Available online at https://journal.uny.ac.id/index.php/medikora
MEDIKORA, Vol. 24 No. 1 April 2025, Hal 66-80

EXPLORING THE RELATIONSHIP BETWEEN PHYSICAL ACTIVITY AND LIFE SATISFACTION AMONG INTERNATIONAL STUDENTS AT INDONESIAN UNIVERSITIES LOCATED IN JAVA

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Abstract
Internationalization has grown from an insignificant challenge to a crucial priority in recent decades, becoming a vital part of global higher education systems. The key objevtive of this study was to investigate the relationship between physical activity and life satisfaction among international students attending Indonesian institutions in Java. Importance to promoting their overall well being and adaptation in a foreign academic evironmentThis study included 220 foreign students (121 (55%) male, aged 18 to 52, mean age 26.7 and SD = 5.9 years old) from various countries who were studying at several institutions in Java, Indonesia. Physical activity data were collected using IPAQ(International Physical Activity Questionnaire), and life satisfaction was measured using the Satisfaction with Life Scale (SWLS). The non probability convenience sampling method used to collect the data and pearson statistical used to analysis the correlation between life satisfaction and physical activity. The findings showed that life satisfaction and physical activity were strongly positively correlated, with a Pearson correlation coefficient (r) of 0.806, the coefficient of determination (R2) was 0.63, indicating that variations in physical activity levels account for 63% of the variance in life satisfaction. A p-value of 0.002, well below the conventional threshold of 0.05, validated the statistical significance of this association. Regular physical exercise was associated with better levels of life satisfaction among international students. These results emphasise how important it is to include physical exercise in daily routines in order to increase foreign students' life satisfaction. To further understand the basic processes and show how physical activity and life satisfaction are related in this student population, more study is required.
Keywords: Life satisfaction, international students, physical activity.

MENGAMATI BAGAIMANA KEPUASAN HIDUP DAN AKTIVITAS FISIK BERHUBUNGAN DENGAN MAHASISWA INTERNASIONAL DI UNIVERSITAS-UNIVERSITAS DI PULAU JAWA INDONESIA.

Abstrak
Internasionalisasi telah berkembang dari tantangan yang tidak signifikan menjadi prioritas penting dalam beberapa dekade terakhir, menjadi bagian penting dari sistem pendidikan tinggi global. Tujuan utama dari penelitian ini adalah untuk menyelidiki hubungan antara aktivitas fisik dan kepuasan hidup di antara mahasiswa asing yang belajar di perguruan tinggi Indonesia di Pulau Jawa, tingkatkan kesehatan mereka secara keseluruhan dan kemampuan adaptasi mereka dalam lingkungan akademik

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asing Penelitian ini melibatkan 220 mahasiswa asing berusia 18-52 tahun dari berbagai negara yang sedang belajar di beberapa institusi di Jawa, Indonesia. Data aktivitas fisik dikumpulkan dengan menggunakan IPAQ (International Physical Activity Questionnaire) dan kepuasan hidup diukur dengan menggunakan Skala Kepuasan Hidup (Satisfaction with Life Scale/SWLS). Metode pengambilan sampel non probabilitas convenience yang digunakan untuk mengumpulkan data dan metode statistik pearson digunakan untuk menganalisis hubungan antara kepuasan hidup dan aktivitas fisik. . Temuan menunjukkan bahwa kepuasan hidup dan aktivitas fisik memiliki korelasi positif yang kuat, dengan koefisien korelasi Pearson (r) sebesar 0,806, koefisien determinasi (R2) sebesar 0,63, yang menunjukkan bahwa variasi dalam tingkat aktivitas fisik menyumbang 63% dari varians dalam kepuasan hidup. Nilai p sebesar 0,002, jauh di bawah ambang batas konvensional 0,05, memvalidasi signifikansi statistik dari asosiasi ini. Latihan fisik secara teratur dikaitkan dengan tingkat kepuasan hidup yang lebih baik di kalangan mahasiswa internasional. Hasil ini menekankan betapa pentingnya memasukkan latihan fisik dalam rutinitas sehari-hari untuk meningkatkan kepuasan hidup mahasiswa asing. Untuk lebih memahami proses dasar dan menunjukkan bagaimana aktivitas fisik dan kepuasan hidup terkait dalam populasi mahasiswa ini, diperlukan lebih banyak penelitian.
Kata kunci : Rasa puas hidup, siswa asing, aktivitas fisik

INTRODUCTION

Internationalization has progressed from an insignificant concern to a fundamental priority in recent decades, establishing itself as an essential component of higher education systems across the world.(Gao & De Wit, 2017). Due to its many educational institutions and diverse cultural milieu, Indonesia has grown in popularity as a destination for international students pursuing higher education (Baas, 2019). The Republic of Indonesia's Ministry of Research, Technology, and Higher Education utilizes the growing number of international students as a key indicator to evaluate how competitive its universities are in the world market (Hapsari and Hamamah, 2019).

