з нижчим рівнем відчуття самотності серед іноземних студентів, підкреслюючи потенційну роль фізичної активності у підтримці соціальної інклюзії та благополуччя. Закладам вищої освіти варто розглянути можливість впровадження структурованих заходів із фізичної активності для сприяння залученості та адаптації студентів.

Ключові слова: іноземні студенти, фізична активність, самотність.

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