Any movement of the body caused by the contraction of skeletal muscles that requires energy expenditure above the basal metabolic rate is referred to as physical activity (PA). This includes a range of activities such as organized physical activity, leisure sports, and daily tasks like household or walking (Galfo & Melini 2021).. Numerous studies have linked physical exercise to health benefits such a lower chance of developing chronic diseases and other age-related problems, a decrease in obesity, better mental health, and a lower risk of developing cancer (de Hollander and Proper 2018). The World Health Organization (WHO) states that physical activity (PA) is essential for all age groups, including newborns, the elderly, pregnant women, and persons with chronic illnesses and/or impairments (Nuzum et al. 2020). Nonetheless, roughly 25% of individuals do not follow the WHO's guidelines for physical activity, resulting in nearly five million deaths per year (Mbabazi et al. 2022). This indicates that PA has become an important global health priority.

Physical activity (PA) has been linked to higher subjective well-being (SWB) and life satisfaction among college students (Pengpid & Peltzer, 2019; Zhang et al., 2021). For international students, who face particular challenges as they adapt to a new academic and cultural setting, this relationship is especially crucial (Jiang et al., 2020). Prior research has demonstrated that the greatest decline in physical activity levels occurred after college enrolment (Pengpid et al., 2015). The necessity for effective interventions is shown by the meta-analysis that revealed a high percentage of college students are physically inactive (Wang et al., 2024). The degree of physical activity among college students is similarly influenced by gender disparities. According to studies, malestudents are typically more physically active than their female counterparts. maleare more likely than female to be physically active, for instance, according to a systematic review, and female students frequently report lower levels of moderate-to-vigorous physical activity (MVPA) (Moreno-Arrebola et al., 2018)However, there is also evidence that physical exercise can operate as a stress buffer (Schilling et al., 2020) and

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help reduce stress reactivity and stress-related disease (Mücke et al., 2018). As evidenced by lower increases in salivary cortisol, higher levels of physical activity and fitness, for instance, are linked to lessened responses to psychosocial stress (Gnam et al., 2019). According to a recent study, students' mental health, cardiovascular fitness, and physical activity are all correlated. After six weeks of low to moderate aerobic exercise, students' perceptions of stress and depression are reduced by short-term aerobic exercise (Herbert et al., 2020).

Life satisfaction among foreign students is an important factor in their general well-being and academic achievement while studying abroad. It refers to how well students' experiences in a host country match their particular acculturation aims and expectations (Jiang et al., 2020). The value of life satisfaction for foreign students cannot be emphasized, since it affects many aspects of their academic and personal lives. According to research, life satisfaction is strongly associated with academic achievement, retention, and mental health (Cruwys et al., 2020). Understanding and improving life satisfaction among foreign students is critical for both the individuals and the institutions that accommodate them. It not only benefits students' personal and intellectual development, but it also helps significantly to the internationalization of higher education and the long-term viability of foreign student programs (; Jiang et al., 2020). As a result, colleges and authorities should emphasize efforts to increase the overall life happiness of overseas students through better support services, cultural integration programs, and academic resources.

Understanding the elements that contribute to foreign students' well-being is critical for Indonesian institutions as they strive to internationalize and increase their global competitiveness (Lambey et al., 2023)., there is little information on the life satisfaction of abroad students in Asian nations, including Indonesia (Jiang et al., 2020). This knowledge gap is especially important in Indonesia's complicated and fragmented higher education system, which encompasses approximately 4,500 institutions (Lambey et al., 2023 202).. In order to increase institutions' global competitiveness and meet sustainable development goals in higher education, such research may help shape policies and practices that enhance international students' overall experience (Wijaya & Putri, 2023). Numerous aspects of physical exercise and life happiness are highlighted in the research currently under publication, especially with regard to university students worldwide. Nonetheless, there is still a noticeable disparity when looking at international students in Java province, Indonesia, especially when it comes to the degree of life satisfaction.There are particular difficulties faced by international students in Indonesia that may have an impact on their general happiness and well-being. Increased pressures resulting from the struggle between cultural adjustment and academic achievement may distort their participation in regular physical activity. Although it is commonly known that physical activity improves life satisfaction (Shpakou et al., 2022), not all demographics or contexts will experience this relationship. Due to social and cultural difficulties, international students who frequently feel isolated and alone may find it difficult to engage in physical activities, which will negatively impact their overall state of life (Nilsson & Stålnacke, 2019). Educational institutions might not provide foreign students with the proper support if they don't have a good understanding of the relationship between physical exercise and life satisfaction. In order to fill an essential gap in the research, this study intends to explore these correlations in order to guide better health and wellness initiatives tailored to international students.

METHODS

The study used a cross-sectional survey design. According to Ziauddin et al. (2023), cross-sectional studies are particularly useful for determining the prevalence of phenomena at a specific point in time, which makes them appropriate for exploratory research and the collection of preliminary evidence The survey only covered international students enrolled in

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academic program in Indonesian universities located in Java region. The non probability convenience sampling methods used to collect the data which, because of their effectiveness and convenience, are frequently used in research, especially when studying specialized communities, such as international students in Indonesia.Students who have spent at least the last six months in Indonesian universities located in Java region. On the contrary, individuals who were not from Java area Indonesian universities and had to be foreign students at Java region Indonesian universities were excluded.

Participants

A three-part questionnaire comprising demographic enquiries, a physical activity evaluation, and a life satisfaction survey was distributed to the participants. The data was collected via online Google form that was distributed to 650 international students via whats app and finally got 220 responsded Throughout the data collection process, straightforward language was employed, avoiding complicated word structures. Participants spent between 15 and 35 minutes filling out the questionnaire. To preserve the privacy of the participants, all acquired data was kept totally in confidential.

Sample size

After entering the entire population size, which was around 450 students, into the Yamane formula created by Taro Yamane (Tapping, 1968), we were able to get the overall sample size, which was around 220 international students. The data was obtained during October and December 2024.Participants were requested to provide information about their age, gender, count ry of origin, current city of the study, university name, and study program.

Instrument

Participants' overall cognitive assessments of life satisfaction were assessed in this study using a 5-item Likert SWLS developed by Diener et al. (1985). The Satisfaction with Life Scale (SWLS) has been shown in numerous research evaluating its psychometric properties across a range of demographics to have strong reliability and validity for overseas students the questionnaire used in original form. Regardless of demographic characteristics like gender and age, the SWLS has demonstrated measurement invariance across 65 countries and several languages, demonstrating its international usefulness in evaluating life satisfaction (Swami et al., 2025). On a scale of 1 to 7, where 1 denotes strongly disagree and 7 denotes strongly agree, participants stated whether they agreed or disagreed with each proposition.

In order to ascertain the participants' levels of physical activity (vigorous, moderate, andlow) during the preceding seven days, Craig et al. (2003) developed the IPAQ (International Physical Activity Questionnaire) instrument. It consists of seven questions that can produce data, which can subsequently be used to gather information on global trends in physical activity connected to health. utilized IPAQ since it is a popular instrument for determining levels of physical activity because of its cost-effectiveness, global applicability, validity, accessibility, and standardized methodology. Physical activity is measured by the IPAQ scoring system, which takes into account the amount of time spent walking, engaging in moderate activities (such as cycling or brisk walking), and engaging in vigorous activities (such as intense exercise or running). Walking is for 3.3 METs, moderate activity is worth 4.0 METs, and vigorous activity is worth 8.0 METs. Each activity is scored in terms of MET-minutes per week. Multiplying the MET value by the number of days and minutes an individual works out each week gets the overall score. Students are classified as low (inactive) if their weekly MET-min is less than 600, moderate (active) if their weekly MET-min is at least 600, and vigorous (extremely active) if their weekly MET-min is 3000 or more, based on their overall score.

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Data analysis

The SPSS v.2025 software was utilised for data analysis. pearson correlation, normality test and descriptive statistics were used to analyse the data. The p-value was chosen at less than 0.05 (p value < 0.05) for all analyses, as is further shown in tables.

RESULTS

This study included 220 foreign students aged 18 to 52 from various countries who were studying at several institutions in Java, Indonesia (121 male and 99 females; mean 26.67 and SD 5.968). The relevant institutional review board provided ethical approval for this study to ensure conformity with ethical norms. All subjects gave informed consent, and their confidentiality and anonymity were strictly followed throughout the study.

Table.1 Participants Level of Study

		Frequency	Percent	Cumulative Percent
	Associate Degree / Diploma 3	1	.5	.5
	Bachelor's Degree / Sarjana	82	37.3	37.7
	Doctoral Degree / Doktor	28	12.7	50.5
	Master's Degree / Magister	109	49.5	100.0
	Total	220	100.0	

The majority (49.5%, 109 participants) were seeking a master's degree. This is followed by 37.3% (82 participants) at the Bachelor's (Sarjana) level. Respondents with a Doctoral degree (Doktor) account for 12.7% (28 respondents), with just 0.5% (1 respondent) holding an associate degree or Diploma 3. The cumulative statistics show that 37.7% of respondents have a bachelor's degree, more than half (50.5%) have a doctoral degree, and the full sample has a master's degree.

Table.2 Participants Country Origin

	Frequency	Percent	Cumulative Percent
Afghanistan	3	1.4	1.4
Algeria	1	.5	1.8
Australia	2	.9	2.7
Bangladesh	1	.5	3.2
Botswana	1	.5	3.6
Brunei Darussalam	1	.5	4.1
Burundi	1	.5	4.5
China	1	.5	5.0
Cambodia	2	.9	2.7
Czech Republic	1	.5	6.4
East Timor	1	.5	6.8
Egypt	8	3.6	10.5
Fiji	1	.5	10.9
France	1	.5	11.4
Gambia	8	3.9	14.5
Guinea	1	.5	15.5
India	3	1.4	16.8

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Indonesia	1	.5	17.3
Japan	1	.5	17.7
Kenya	5	2.3	20.0
Laos	2	.9	20.9
Madagascar	1	.5	21.4
Malaysia	15	5.9	27.3
Mali	2	.9	28.2
Myanmar	1	.5	29.5
Nigeria	7	3.2	32.7
Pakistan	73	33.2	65.9
Palestine	1	.5	66.4
Papua New Guinea	1	.5	66.8
Peru	1	.5	67.3
Philippines	8	3.6	70.9
Poland	2	.9	71.8
Sudan	12	5.0	77.3
Tanzania	9	4.1	81.4
Thailand	7	3.2	84.5
The Gambia	1	.5	85.0
Timor Leste	4	1.8	86.8
Turkmenistan	3	1.4	88.2
Uganda	2	.9	89.1
United Arab Emirates	1	.5	89.5
Uzbekistan	3	1.4	90.9
Vietnam	1	.5	91.4
Yemen	12	5.5	96.8
Zimbabwe	7	3.2	100.0
Total	220	100.0	

The table shows the respondents' countries of origin in a sample of 220 people, with the distribution presented as frequencies and percentages. The majority of responders, 33.2% (73 individuals), are from Pakistan, which contributes considerably to the overall sample. Other countries with significant participation include Malaysia (5.9%, 15 individuals), Yemen (5.5%, 12 individuals), and Sudan (5.0%, 12 individuals). Tanzania (4.1%, 9 persons) and Egypt and the Philippines (both 3.6%, 8 individuals) make significant contributions. Respondents from smaller groups include Kenya (2.3%, 5 individuals), Timor-Leste (1.8%, 4 individuals), and Afghanistan, India, Turkmenistan, and Uzbekistan (1.4%, 3 individuals). Many other nations, like Algeria, Brunei Darussalam, and Vietnam, have only 0.5% (1 individual) representation. The cumulative percentage demonstrates each country's contribution, which reaches 100% after accounting for all responses.

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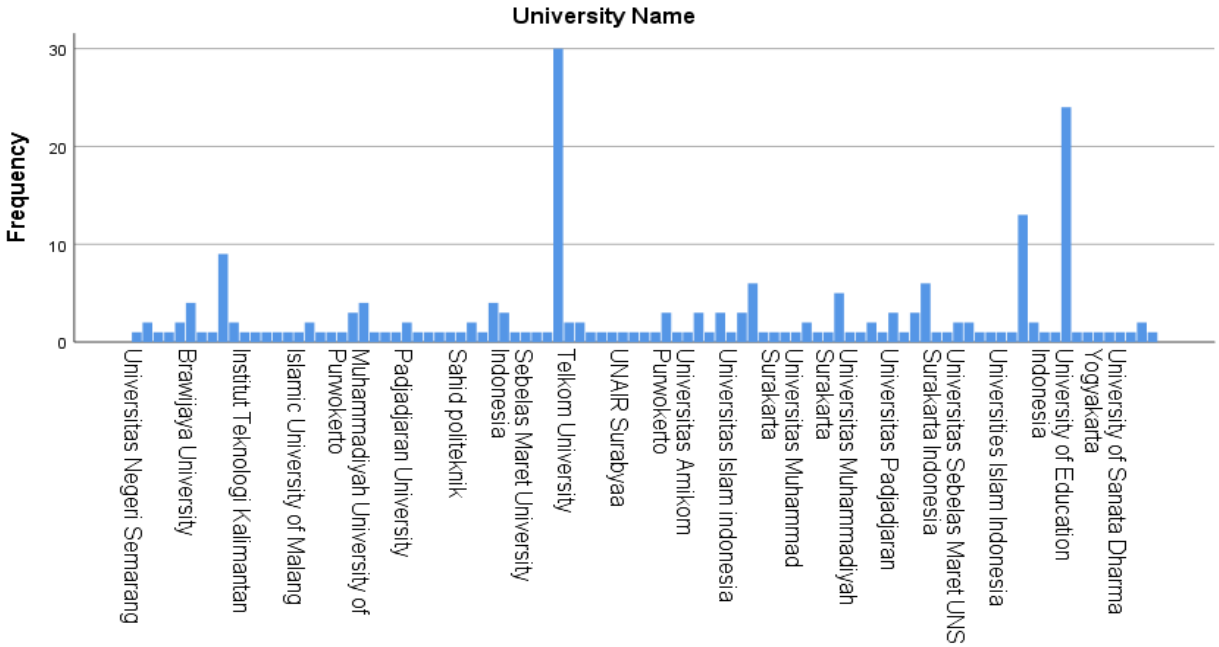

Figure 1: International students participation based on different universities.

The bar graph shows the frequency distribution of respondents according to their university affiliation. Among the universities covered, Sebelas Maret University has the most responders, with a frequency of around 30, making it the most represented university in the sample. Telkom University, Universitas Islam Indonesia, and the University of Sanata Dharma all have a moderate presence, with a large number of responders each. In contrast, numerous universities, like Brawijaya University, Muhammadiyah University of Malang, and Universitas Negeri Semarang, had lower frequencies, indicating fewer responses from these institutions.

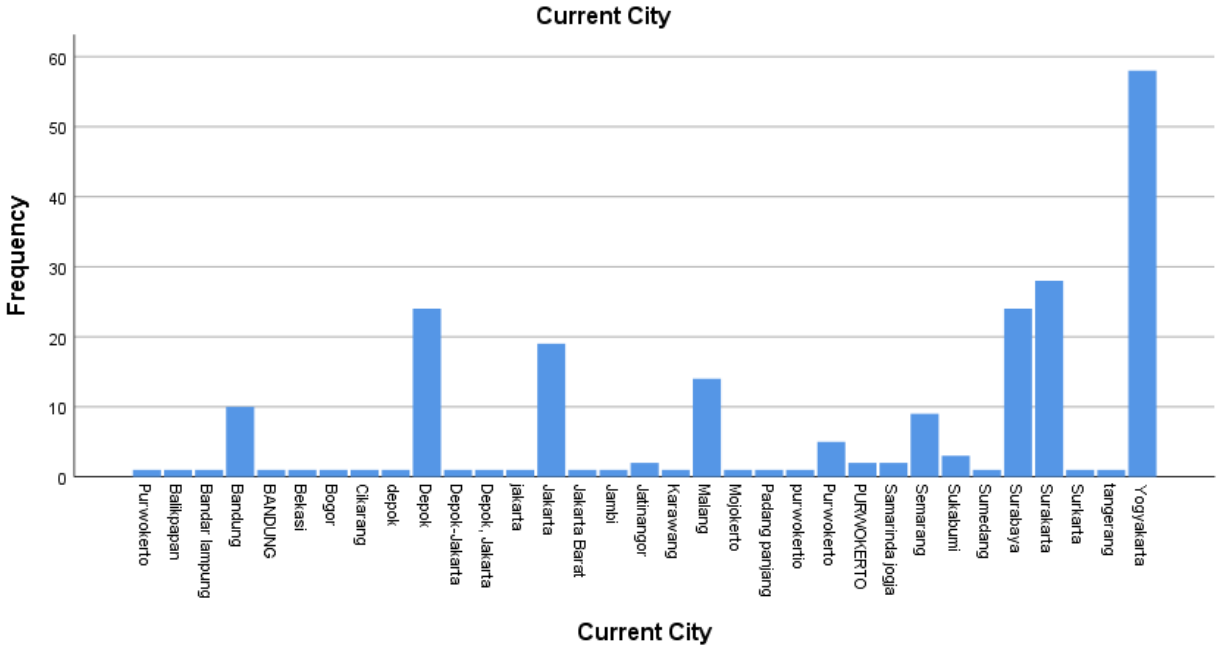

Figure 2: International students participation based on different cities.

The bar graph shows the frequency distribution of respondents according to their current city of residence. Yogyakarta is the most often represented city, with over 58 responses, making

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it the sample's dominating location. Surakarta follows with roughly 28 responses, while Surabaya and Depok each have around 24 respondents, showing that these cities are also well represented. Cities such as Jakarta and Malang have modest frequency, with 19 and 14 respondents respectively. Other cities, including as Bandung, Semarang, and Purwokerto, made lesser but significant contributions, each with fewer than ten responders. Several cities, like Bogor, Jambi, and Cikarang, are represented by only one responder, showing a lack of representation from these communities.

A regional study finds that South Asia, led by Pakistan, leads, but Middle Eastern and North African nations such as Yemen, Sudan, and Egypt are also well represented. Southeast Asia, notably Malaysia, makes a considerable contribution, while Sub-Saharan Africa is represented by nations such as Kenya, Zimbabwe, and Tanzania. Western and European countries have a low presence, indicating that they may favor other study places. In terms of university involvement, Sebelas Maret University leads with roughly 30 responders, demonstrating its significant attraction to foreign students. Telkom University, Universitas Islam Indonesia, and the University of Sanata Dharma all have reasonable participation rates, however Brawijaya University and Muhammadiyah University of Malang have fewer responders, indicating limited international outreach or a domestic concentration.

Geographically, Yogyakarta appears as the most popular city, with 58 responses, reinforcing its role as Indonesia's educational powerhouse. Surakarta (28 respondents), Surabaya (24 respondents), and Depok (24 respondents) all have a high representation, which is most likely owing to their university programs and welcoming surroundings. Smaller cities, like as Jakarta, Malang, and Bandung, have low participation rates, while Bogor, Jambi, and Cikarang each have only one respondent, emphasizing their limited involvement in hosting international students. These patterns indicate that, while Indonesia has a diversified foreign student population, some locations and institutions dominate. Universities in smaller cities and underrepresented regions might expand their outreach efforts to attract more foreign students. Table 3 and 4 show descriptive data and frequency tables for 220 individuals based on their level of life satisfaction and physical activity.

Table.3 Descriptive Statistics Frequency table for Physical Activity

Characteristics		N	%
Physical Activity	High	123	55.9
	Low	22	10.0
	Moderate	75	34.1
	Total	220	100.0

The data presented show the distribution of physical activity levels among respondents. Out of a total of 220 people, the majority (55.9%, n = 123) reported participating in high physical exercise. A smaller portion, 34.1% (n = 75), reported moderate levels of physical activity, with just 10.0% (n = 22) reporting low levels. This distribution shows that more than half of the participants engage in high levels of physical activity, with fewer falling into the moderate or low activity groups.

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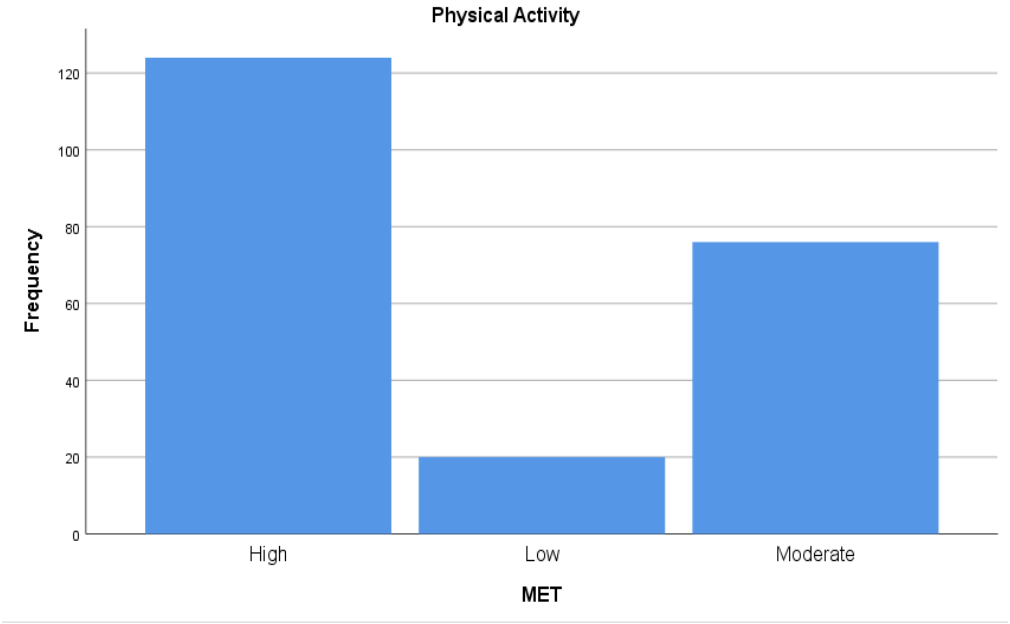

Figure 3: Physical Activity

Based on their MET (Metabolic Equivalent Task) ratings, the bar chart shows how students are distributed across various levels of physical activity. The three levels of physical activity—High, Moderate, and Low—are represented by the x-axis, while the frequency or total number of students in each level is displayed on the y-axis. With a frequency of about 123, the largest number of participants are in the high physical activity group, suggesting that most of them participate in high levels of physical activity. With only about 75 participants, the moderate activity group has a lower frequency, indicating that a sizable percentage of participants continue to engage in a respectable amount of physical activity. With only roughly 22 participants, the low activity category, on the other hand, contains the fewest students, indicating that very few students participate in minimum physical activity. All things considered, the data shows that the majority of people engage in high or moderate levels of physical exercise, with very few students living sedentary lives.

Table.4 Descriptive Statistics Frequency table for Life Satisfaction

Characteristic	N	∑ ***N***	%
Category 1 (Dissatisfaction)			
Extremely Dissatisfied	6		
Dissatisfied	7	47	21.4
Slightly Dissatisfied	34		
Category 2 (Neutral)		15	6.8
Category3 (Satisfaction)			
Extremely Satisfied	12		
Slightly Satisfied	46	158	71.9
Satisfied	100		

The table presents the degrees of satisfaction in three categories: dissatisfaction neutrality, and satisfaction. Of the respondents, 21.4% (n = 47) reported dissatisfaction including those who were extremely dissatisfied (n = 6), dissatisfied (n = 7), and slightly

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dissatisfied (n = 34). A smaller proportion of responders, 6.8% (n = 15), were neutral. The majority of participants, 71.9% (n = 158), reported being slightly satisfied (n = 46), satisfied (n = 100), or extremely satisfied (n = 12). This distribution shows that the majority of respondents were satisfied, with only a small number indicating dissatisfaction or neutral. □

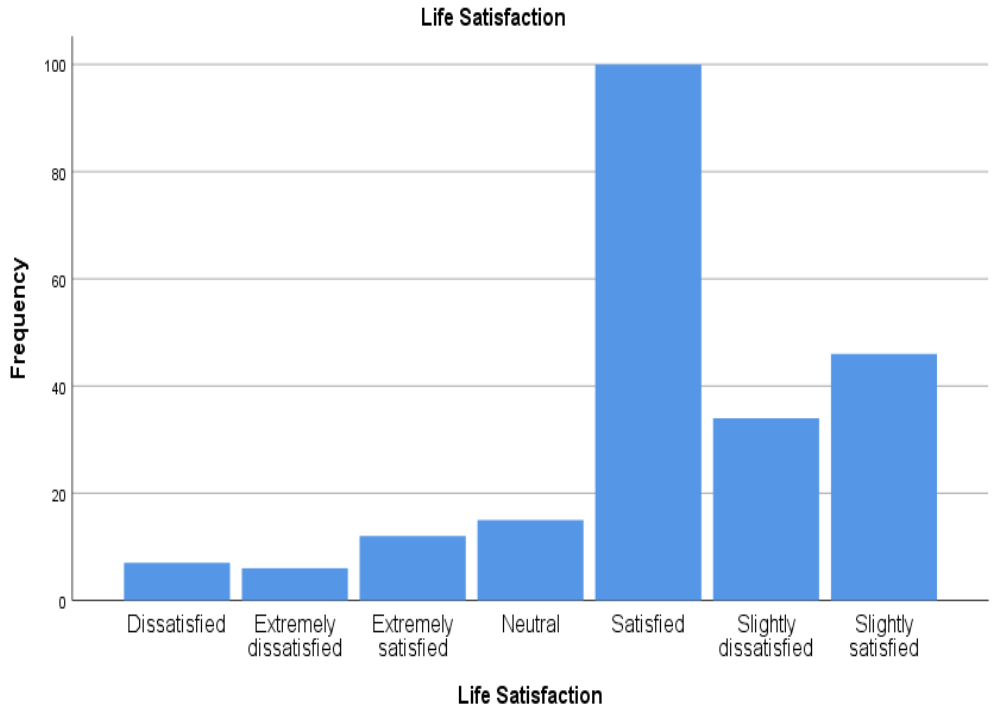

Figure 4: Life Satisfaction

The distribution of individuals across various life satisfaction levels is depicted in the bar chart. The frequency of individuals in each group is displayed on the y-axis, while the x-axis depicts different satisfaction levels, ranging from severely unhappy to extremely satisfied. With a frequency of more than 100, the majority of participants are classified as contented, meaning they are generally content with their life. With almost 46 individuals, the second-highest group is "slightly satisfied," indicating that many individuals fall on the side of a partial satisfaction. On the other hand, a smaller percentage of individuals —about 34—are slightly dissatisfied indicating that some individuals feel this way. With only 15 individuals, the neutral category has a lower frequency, indicating that very individuals are neither satisfied nor dissatisfied. With only 6–15 individuals apiece, the least common responses are extremely satisfied, dissatisfied, and extremely dissatisfied. To determine if the data has a normal distribution or not, the normality test is carried out. The Kolmogorof-Smirnov test was used in this study as the data normality testing method.

Table.5 Normality Test Results

Data	KSZ	p	Interpretation
Physical Activity	1.095	0.182	Normally
Life Satisfaction	1.074	0.199	Normally

Physical activity data that followed a normality test showed a significance value of 0.182 and a KSZ score of 1.095. The physical activity data considered normal since the significance value is higher than 0.05 (p>0.05). This indicated that parametric statistics can be used to analyze data on physical activity. The significance value in the life satisfaction data was 0.199,

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and the KSZ value was 1.074. The life satisfaction data considered normal since the significance value is higher than 0.05 (p>0.05). It showed that parametric statistical analysis appropriate for life satisfaction data. Since the data parametric, Pearson correlation can potentially be measured the relationship between life satisfaction and physical activity.

Table.6 Pearson Correlation Results

Variables	Pearson Correlation (r)	R^2 (Coefficient of Determination)	p-Value	Interpretation
Physical Activity & Life Satisfaction	0.806	0.63	0.002	Strong Positive Correlation

The findings showed that life satisfaction and physical activity were strongly positively correlated, with a Pearson correlation coefficient (r) of 0.806. This indicates there is a positive correlation between life satisfaction and physical activity levels. Furthermore, the coefficient of determination (R2) was 0.63, indicating that variations in physical activity levels account for 63% of the variance in life satisfaction. A p-value of 0.002, well below the conventional threshold of 0.05, validated the statistical significance of this association. This research emphasizes the significance of physical activity as a potential element influencing international students' overall life satisfaction and well-being in Java.

DISCUSSION

The results of the Pearson correlation analysis indicate that among international students studying Indonesian universities in Java, physical activity and life satisfaction are strongly positively correlated (r = 0.806, p = 0.002). The Pearson correlation coefficient (r) of 0.806 indicates a robust relationship, with higher levels of physical activity being associated with greater life satisfaction, indicating that as students increase their physical activity, their overall sense of well-being and life satisfaction improves. With a coefficient of determination (R2) of 0.63, the variance in physical activity accounts for almost 63% of the variation in life satisfaction. This is a significant proportion that suggests physical activity plays a major role in determining the students' level of life satisfaction. Additionally, the p-value of 0.002 is below the commonly used significance level of 0.05, suggesting that there is a statistically significant correlation between life satisfaction and physical activity.

These results align with earlier research. Our results, for instance, support the idea that regular physical activity enhances general well-being. A longitudinal study by Hermawansyah et al. (2021) found a bidirectional relationship between the frequency of physical activity and life satisfaction in Indonesia. This is aligned with the findings of Wang et al., (2022), who found that physical exercise directly increases subjective well-being among college students by improving their emotional states and general quality of life. Such findings suggest that the advantages of physical activity extend well beyond physical health and into psychological realms, supporting the current study's conclusions. Furthermore, the findings of Ghous et al. (2023) and Yao et al. (2023) reinforce the notion that physical exercise has a considerable impact on life satisfaction, especially among teenagers and young adults. These studies demonstrate that regular physical exercise promotes not just physical health but also emotional and psychological well-being, which is essential for life pleasure. Moreover, Damaris's (2023) research emphasizes the significance of physical exercise in boosting students' life satisfaction and mental health. They claim that planned physical exercise programs can result in considerable gains in mental health, which is especially important for university students who are frequently exposed to a variety of stresses.

The relationship between physical exercise and life happiness may be attributed to a variety of underlying variables. First of all, research has demonstrated that physical activity

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provides a number of psychological benefits. Frequent exercise has been shown to enhance mental health by reducing depressive and anxious symptoms, which raises life satisfaction. For instance, Tao et al. (2022) emphasise the link between increased physical activity and better mental health, which in turn results in higher levels of life satisfaction. According to Wang et al. (2022), college students who exercise report feeling happier and more satisfied overall. The psychological factors involved include the production of endorphins and other neurochemicals that improve mood and promote pleasure. Secondly, social factors play an important part in this relationship. Physical activities frequently entail social contact, which can boost social capital and build a sense of belonging among participants.

Furthermore, the regularly prescribed nature of physical exercise may establish a feeling of purpose and accomplishment, which contributes to overall life satisfaction. Lemola et al. (2021) found that goal-setting and the incentives associated with physical exercise can lead to higher self-reported life satisfaction and pleasant affect. This is consistent with the experiences of students who have found drive and pleasure by participating in campus sports or exercise programs. Besides, the cultural background of Indonesia, particularly in Java, may impact these findings. Physical activities that are communal in nature, such as group sports or community fitness events, can improve social bonds and overall well-being. This cultural preference for social interaction in physical activities may increase the beneficial benefits of exercise on life satisfaction among overseas students. Finally, the importance of self-efficacy and emotional intelligence cannot be ignored. Wang et al. (2022) found that higher levels of self-efficacy in physical exercise can lead to increased emotional regulation and resilience, both of which are important components of life satisfaction. This suggests youngsters who engage in regular physical activity may be able to improve their coping mechanisms and adopt a more positive outlook on life. This study also sheds insight on the relationship between fitness and life satisfaction among international students in the Java Region. Longitudinal or intervention studies might be helpful in the future to demonstrate a more robust result in this regard, as they examine the temporal association between physical activity and life satisfaction.

Practical Implications

On the basis of the previously mentioned factors, some useful suggestions for international students in the Java Region of Indonesia and general life satisfaction may be made. First, promoting and facilitating regular exercise among this demographic might enhance their physical and mental well-being and, consequently, their level of life satisfaction. Second, these findings might be used by officials and health experts to develop targeted programs and treatments that boost physical activity and, consequently, enhance international students' quality of life. Third, given that physical activity has the potential to positively impact students' well-being and learning satisfaction, students should create wellness initiatives that encourage it. Finally, knowing that physical activity might make people feel happier and healthier overall, individuals may use this knowledge to prioritise and regularly engage in physical activity.

Future Directions

Future research needs to look more closely at a number of aspects related to the association between life satisfaction and physical activity among international students in Indonesia's Java Region. First, compare international students in Indonesia to those in other nations or regions to better comprehend the Indonesian cultural and academic environment. Second, evaluate if improved life satisfaction from physical exercise improves academic performance and engagement among international learners. Third, investigate the differences between male and female foreign students' relationships with physical exercise and life satisfaction.

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CONCLUSION

The results of this study show that among international students studying Indonesian universities in Java, physical activity and life satisfaction are strongly positively correlated (r = 0.806, p = 0.002). A coefficient of determination of R2 = 0.63 indicates that levels of physical activity account for 63% of the variation in life satisfaction. The findings show that engaging in regular physical exercise is critical for reducing feelings of dissatisfaction and increasing a sense of fulfillment among these students. This demonstrates that physical activity is vital for fostering mental and emotional well-being in addition to its positive effects on physical health. Encouraging students from abroad to engage in physical activities and exercise might be considered an effective interventional approach to increasing their life satisfaction. These interventions can help mitigate the challenges and negative psychological effects that are often associated with studying abroad, such as cultural adjustment, academic stress, and social isolation. Universities may help improve the overall well-being and quality of life of their foreign student population by encouraging them to be more active, therefore promoting their academic performance and personal development.

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